TO OUTGENERAL OLD OCEAN

THE PROBLEM OF SAVING NEW-JERSEY'S SEACOAST.

STATE GEOLOGIST SMOCK HAS GONE

FORMATION - IN THE FALL THE ATTEMPT TO KEEP BACK THE AT-

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LANTIC WILL BE BEGUN.

TRENTON, N. J., July 16.—State Geologist Smock has sailed for Europe on a tour of inspec-

tion that means considerable to the people of New-Jersey, for he goes to study the dikes of Holland and to secure other information that may be utilized in solving the problem as to how to save the New-Jersey seashore coast.

Prof. Smook has given considerable attention to the inroads that are being made by the Atlantic Ocean, and has succeeded in getting the United States Geodetic and Coast Survey to

take the matter up at the expense of the United States Government.

Inroads have been made at Long Branch against which there is now an organized effort on the part of the property owners. They have become so serious that State and national aid is to be secured to prevent further damage. Prof.

Smook is of the opinion that the work of devastation can be best checked by the use of ter-

races, the same as used on parts of the Holland coast. His object in going abroad at this time is fully to equip himself with information, so that when the United States Geodetic Survey begins its work in the Fall, he will have some definite information to present to it. In the meanwhile the New-Jersey State Geodetic Survey will be on the lookout for information of a local character. The State commission expects to be able to furnish considerable data to the United States authorities. The matter is to receive careful investigation, and the exact cause of the inroads and savage currents is to be ascertained and a remedy provided. The ocean drive on the bluff, which has been for years the pride of Long Branch, is each year

becoming narrower, and in a short time will be impassable. There are currents at work that have cut away, within one hundred years, at least three-quarters of a mile of fringing beach and upland. The old tide line was at least that distance from the present tide line. The State

Geologist has the testimony of old residents of Long Branch, who state that they farmed on land which is now a half mile out in the water, showing a tremendous eating away of the beach in half a century. The disposition of the tide is to cut away that shoulder of the coast which is made by the indentation of the Raritan Bay and Sandy Hook. The bluff at Long Branch has a layer of gravel and upper crust of good clay. The sea simply cuts out the gravel and the road gives way. From the pier to the West End this work of destruction has been going on persistently for ten years. The State has looked into the matter, and unless some permanent change of the tide is secured. Long Branch Village will sooner or later crumble away. Atlantic City had an experience of the same

kind fifteen years ago. The Absecom Lighthouse

was in danger, and the Government, to save its property, hit upon the idea of extending jetties out into the ocean for the purpose of changing the tide, which was strong and treacherous at

that point, being near the Inlet. The waves then dashed about the bottom of the lighthouse. but now the tidal line is nearly a half a mile distant. The current was changed at this point, but it began its destructive work a few miles further down the beach and no remedy has yet been found. The records of the State Geologist's office show that the changes in the upper coast from Sandy Hook to Asbury Park have been numerous during the past century. In 1764 the Sandy Hook Lighthouse stood near the end of the point, while now it is nearly a mile distant in a northwesterly direction. This changing current has been the subject of much study on the part of the United States Coast Survey. They are again going to take up the work of marking an exact coast line, so that it can be, in future years, compared with the tidal line, so as to see just where the change along the beach is made.

No matter what is done, it must be considered only temporary for ten or more years, because the history of the coast shows that the opera-

tion of the tide changes about every decade. It is possible that by the time this work is completed the work of destruction will begin elsewhere, probably above or below the proposed bulkhead.

The traveler along the Jersey coast who carefully observes the tide changes, and asks the meaning of many strange things, can give an answer to his own query by this modification, that the wild wave says, "Move in." That the tide is coming in cannot be denied. There is much evidence to sustain the general statement. The appearance of trees in the mud, with their roots embedded in hard bottom, many feet below high-water mark, is frequently notad. The occurrence of Indian shell beds on this bottom, wholly submerged in the meadows to some depth, and, better still, the finding of old bridges and crossings of poles or corduroy roads several feet below the surface show conclusively that the tide has been coming in, and

Along the Jersey coast there are some remarkable evidences of this change. In Deal Lake stumps have been found at the depth of ten to

twenty feet in digging for peat. On the north shore of the Metedeconk River old meadow sod has been found at the depth of eight to ten

that there is a rise of the water level.

feet below the surface. In the famous Mosquito Cove, near Barnegat, dead logs have been found on the upland border. At the distance of three feet under the mud huckleberry brush has been found. Forked River, near the village, is full of stumps, which are found at the depth of three feet. The old inhabitants say that the cedar swamp which surrounds the river grew nearly a mile further east than it does now, and has since been submerged. There is some remarkable evidence of this encroachment of the tide near Tuckertown, in the marsh bordering Great Bay. Here are many knolls and islands of upland, which were once wooded and are now level with the surface of the meadows. The timber has died off and the stumps are now in the marsh. Samuel Headley of Tuckertown is authority for the statement that stumps have been found near Ballenger's Creek, eighteen inches below the surface. Capt. Joseph Golder of Beesley's Point states that the water level in some parts of Cape May County is over six inches higher than it was twenty-five

years ago. The origin of almost every beach is a sand bar of considerable magnitude, which has been formed at a greater or less depth by currents depositing sediment under favorable conditions, subsequently brought above water by the waves. The formation once above the water, the wind blowing on the shore catches up the dry sand and carries it inland until, meeting some obstacles, it is dropped out of the reach This process is repeated for years of the tide. until the sand hills and dunes are formed. The changes about Sandy Hook have been The monarch of the sea has kept numerous. himself entertained in that locality. Near the head of the Horseshoe the shore is wearing away rapidly. Capt. J. W. Edwards makes the statement that the east shore of the Spermaceti

Cove Life-Saving Station has gone out 300 feet during the last thirty years. being a greater gain a mile southward and a less gain northward. The changes of the inlet have been many—too many, in fact, to enumerate. In the vicinity of the Seabright Life-Saving Station, No. 3, the shore has worn away upward of 300 feet in twenty years, and Seabright's shore is still being encroached upon. At Monmouth Station the wear is not so much, not being over ten feet a year.

Russell White thinks that the wear immediately north of Deal Lake has been about 1,000 feet in twenty years. From Elberon to Deal Beach the banks down to the level of the strand are covered with beach grass. There has been very little change at Asbury Park or Ocean

Grove. From Shark River to Spring Lake some trifling changes have been noticed. Wearing

Sea Girt is mostly in Winter, and during the Summer the beach regains all it previously lost.

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