

The main part of the gulf has a flat bottom, ranging in depth from about 90 to 180 fathoms. In its shoaler parts, at a depth of about 100 fathoms, there are indications of flat ridges, which attach themselves to rocks and ledges, and stretch in the direction of prevailing currents.

At a depth of 40 fathoms George's Bank is united with Nantucket Shoals, and this vast bank, which lies across the entrance to the gulf, is almost continuous to Sable Island Bank. The separating channel is only about 140 fathoms deep and 20 miles wide; at a depth of 500 fathoms every trace of it disappears.

The existence of elevated sea beaches, around the Gulf of Maine, goes to prove that, at a time subsequent to the glacial period, when the river valleys in New England were filled with water to their very tops, at the time of the "Champlain Period," the shores of the gulf had subsided, at Sankaty Head, 85 feet; at the coast of Maine, in some parts, 217 feet; about the Bay of Fundy, 350 to 400 feet (Dana's Manual of Geology). In consequence of this subsidence, the waters of the Saint Lawrence must have had free access to the Gulf of Maine, since the separating isthmus is only about 20 feet above high water. Great quantities of floating ice must have passed through the Bay of Fundy, and the steepness of the banks of the channels, on both sides of Grand Manan Island, bears evidence of powerful abrasion from the direction of the Bay of Fundy.

The effect of a boreal current upon the fauna and upon the climate of the Gulf of Maine is a very tempting subject for inquiry, but it is beyond the scope of the present article.

In Passamaquoddy Bay, about Eastport, we find very marked fiord indications running southeast, and again, others nearly as well developed, bearing west of south. According to the views heretofore expressed, the first are contemporary in formation with similar marks found along the whole coast, and belong to the earlier part of the glacial period, whilst the southwest marks belong to a later part and are of a more local character.

WASHINGTON, D. C., *December 26, 1882.*

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**108.—REPORT UPON HATCHING ONE MILLION WHITEFISH EGGS FROM THE GREAT LAKES AT ORLAND, ME., AND UPON PLANTING THE YOUNG IN EAGLE LAKE, MOUNT DESERT.**

**By H. H. BUCK.**

The eggs came on Monday, February 26, in one case, which was large and heavy and not provided with handles, so that it was rather weak when it arrived. The eggs were immediately taken out and found to be cool. The temperature of the moss was below 35°, but a small per-

centage had hatched and died, so that the package smelled "fishy." They were washed and put into water at 34°, and a few of them hatched within twenty-four hours.

I considered it desirable to keep them at the hatchery, if possible, until the ice should be out of Eagle Lake and the steamers running to Mount Desert. So I continued until April 19 the use of the coldest water at command, which was below 34°. Upon that day the eggs were about half hatched, and I took one 20-gallon can of young fry and went to Mount Desert to make arrangements for the reception of the whole number. I left the hatchery at 6 a. m. and arrived at the lake at 10 p. m. I found it beginning to thaw out around the shores, and turned in the fish all in good order.

From the 19th to the 26th of April the temperature of the water rose to 37° and the rest of the eggs hatched.

On the 26th, at 7 a. m., we started with all the fry in fourteen tin cans, and four small casks which had received two coats of shellac upon the inside and were provided with perforated covers. We arrived at the lake at 9 p. m. The fish in the cans were in good condition, but we lost all that were put in the casks. I had no way of ascertaining definitely any of the losses, but up to the time of transportation they were small. I judge that of the 1,000,000 which left Michigan something over 700,000 were turned into Eagle Lake in good condition.

The fry taken down upon the 19th were liberated upon the north side of the lake, about one-fourth of a mile westward from the outlet. Those liberated upon the 26th were taken up the eastern shore in boats as far as the ice permitted and scattered along shore as much as practicable, most of them from one-half to three-fourths of a mile from the outlet, and all upon rocky bottom.

PORTLAND, ME., *June 4, 1883.*

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**109.—EXPERIENCE OF A MENHADEN-OIL MANUFACTURER IN NORTHUMBERLAND COUNTY, VIRGINIA.**

**By WILLIAM R. POLK.**

[From a letter to Prof. S. F. Baird.]

For the past three years I have been engaged in fishing for menhaden to make into oil and guano or scrap. Last season I had at this place seven sailing gears, and one steamer fishing in the Chesapeake Bay and Atlantic Ocean.

I had my steamer, the J. W. French, seized by the authorities of Elizabeth City County, Virginia, while fishing last July in the Chesapeake, although it had a United States fishing license. It was a few miles inside the capes, but several miles south of that county, and in the waters of Princess Anne County. At the trial the judge confiscated steamer and nets, and I have appealed to the United States courts.

. FAIRPORT, VA., *October 12, 1882.*