CAPE HENLOPEN LIGHTHOUSE, DELAWARE (1890).

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(1) LIFE IN THE LIGHTHOUSE [1] [2]

A Chance for a Student Life—The Keepers Are All Republicans—The Routine of Duty—Lamps, Towers, and a Foghorn.

Lewes, Del., April 23.

Once upon a time, when Mark Twain really wanted to work and could not do so because of the intrusion of too many good and indifferent friends, he said that the only hope of ever accomplishing literary work worth doing was in getting the writer immured in a prison where he would be shut off from all sorts of interruptions. It is likely that at that time Mark Twain had not made a study of the lighthouse hermits employed at such points as Cape Henlopen. If utter isolation and quiet solitude are wanted for the production of Mark Twain's best work, let him apply for a job as lighthouse keeper with a location on Cape Henlopen. He might not be able to attend to the duties to the satisfaction of the ship masters sailing by, but he would get the isolation and solitude.

In no place along the coast can so great a variety of lighthouses and the lives of their keepers be more conveniently studied than about the artificial harbor formed by the Delaware Breakwater. There is a giant tower, with its fixed white light flaming so high in air that on favorable nights it has been seen twenty-five

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[2] The original article was unsigned; however, its writing style, subject matter and date suggest that the *Sun's* long-term correspondent John R. Spears was its author.

miles away. There is a red light on one end of the breakwater and a flash light on the other end. There is a foghorn on the breakwater and a. bell buoy on the point of Cape Henlopen, and both are very necessary parts of the system of warnings to sailors. There was a fog bell on the breakwater, also, but the. September gales last year washed it away. A talk with the keepers of the various lights here will show very well what their duties are and what sort of a life they lead.

The Cape Henlopen light is what is called a fixed white light of the first order. The lamp is on top of a white masonry shaft, and is 128 feet above the tide. The lamp itself is not a very simple device, though easily operated. There is a cylindrical bowl for holding the oil, with a capacity of perhaps five gallons. Resting on top of the oil is a piston or plunger. It is raised to the top of the bowl by winding up a winch. Then the bowl is filled with oil and the plunger allowed to press down on it. The weight forces the oil up through a small brass tube and into the wick holders. There are five wicks in circles one within the other, the outer circle being about four inches in diameter. The air is drawn up through spaces between the wicks, around a glass chimney fifteen inches high, serving to promote the draught, while a sheet-iron chimney above the glass and leading out of doors still further aids the draught. The lamp stands on a pedestal in the center of a little six-foot room, the sides of which are glass lenses, so arranged as to capture all the rays of light that radiate from the flame of the lamp and cast them out in planes parallel with the plane of the horizon. Seen within this room the flame is four inches in diameter by five high, but seen from the sea it is a great flame, as large as the lenses themselves.

Outside the lenses there is a cast-iron flame which supports a wall of plain window glass a quarter of an inch thick. On one side of this light is a broad sheet of red glass about one-eighth of an inch. thick. The keepers call it a red cut, and when a vessel has that red cut fair over her stern she is heading up the main channel of Delaware Bay.

To keep this light burning the services of three men are required. A veteran of over twenty years' experience, D. D. Joseph has charge. The routine of duty is simple. The night is divided into three watches. A man comes on duty at 2:30 o'clock in the morning. He ordinarily has nothing to do but sit in a chair and keep awake until the almanac says the sun is rising out on the Atlantic. Then he puts out the lamp and begins to clean up. The chimney, the lamp itself, every fraction of an inch of surface about the lenses and the glass outside must be

wiped with the utmost care. Linen towels ordinarily serve, but sometimes ammonia and at others a white powder used among shore people for cleaning silverware is applied, for dirt that comes from no one knows where is dashed against that lamp, in spite of its height from the ground and sea. After the glass is cleaned and the bowl of the lamp filled, the little room itself must be cleaned and dusted. Then the stairway to the room below, where the man on watch sits, must be wiped off, and then the watch room cleaned, and the gallery around outside as well. Below that is the weary stairway from the bottom of the tower, a distance of eighty-five feet, to be cleaned. The deck of a man-of-war and parlor floors are synonyms for cleanliness, but no structure in the world has so much pains taken with it to keep it absolutely clean as a lighthouse, for perfect cleanliness is essential to a perfect light.

The man who cleans up has to remain about the lighthouse all day, for it is the rule that someone must stay there. He also lights the lamp at sundown, and sees that it is kept burning until 11 o'clock, when he calls his relief. He used to have an electric bell to call him with, but that is out of order, and so he has to go down to the dwelling which stands near the foot of the tower. The midwatch lasts until 2:30. There is commonly nothing to do but watch the lamp.

However, the lamp will not always work well. Although the Government pays 10 cents a gallon wholesale for its oil, and ought to get a perfect quality, the oil is often dirty—the quality is not even. The oil is therefore strained through fine silk gauze into the can in which it is carried into the tower, strained through the nozzle of this can into a double strainer that leads to the lamp bowl, and strained thence through the little tube that leads to the wicks. In spite of three previous strainings, the last strainer sometimes clogs, and the watchman must clean it, or in fifteen minutes the lamp will go out. Last year the Cape Henlopen light burned 1,975 gallons of oil.

The dwelling of the light keepers is a two-story wooden structure, a quarter buried under the sand wave that is sweeping across the cape. The keepers have had their wives there at times, and there is ample room in the house for two families; but the sand was too much for the patience of the women. It flows in around doors and windows, and there is a great heap of it in one end of the hall. Except for the sand, however, the dwelling is as clean as the lighthouse. The men take turns in doing their cooking and in caring for the house, and on the days they are not on watch they go away to visit their families in. Lewes.

So far as manual labor is concerned, Henlopen's light keepers have but little. The pay is $760 a year. Nevertheless, the men of Lewes are not all standing in line waiting for a chance to get appointed lightkeeper. The lighthouse stands three miles from the village in the midst of a desert of yellowish white sand. The road to it is heavy to drive and heavy to walk. When there, the keepers are cut off from almost all civilization. The lighthouses on such coasts are most lonesome places.

When the wind blows its highest, the men have to get down on their hands and knees and crawl from the house to the light tower, and through a dancing cloud of sand at that. When standing up with a can of oil in hand, they have been lifted from their feet and thrown into the sandbank. In summer the heat reflected from the sandy waste about the place is all but intolerable, while in winter no blast is more chilling than that which sweeps from the sea across this desert.

To a stranger, however, a stay of a few days would prove novel and delightful, if he had a taste for nature. The study of the birds would alone occupy many days at certain seasons. During the migration of the birds along the coast the opportunity for study of ornithology in certain branches is unequalled. Not only do the birds dash themselves to death against the lamp, but they gather in great flocks on the gallery about it, where they are so much bewildered that the keepers pick them up and handle them as chickens are handled. The Smithsonian Institute at Washington sends printed blanks to the lighthouses which, if filled out intelligently, would add to the general knowledge of bird life. But the keepers know very little about the birds, and care less. So, although as many as "three pecks of birds lie dead on the sand" at the foot of Henlopen's tower some mornings, and varieties never noted before are seen there, the world is none the wiser.

One night when Keeper Joseph was on watch, and only the moan of the surf disturbed the air, there came a crash in the lamp over his head, that made him think the end of the world had come, it was so loud. After gathering his wits together, he began to investigate and found that five mallards flying in a line had struck the glass. The first one crashed through the outer glass and the rest followed through and killed themselves on the thick glass lenses. The. lenses were broken. Even a sparrow flying against the glass makes a resounding noise.

The fights between eagles and fish hawks often attract the attention of the keepers. They say the eagle will catch a fish dropped from so small a height as

ten feet above the water, but when the eagle has chased the fish hawk a thousand feet in air, and the hawk there closes its wings and drops like a bullet until almost in the water ere it releases its prey, the wild plunge which the eagle makes in pursuit is something that arouses the enthusiasm of even the most ennuied keeper.

The keepers of shore lighthouses furnish their own food. Where not too inactive, they are able to vary it with fish and game of various kinds. At Henlopen and on the breakwater the keepers depend on a cistern for drinking water.

The flash light on the west end of the breakwater is simply a big brass lamp with a single wick that stands on a pedestal and has a globe lens around it that is kept revolving by clockwork. At intervals of 120 degrees in the circumference of this globe is a bullseye lens that concentrates the light of the lamp in a powerful beam. As the bullseye comes between the spectator and the lamp the spectator gets this beam of light fair in his eyes, and a very powerful light it is. Between these flashes the lamp is scarcely visible, because the glass between the bullseye is so arranged as to reflect the light into the opposite bullseyes. Because the clockwork may get out of order as well as the lamp, this light, even if it be a small one, requires two attendants. They receive $600 a year and certain rations of food, such as flour, meat, &c. At the other end of the breakwater is a fixed light, which for a great part of its circumference is walled in with red glass. On one arc, however, there is a white cut. When the sailor bound north gets along where the red light of this pier turns to white, he knows that he is then clear of the cape and can starboard his helm and make for the breakwater and such safety as it affords.

Under this red light is a foghorn. A hot-air engine that burns about as much coal as a bar-room stove pumps air into a tank to a pressure of 13 pounds per square inch, and at intervals of 45 seconds opens a valve that lets the compressed air into a 10-foot copper trumpet. The bellow that follows for twelve seconds is often heard fifteen miles away, though at times when the air is not in fit condition it may not be heard a mile away. It is an interesting fact that sailors in vessels two miles away sometimes do not hear the horn, while others ten miles away in the same direction hear it plainly. The sound seems to hop over the near-by sailors. Two men care for the foghorn and red light, and get $600 a year and rations for it.

"*Does the foghorn make you want to die sometimes?"* was asked.

"*No: that is the least of our troubles. It puts us to sleep*," said the keeper.

One of the troubles of the breakwater lightkeepers is the loneliness. They get very tired of solitude. They are allowed to bring their families there for a visit occasionally, but not often nor for a long stay. There is good fishing off the breakwater in the season, but it grows monotonous. Picnic parties, with very pretty girls, come over on occasions, but the lightkeepers, being married men, do not, of course, take much interest in them. The worst of all their troubles, especially since the great storm of last September, is a sense of insecurity. The gallery of the red tower is sixty-five feet above the tide, but in that storm the solid green waves rolled up over that gallery with a power that seemed irresistible. The tower is doubtless secure, for it is made of boiler iron and is well bolted to a bed of concrete in the breakwater rocks. But when it sways under such blows as it got then, it does not seem so. If the tower ever does roll off the breakwater, two men will go to their death in it. The flash lighthouse is no more secure than the other. It is a white cottage with the lamp tower above the roof. Both houses (the dwelling at the east end is inside the tower) are the most perfect models of cleanliness, although the inspector comes around but once in three months. It is a matter of pride with lighthouse men to keep their establishments in fine condition.

The keeper of a lighthouse gets his appointment through political influence. The consequence is that, with rare exception, the keepers are Republicans, and very earnest and active workers at the polls when the lighthouses are located so that work of that kind can be done. During Mr. Cleveland's administration a few lightkeepers died and a less number resigned. Some of these vacancies were filled by Democrats, but where head keepers went out of office, Republican subordinates were promoted. How the Republicans down this way chuckle as they tell how they hoisted out the Democrats when Harrison came in. There is just one Democrat in the service along Delaware Bay, and he holds on only because his brother is an active and efficient Republican, and able to keep party associates out of the way.

A light known as the Green Hill lighthouse, a mile west of town, is built of boiler iron and is supported by a great derrick. It is a novel-looking structure. There is but one keeper. He has a three-wick lamp to care for. He has to get out of bed very frequently every night to make sure that his light is burning, and not

infrequently spends half the night in the tower with the lamp. The pay is $500 a year, but there is a large, fine house and a good garden with the lighthouse. It is a range light, and less important than the others.

What with ample leisure and light physical toil and the isolated position of the lights, the keepers might well lead student lives. They are supplied with libraries by the Seaman's Friend Society of New York, but the books are kept locked in the bookcases, for the selection is not of the kind to attract anyone but a theological student, and lighthouse keepers invariably take more kindly to politics than to theology. About the only way for improving the service, so far as anyone can see, is by scraping off the old Republican barnacles and putting bright new Democrats in their places.

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(2) HENLOPEN'S WAVE OF SAND [3] [4]

A MIGHTY ROLLER THAT IS SWEEPING ACROSS THE CAPE.

Neither Marshes nor Forests Have Been Able to Obstruct Its Course—Uncle Sam's Lighthouse Buildings Mainly Buried.

Lewes, Del., April 26.

Without doubt one of the most interesting features of the Atlantic coast of the United States, and, in fact, one of the most interesting phenomena of the whole country, is the travelling hill of Cape Henlopen. A ridge of sand, more than a mile long, 50 feet high, and 200 yards wide in the base, is rolling inland, like a mighty wave from the sea, and with a power that is irresistible. Formed at the water's edge, nobody knows certainly just when, it began to move inland. Within the memory of men barely past middle age, it has traversed a space worth describing in detail.

In 1845, when Gen. Joe Johnson, as a Government engineer, was engaged in surveying this part of the coast, he found on the north side of Cape Henlopen a great ridge of sand. It was in appearance like the ridges that divide the Great South Bay of Long Island from the sea, save that it towered seventy-two feet above high-water mark. It was a ragged ridge, with coarse grass growing over a few parts of its surface and a few gnarled and stunted pines on its southern or land side. Behind it was a salt marsh or valley, where the water was from an inch to two or three feet deep at the lowest ebb tide. Inland from the marsh, and indeed on low ridges in this marsh, was a great [growth] of pine trees. Half a mile back from the beach, trees were found from two to three feet in diameter, and tall in proportion.

Winding along through this forest was a road established in the old colonial days, and having milestones by its side to show the wayfarer how far he had travelled from Lewes on. his way to Henlopen lighthouse.

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[3] Published by New York *Sun*, April 27, 1890, page 23? Edited by Duncan S. Campbell, April 2019.

[4] The original article was unsigned; however, its writing style, subject matter and date suggest that the *Sun's* long-term correspondent John R. Spears was its author.

In making the survey, Engineer Johnson noted that whenever the wind came in from north'ard, it picked up the sand on the weather side of that great ridge in such clouds that no one could travel along the ridge except when the face was covered with a thick veil, and even then, only with great effort and much pain. It was like facing a blast from the desert of Sahara, and sometimes almost like facing a charge of birdshot.

The sand thus picked up by the wind was carried up over the brow of the hill, across the narrow plateau on the southern side, where the wind formed an eddy that could not support the weight of the sand. The wind was very thorough in its work, for it gathered the sand from the entire face of the ridge to carry over to the rear. Thus, with every northerly gale, inch after inch was cut away in front and carried back. Inch by inch the face of the ridge receded; inch by inch the rear face advanced. The gnarled and twisted pines on the back surface disappeared under the wave of sand. The edge of the marsh was reached and covered. The little tree-crowned ridges were next buried out of sight. Then the great forest was reached. Where the trees stood thick and formed a solid wall of limbs and leaves the sand wave rolled up into a perpendicular wall before them, higher and higher, until level with the treetops, and then curled over and broke on them as a wave of water might have done. Where the trees were far apart, the sand flowed into and filled the opening. In one way and another it steadily advanced, and the people saw with wonder the forest buried before their eyes. The great trees, that seemed to be able in their strength to defy all that nature might bring against them, strove to put forth new branches above the rising tide, grew faint in the struggle, turned their green leaves to yellow, their yellow cones to gray and black, and died of suffocation.

As the years passed the receding wave began to uncover the old surface of the ground that had been buried. Old landmarks along the edge of the marsh reappeared. Even the little ridges themselves, with the old sod dead, but easily recognized, appeared, and finally the wind scooped the sand out of the hollows of the marsh, and today the tide ebbs and flows there, and at low tide the water is about as deep as it used to be before the sand wave swept across, the chief difference between the marsh as it used to be and as it is now being that there are now no ditches in it.

Then, strange to tell, a new growth of pines sprang up on the little old ridges and a new ridge of sand formed alongshore where the old one had stood. The new ridge alongshore is only a small one—perhaps twelve or fifteen feet above

the water in places, but it is growing as the new trees behind it grow, and it may possibly start inland as the big one that preceded it did.

As the big sand wave continued its way, the old forest that had been buried began to be uncovered again, so that now the stranger that traverses the ridge sees on one hand the living giants of the forest gasping in the last throes of death, and on the other the bleached and decaying skeletons of those that had to succumb. It is a picture that is at once desolate and depressing.

The old road that once led through what was the heart of the strip of forest land between the beach and the creek that runs westerly through Lewes is now just about under the crown of the advancing sand wave. Could the wave by any means be stopped in its course, so that the old road would be forgotten after a hundred or two of years, some savant in digging there would reach the old milestones, and mayhap a piece of old buggy wheel or tire, and would stop to marvel. What untold millions of years, he would say, must have elapsed since these milestones and that old buggy wheel were made!

At its extreme eastern end, the great wave has entered upon the domain of and made a deal of trouble for Uncle Sam. Uncle Sam's lighthouse stood right in the path of the sand roller. There was a comfortable old-fashioned two-story house beside the tall white tower that held the lamp, and on the weather side of the tower a house used for storing oil. Back (south) of the house was a garden. At first, the spray from the wave served merely to annoy the housekeeper; it was carried on the wind and dashed against doors and windows. No kind of weather strip could keep that spray from seeping in through cracks and crevices and even filling bureau drawers. That was bad enough, but the wave was all the time advancing, and pretty soon drifts of sand, for all the world like drifts of yellow snow, began to accumulate at the house corners, and, worse still, to spread across the garden and interfere seriously with the cabbages and sweet potatoes. Then the wave itself arrived. Rising like a comber on the beach, it towered for a time above the oil house, and then, over it tumbled and buried the little building out of sight. Then it gathered about the old home of the lightkeeper, and in time that, too, was covered, as the oil house had been, while all trace of the garden had disappeared long before burial of the oil house.

It is possible that the old house of the keeper could have been saved by moving it, but it was old and not very good, and so Uncle Sam built a new one. He placed this in the lee of the tower, where an eddy had kept a small clear space. As the

wave advanced, the eddy was changed, and now the sand is heaped high on the veranda on the south side of the house, while the north side of the building projects out into a crater like that of a volcano. In this crater also rises the tower.

Five years ago, the crest of the wave was twenty-five yards north of the tower. Now it is fifty or sixty yards south of it.

At this part of the cape there are no trees. The wave is therefore not so high as it is further west, but the crest is still at least 40 feet above the surface of the original sand. At the present rate of travel, it is not unlikely that five or six years will carry the wave past the lighthouse so far that the old oil house and old dwelling will be uncovered, while after ten or fifteen years the keeper may begin once more to cultivate the cabbage and sweet potatoes so long since abandoned.

Judging by what the people say here, the wave travels not far from 50 feet a year where its course is not obstructed by the forest, but even there it travels perhaps 35 or 40 feet. It has covered half a mile in 40 years. Because of the lay of the forest, the eastern end of the wave has advanced more rapidly than the other, and the trend of the wave, which was formerly from east by north to west by south, has swung around with the east end two or three points further to the south. The sand where the wind strikes it is packed hard so as to afford tolerable walking, but elsewhere the foot sinks in half shoe-top deep. But on a windy day the rolling ridge will be found a worse road to travel than ever Jordan was. The land traversed by the wave is low and of no great value. Nor is the timber-covered worth anything, the larger trees having been culled out to make piles for the piers that have been constructed behind the breakwater at one time and another. Just what set the roller in motion is not known. It was travelling in Gen. Johnson's time, but had not been many years on its journey, they say here. It seems likely, however, that a fire which, it is said, was set on the ridge at the time work began on the breakwater in 1828, so destroyed the vegetation on the ridge's surface that the wind was able for the first time to get a good hold on the sand for the entire length of the ridge.

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