

SPECIAL COMMITTEE REPORT.

tides at Georges River to be as high as 60, and the neap tides 40 feet. I should think that on the northern coast of the straits the spring tides cannot be less than 40 feet and the neap tide about 30 feet. The difference in the tides on the northern and southern shores of the straits is in consequence of the rivers on the southern coast being larger, and consequently there is more back water. The ice that forms in the inlets and mouths of rivers rises and falls with each tide, but does not float out. That ice that forms on the exposed coast lines of the Strait is loosened and carried out by the outgoing tide. Sometimes it is jammed by the wind against the coast, and then may increase in thickness. Not more than four inches of ice would form in a night, but the thickness might be increased to perhaps two feet if detained on the coast for a few days. The ice in the bays and rivers forms to a depth of about four feet during the winter. Have not known ice more than four feet in thickness to form in those waters. In 1851 I was frozen in, in Prince Regent's Inlet, and had to saw my way out in July. The ice then was partly honey-combed, but was only four feet in thickness. This was in latitude 74, upwards of 14 degrees north of the Straits. The average thickness of ice coming through the Straits in June cannot therefore be greater than four feet. At that time it is more or less affected by the sun—"rotted," as it is generally called—and has attained a prismatic condition, which renders clearance much easier to a vessel pushing through. Have pushed my way through such ice in a sailing vessel with a fair wind, and think a steamer of suitable description with sufficient motive power should have no difficulty in pushing through such ice at any time. The fields of ice sometimes are miles in extent, but are usually much broken. There are always open channels round the larger fields through which a vessel can find its way. A steamer, therefore, would be able to thread its way round the larger fields and push through the smaller ones with little detention. It is most necessary that an exploratory survey should be made of the northern shores of the Straits, so as to indicate where sheltering harbors can be found. I cannot of my own knowledge state where such harbors lie. The southern shores of the Straits should be avoided as much as possible as it is usually the lee shore, and there are many rapid currents. In addition, it is the recognized experience of Arctic navigators that ice opens to the North and closes to the South. Until this fact was ascertained and recognized many vessels were lost, notably the "Victory" by Sir John Ross, the "Erebus" and "Terror," by Sir John Franklin, the "Fury," by Sir E. Parry, the "Advance," by Dr. Kane, and many whalers. I do not think it would be necessary to establish many lighthouse stations in the straits. Firstly, because there are few shoals. Secondly, the prevailing clear weather and absence of fogs. Thirdly, the short period of darkness during the season from June to November. At midsummer there is only twilight and a month after, the period of darkness is only about two hours. Vessels entering the