

THE UNERRING SUN

It is Uncle Sam's Most Reliable Lighthouse Keeper.

NEVER FALTERS IN ITS WORK.

By the Aid of the Wonderful Sun Valve It Lights the Acetylene Beacons as it Sets at Night and Extinguishes Them as it Rises in the Morning.

The sun is the most trustworthy of lighthouse keepers. The sun or the heat from it lights many hundreds of beacons along our coasts and waterways evening after evening and extinguishes them punctually every morning. They are guides on land and sea that are never touched by human hands from one month's end to another. The way in which the United States government, through its lighthouse board, has utilized the services of the sun and made that great lamp of heaven a faithful and unerring servant is most interesting.

The discovery of acetylene gas was the first step toward retiring the lanky keepers of the little lights in faroff places. Modern magic was not slow in recognizing the fact that by the application of certain well known scientific principles the lighting of the great chains of beacons that girdle the coasts of the two seas and the gulf and cover the great lakes and every navigable stream in our huge country could be much simplified.

The United States did not become interested in the acetylene light and its automatically generating gas buoy until about the year 1906 and did not adopt it until 1908. Then the engineers of the lighthouse board devised some wonderful improvements, among them the utilization of the sun.

The self lighting and self extinguishing acetylene beacon is a very simple thing, but it depends almost entirely on the "sun valve," which is one of the most wonderful but least complex of the achievements of modern science.

In the first place, the source of light for these lone beacons is dissolved acetylene, which is stored under pressure in steel cylinders. One of these cylinders can be charged with enough gas to last a small beacon three years. Usually, however, in the case of floating buoys, a six months' supply is all that is necessary, as such buoys are rebunkered and painted twice a year. Knowing the size of the flame and its hourly consumption of gas, it is very easy to compute how long a cylinder will last and how often it will need to be visited. That is all the care the light will need. The sun valve does the rest.

The scientific principle upon which the sun valve depends is that light waves become transformed in different degrees, according to the nature of the intercepting body. Sunlight upon dark surfaces is converted into heat, and heat produces expansion. This expansion is especially perceptible in certain metals.

In a carefully sealed and substantially mounted glass jar nearly a foot high and about one-fourth that in diameter a thick black rod is placed perpendicularly through the center. It is supported by three slender rods of highly polished copper. The big black rod is of copper also and is coated with lampblack to make it absorb light to the greatest possible degree. The supporting rods reflect light without absorbing it and do not expand or contract to the same extent as the largest rod.

The thick black piece of copper in the center of the jar is extremely sensitive to light and heat. As the sun appears and the atmosphere grows warmer in the morning this rod lengthens. It pushes down into the metal chamber in which the glass jar rests and touches the end of a lever. It presses down on this lever, which is controlled by a spring and cuts off the flow of the gas to the lamp. When the sun disappears from view in the evening and the temperature of the air falls the process is reversed. The rod contracts and releases its pressure on the lever, allowing the gas to flow upward to the lamp. The gas is ignited by a little pilot flame that is never extinguished. Thus the beacon is lighted at the proper time and is put out when it is no longer needed, although along desolate coasts it may never gladden the human eye for months at a time.

The engineers of the lighthouse board say that the precision of this device is almost incredible. It can be used with equal certainty in equatorial heat and in polar cold, for it responds with the utmost accuracy to small variations in temperature. It is used on lonely islands in the Pacific. There are nearly a hundred of these sun valve beacons in Alaska. In summer they are aids to navigation, and in winter they guide the travelers on dog sledges over the frozen wastes.—Harper's Weekly.

Daddy.
"I understand that a number of women have learned to smoke cigars," said the frivolous observer.
"I don't believe it," replied Mr. Meekton. "The kind of cigars that women buy nobody could smoke."—Washington Star.

Sarcastic.
"Forty—I'd have you to understand, Mr. that I'm not such a fool as I look. Breakfast—Well, then, you have much to be thankful for."

Riches are like sea water, the more you drink the thirstier you become.—Schopenhauer.

Lieut.-Col. H. C. Dowther, military secretary to the Duke of Connaught, will leave on Saturday for New York to represent his royal highness at the funeral of the late Whitehall Road.

SARDINE FISHING.

How the Toothsome Little Fish is Taken in Fundy.

The sardine is a frequent article of diet upon Canadian tables, and however much its flavor and hankies are appreciated but little is generally known of the processes through which it passes before its appearance in the grocery.

The true sardine (*Clupea sardina*) is a small fish of the Mediterranean and derives its name from the island of Sardinia. This is the sardine put up in France. The sardine packed in Canada, the United States and Norway are the young of the herring (*Clupea harengus*), from five to seven inches in length.

These young herring come in on the coast of the Bay of Fundy in immense schools from June to October. They are caught in weirs (pronounced "ware" among the fishermen of New Brunswick). The weir is a large, hoop-shaped enclosure of stakes, brush and net, far enough out from shore so that at low tide (and the tide in the Bay of Fundy rises and falls some twenty-eight feet) there will be from four to ten feet of water in it. A fence of stakes and brush known as the "lead" runs out from the shore to the gale of the weir.

The young herring, coming in from the sea close to the shore. Striking the lead they will not swim between the brush, of which it is composed, but swim along it into the mouth of the weir. The man who is running a weir lives close to it during the season, and as the fish fill into a weir on the high tide he fills his weir each high tide, and if he finds fish in it he drops the net over the gale. Usually the fish come in at low tide. At low tide the weir is seined. A sein is a long net deep enough to reach the bottom of the weir, with weights at the bottom and floats at the top. This net is stretched round the circumference of the inside of the weir by a man in a boat, then gradually drawn in until the fish are gathered into a practically solid mass.

Then the fish are dipped out by a huge dip-net with a long bag. The hoop of the net is placed in the boat and the bag pulled in hand over hand, loading the fish into the boat. Some idea of the immense numbers of sardine which sometimes run into a weir may be obtained from the fact that as high as three hundred hogheads, each holding four barrels, have been taken out at one time. From fifteen to thirty hogheads is considered a fair catch, and anything over two hogheads as worth seining for. The price paid to the owner of the weir varies from \$3 to \$30 per hoghead, according to the abundance or scarcity of sardines.

On arrival at the factory the fish are hoisted from the hold to the dock and are sent down a sluice. Here they are deposited in brine tanks. From these tanks they go through the flaking machine, which raises them to the next floor and arranges them in a layer over large trays known as "flakes." These flakes are placed in a large rack on wheels which is wheeled into the steam-chest, where they are steamed for ten minutes. From the steam-chest they are wheeled into the drying-room, where they are dried in a hot air blast. When dry they are removed from the rack and the flakes are carried to the packing tables, at which girls are at work packing the fish into tins. The tins and covers are stamped out of sheet tin by machines on the premises. Considering the immense number of young herring which are caught in the weirs it is no wonder that many have predicted that the supply of herring would soon give out, but the fact remains that the season of 1911 was one of the best, if not the very best, in the history of the sardine industry in Canada, the owner of one weir making \$5,000 in two weeks.—Canadian Courier.

His Reporting Days.

During the days of his apprenticeship in the field of literature Arthur Stringer was a reporter on The London Free Press. His faculty for dramatic effect was already beginning to show itself, and he sometimes handed in copy more vigorous than discreet. Upon one occasion he was sent to write up an entertainment in which several out-of-town singers took part. Mr. Stringer's article criticized one of them as "rendering Tosti's 'Good-bye' with the expressive cadences of a phrenograph out of breath." Very naturally the editor made an objection to such unnecessary compliments. "If we let that go in, her husband would dynamite the building," Stringer was told.

"Then we'll compromise," agreed the reporter. "We shall say 'she rendered Tosti's 'Good-bye' indescribably.'"

"That won't do, either."

"Then," she rendered Tosti's Good-bye."

"Much better," said the editor. "In any event," concluded Stringer, "I had the satisfaction of getting my sentiments down on paper for half an hour. I don't care now whether you print them or not."—Star Weekly.

Edmonton Looks Ahead.
Plans for fifty years ahead that mean an ultimate aggregate outlay of twenty million dollars, have been ordered by Edmonton from a landscape architectural firm.

CARRYING TESTAMENTS.

Thirty-One Thousand Canadians Are Pledged To Do So.

Two years ago there were comparatively few men and women in Canada who made a practice of carrying with them wherever they went a Bible or a New Testament. To-day there are over 31,000 who are pledged to do so, and every day sees the number grow, despite the dismal prophecies of those of little faith, who looked to see the effort die a natural death.

Canada was the first country to take up this work in a thorough systematic way, and to-day leads the world in every particular as far as the league is concerned.

A unique feature of the work in Canada is found in the fact that there are no fees of any kind attached, nor is there any cost to any church taking up the work. Special attention is paid to the Sunday school work, and so simple is the league's plan of operation, that it can operate through a Sunday school or any other department of a church without creating any extra machinery, or in any way adding to the burden of those interested.

The success of the league in Canada is nothing short of remarkable. There are over 31,000 members enrolled, and over 500 local branches. These branches are at work in every province of the Dominion, and almost every large city is represented. It is interesting to note that 50 per cent. of the members are young ladies under twenty-five years of age; that 70 per cent. are Sunday school scholars, and that Ontario has slightly over 300 of the branches mentioned.

When the founders wanted a man to promote the league they picked Mr. Waite, a young man just finishing his education. That their choice was a wise one no one can doubt after reading of the league's success. As Canada was the first country systematically to take up this work, Mr. Waite had to work out a system of promotion that would be wide enough to embrace a country and yet be applicable to the individual branch, no matter how small.

Mr. Waite brought to this task an organizing ability that one hardly expects to find in one so young, and a gift of public speaking that has stamped him as one of the best young men speakers in Ontario to-day.

Asked as to the prospect for the work in Canada, Mr. Waite said: "I want to say first of all that the league has come to stand, it will be a permanent movement. Judging by our success to date, and keeping in mind the kindly attitude of all denominations towards our work, I have no hesitancy in saying that within five years the league will have a total membership running close to the 300,000 mark, with branches at work in every part of Canada. When the conditions of membership in the league are remembered, some idea of the value such a movement will be to the religious and national life of our country can be realized."

Canada's Black Rice.

Along the shores of Rice Lake, which separates the counties of Peterborough and Northumberland, Ontario, there is much life when the black rice harvesting time arrives. It is the signal for Indians to move out among the rice beds of the Hiawatha Reserve, the Alderville and Hiawatha. Indians usually muster forces about the middle of September and repair to the mouth of the Keene river.

Peterborough county, which has been the scene of rice harvesting operations for a number of years, is practically the headquarters for the band during the harvest season, and it is in close proximity to several of the largest beds on the adjacent waters.

The sole right to gather the rice is vested in the tribes, whose Indian parentage is unquestioned, and the primitive custom is one of the few that have withstood the changes of time.

A visit to the scene of work on a soft September day is worth while and is the means by which one can see the Indian as he existed in the more primeval age. The twentieth century has robbed the old-time custom of much of its charm; this is especially noticeable in the present-day garb of the redmen, but the old-time picturesque is still much in evidence at the annual gathering of the rice harvest.

Simplicity and primitiveness characterize the preparation of the rice for market.

Trawlers Return.

After sailing over 15,000 miles in nearly four months the two pioneer steam trawlers of the British Columbia Fisheries Co., have just arrived at Prince Rupert. They are the "Canada" and the "Triumph." It was only after a very exciting voyage that the former reached her destination in safety. Over 90 tons of coal were taken on at Union Bay on Vancouver Island, loading the boat down to the gunwale so that she became almost unmanageable in 40 miles of dirty weather between Banks Island and Skidegate. These forerunners of the extensive fleet which will play an important part in building up the prestige of Prince Rupert as a fishing port are of the most modern design and great interest will attach to the report of their first haul.

His Wealth.

Magistrate—You were begging in the public streets, and yet you had 15 shillings in your pocket.

Prisoner—Yes, your worship. I may not be as industrious as some, but I'm no spendthrift.

Wouldn't Be Low.

"I understand that Mrs. De Style is a great stickler for having everything of the most exclusive kind."

LITTLE OVERSIGHTS.

Small Slips That Have Cost Murderers Their Lives.

"The mills of the gods grind slow, but they grind almighty fine." Edward Jardine, an Ontario youth, paid the penalty of his crime on the gallows at Goderich a little over a year ago. Jardine murdered a young woman in a particularly brutal manner. His mental development was poor; he was not suspected. The police were without a clue, and were scouring the country for the perpetrator of the fiendish crime. Jardine talked; he talked continually of the crime—the brutality of it, and all its hideous features. His talk created suspicion, he was watched, later arrested, confessed and was hanged. Jardine's idea in talking was to divert suspicion from himself, but he talked too much.

Two men were standing at the Union Depot among the crowd waiting to board the International Limited. A detective was standing on the platform. When the crowd moved these men also moved, in and out, until one of the men, noticing the detective watching him, nudged his companion, and the nudger just meant eleven years in jail for him—costly nudges. He was arrested on suspicion, his description wired broadcast, and a police officer came from Washington and got him. He was a notorious bank robber.

James Murphy, alias Brady, was a "crook" who loved good clothes. A store was broken into at Newmarket, clothes stolen. Brady was arrested, convicted, and spent nine months making large stones smaller. Three weeks after his release a jewelry store was robbed, and over five thousand dollars in jewelry and money taken. Next door was a tailor shop which was found to have been entered and an expensive suit taken. Brady was located, some plunder found in his possession, and the tailor's suit in his back. This time he got four years. Clothes were his weakness.

It had not been for a woman, Rice of the Rice, Rutledge, and Jones trio, would probably never have been hanged. After robbing postoffices, merchants, and others, the three desperadoes went to Chicago, where they were traced by letters from Rice to Toronto, and while being driven from jail in a cab were supplied with revolvers which were thrown into the cab in an old felt hat—presumably by a woman—it was never learned. Rutledge committed suicide by throwing himself over a balustrade, falling three flights in the jail. Jones died in jail, the result of a bullet wound, and Rice paid his score in the jail courtyard. It was learned by the police that the trio had planned to break up, but before they had carried out their plans the letters to the woman entrapped them. Was the weakness in this case a woman?

Reginald Birchall, an Englishman, deceived a fellow-countryman into a swamp near Woodstock and murdered him. He had interested Benwell in some timber lands and had the young man send to his father in England for a draft. He shot Benwell, intending to forge his name on the receipt for the draft, and get the money. Birchall then carefully cut off every identifying mark on Benwell's clothing, took his ring, watch and papers, but inadvertently dropped his cigar case. "I was utterly insane when I overlooked the cigar case," he afterwards wrote in his diary.

The finding of the case led to the identification of Benwell, and the arrest and conviction of the murderer. The list is long of men who have gone to the gallows through some little inadvertence in a well-laid scheme of murder—some apparently trifling accident that has developed into a giant of condemnatory circumstance.

Guy Curtis, Farmer.

The name of "Guy Curtis" is embalmed in the records of Canadian intercollegiate sport with an individuality all its own. Guy Curtis quit the game about six years ago to manage a farm inherited from his father. Fifteen years had he spent at Queen's University, Kingston, registering in "Arts" session after session, without attempting to make an academic progress. His devotion to rugby and hockey finally won him a national reputation, and when about forty-five years old, he reluctantly quit the university halls and became a "retired farmer" in Eastern Ontario.

The other day he returned to Kingston to renew old acquaintances. One of his boon companions was Dr. Jock Hart, now a wealthy young citizen, acting as an official of the Canadian Locomotive Co., and a well-known amateur sportsman. Guy paid him a visit at his office and listened seriously to the doctor's description of how heavily the cares of a large business weighed upon him since the old days at college. When he had completed the tale, Curtis nodded with sympathetic gravity and observed dryly:

"Jock, who blows the whistle when you're not here?"—Toronto Star Weekly.

Fell 3,000 Feet.

Prof. Charles Wolcott died recently in Edmonton following an illness of several months. He went to Edmonton at the time of the exhibition last fall, and was taken ill. Prof. Wolcott's death was indirectly the result of a fall of three thousand feet from a balloon in South America seventeen years ago. Practically every bone in his body was broken by the fall, and it was necessary in the operation which followed to lay bare the spinal cord for a distance of nine inches. The case attracted world-wide attention at the time, and newspapers and magazines devoted pages to the sensational fall and no less sensational recovery.

Not Much Progress.

A Montreal man was fined because he entered a house to protect a wife from assault by a drunken husband. Civilization has not progressed so very far since the experience of the Good Samaritan.—Ottawa Journal.

The provincial cabinet will decide on Friday when the legislature will meet. George Reece, twelve years old, was drowned in the new Welland canal. The United States parcel post was inaugurated Wednesday morning.

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