

farmers in the Northwest would send their grain in any event by the Hudson Bay route, if it were open, knowing that they would have to keep it stored at Port Nelson for such a length of time. I am more convinced than ever that the navigation of the straits is not commercially practicable, and if these works at Port Nelson are to be completed, they will cost millions and will be always a regular sink hole for money. With all the expenditure I do not believe a harbour can be maintained there. I have had conversations with surveyors from Ontario who have been sent there for the purpose of laying out a townsite. At the very place they selected for the townsite, when there was a north wind and high tide, the whole place was under water. Consider the topography of the proposed terminus at Port Nelson. Both shores of the river are absolutely flat, and are covered with deep water when there is a high tide with a north wind. At such times the flood extends for miles and miles on both sides of the river. When the high tide recedes the channel reappears, and, as I have said, at low tide the bed of the sea is exposed for more than a mile and a quarter from the shore, and the only water you can find in that area is in the bed of the river where it is the intention to dredge a channel. If a terminal has to be made on Hudson Bay there is a more suitable place with a bold shore at Port Churchill.

Away back in the seventeenth century, the French people built at that place Fort St. Louis, the remains of which are still visible, 300 feet square. The walls are rock. They went to the expense of building that large fort, but remember, at that time, in order to get to the interior of the continent, there was no other way of travelling except by foot, and canoe, up the St. Lawrence and the Ottawa to lake Nipissing, and down French river to lake Huron and lake Superior. Then at the head of lake Superior they had to ascend the Kaministiquia river, and by a chain of lakes and rivers make their way to the prairie country. It was, therefore, comparatively easy to take the chances of navigating Hudson Straits, and that explains why the Hudson Bay Company for nearly 300 years have every year had one vessel sailing by that route. Those were wooden vessels, with very shallow draught, and built a sort of saucer-shape, so that when the ice closed in around the vessel, it would be bodily lifted out of the water and stay on the ice

until the pressure was removed, when it would settle down in the water again. Captain Wakeham went there, I believe, some fifteen or twenty years ago with the Neptune. He reported that near the end of July his vessel was surrounded by ice floes. When the ice commenced to crowd the vessel they endeavoured to reach soft ice. The ice would crowd them, and the ship would be bodily lifted out of the water. The vessel would remain on the ice for a day until the pressure was removed.

Hon. Mr. McSWEENEY—Was that in the straits or bay?

Hon. Mr. CASGRAIN—In the straits. I made another speech in this House in which I explained how the Neptune was built. It all appears in the Debates, if any one would care to look at it. The vessel had cross-beams inside, so that it could not possibly be crushed, and had to rise out of the water when the ice pressure became extreme. At Port Churchill, as I said, a port might be made at reasonable expense, perhaps. Now, why the eastern provinces should be called upon to pay the lion's share of this enterprise, which can be of no practical use to any one; I fail to see. It is all very well for those who have no information about it to say, "Oh, we will ship the grain out by the Hudson strait." They overlook the climatic conditions of that place. Although the latitude is not very high, still other factors govern climatic conditions. We know that places on the European side of the Atlantic enjoy a much higher temperature than places in the same latitude on the western side of the Atlantic. That is due to the Gulf stream. If I may be permitted to digress, I may inform the House that it is the Gulf stream that gives that higher temperature on the west coast of Europe. Now what causes the Gulf stream? It is caused by the constant action of the trade winds from west to east, carrying the warm currents from the coast of South America to the coast of Africa. Thence the stream runs northward along the coast of Africa, crosses the tropics, and flows a distance of something like 3,000 miles, getting thoroughly heated. Then it comes back into the gulf of Mexico, crossing the north coast of Brazil, Dutch Guiana, French Guiana, and Venezuela. It goes all around the coast of the gulf of Mexico, and flows around the most southern part of Florida and Cuba. The water is being pressed through there very strongly, and comes out into the Atlantic at a rate of about

Hon. Mr. CASGRAIN.