

LIGHTHOUSES.—There are sixty-seven lights under the supervision of this Agency of the Department, and these are under the immediate charge of fifty-nine lighthouse keepers, including the lightship on the Miramichi River, and fog-whistles.

FOG-WHISTLES.—There are eight fog-whistles in operation on the coast of this Province, six of which are in the Bay of Fundy, and two in the Gulf of St. Lawrence. One additional one at Head Harbour, which is not at present in operation, and another in course of erection at Letite Passage.

The number of keepers in charge of the respective lighthouses and fog-whistles with the names and post-office address of each, will be found in the Appendix to this Report.

GRINDSTONE ISLAND.

Lat. 45° 43' 13" N.; Long. 64° 37' 25" W.

On the 17th of July last I visited this Station, which is situated at the head of the Bay of Fundy. The result of my inspection, the particulars of which I forwarded to the Department at that time, will be found in my last Annual Report, under the above heading. At that time the building for the fog-trumpet and coal shed were completed for the erection of the machinery. This was subsequently erected by Mr. Crosby, and was put in operation in December, 1877, at which time I again visited that Station, and reported on the condition and character of the machinery and appurtenances, the fog-trumpet, and the mode of operation for giving the sounds. At that time I was apprehensive that there was a deficiency of boiler power to supply the amount of steam required, when I submitted the following report of its condition to the Department:—

November 24th, 1877.

SIR,—I beg to report that the fog-trumpet at Grindstone Island is now complete, and in working order. The machinery has been erected by Mr. Crosby, and is in excellent working condition. The trumpet itself is the same as that attached to machinery at Head Harbour Station, but the machinery and its mode of working are entirely different.

There is a large cylinder connected with the one at Grindstone Island, from which the air is forced by two air pumps connected with the engine, by which means a uniform pressure is maintained in the air cylinder, the valves being opened and regulated by the governor of the engine, so as to give the number of sounds required per minute, and their duration is regulated by a lever, so that the sounds are made with great regularity. Two, three or four sounds can be given during each minute. The number I prefer there is two blasts a minute. How far it can be heard against a strong wind I am unable to state, as I had no opportunity of testing it, but I would say under or about one mile. I heard it very distinctly about six miles under very favourable circumstances. The trumpet was turned with the wind, and in the direction in which I was placed, and I am satisfied that it could have been heard at that time some few miles further in the same direction. The machinery is strong and substantial, and can be relied upon to give regular and uniform work, provided the boiler is sufficient.

There is a good supply of water in the pond formed by Mr. Stephens in the swamp, and it is conveyed by pipes under ground to the tank in the engine house.

The quantity of coal consumed per 24 hours is about three barrels, but if the boiler was covered with canvas or felt, and a heater attached to the boiler, so as to have the water go into the boiler warm, it would be a great savings. Mr. Wm. M. Smith adds as follows: "from Mr. Crosby's description of the size of the boiler, and the quantity of steam required, I entirely concur as to the need of a heater and covering the boiler." I was at the time apprehensive that there might be a deficiency of