1903.

NEW ZEALAND.

MARINE DEPARTMENT.

(ANNUAL REPORT FOR 1902-3.)

Presented to both Houses of the General Assembly by Command of His Excellency.

MY LORD,— Marine Department, Wellington, 27th July, 1903.

I do myself the honour to transmit herewith, for Your Excellency's information, the report of the Marine Department of the colony for the financial year ended the 31st March last.

I have, &c.,
WM. HALL-JONES,
Minister of Marine.

His Excellency the Right Hon. the Earl of Ranfurly,
Governor of New Zealand.

SIR,— Marine Department, Wellington, 28th May, 1903.

I have the honour to make the following report on the work of this Department during the financial year ended the 31st March last.

Lighthouses.—All the lights have been maintained in an efficient manner. The rings of Moko Hinou light have been replaced by new ones. Owing to the old rings becoming worn a difficulty was experienced in getting the light to revolve properly, but since the new rings have been put in it has worked smoothly and has kept good time. New rollers are being procured from England for Akaroa Head and Puysegur Point Lighthouses, as the present rollers are becoming worn out. Sundry repairs and additions have been made to the buildings at some of the stations, and material has been obtained for a new dwellinghouse at Cape Maria Van Diemen, as one of the present houses is becoming unfit for habitation and is beyond repairs. The other houses at this station require repairs, which will be effected when the new house is erected. Many of the buildings at the lighthouses are getting old, and must be gradually renewed.

A new iron tower is being constructed for Cape Campbell, to replace the present wooden structure which was erected in 1870. So as to make the time during which the light will have to be extinguished as short as possible, a new lantern has been procured for erection in the new tower before the machine, apparatus, &c., are taken down for removal from the old tower. This will render it unnecessary for the light to be out more than two or three nights. The old lantern will be available for use in a new lighthouse at some other place. The wooden tower at Centre Island, which was erected in 1878, will shortly require repairs.

East Cape Lighthouse has been connected by cable with the telegraph system, and daily storm warnings are now exhibited at the station. Passing vessels are reported by telegraph.

The erection of the tower and other buildings at Kahurangi Point is approaching completion, and as soon as the tower is ready the erection of the lantern and apparatus will be proceeded with.

Plans and specifications have been prepared for the erection of a lighthouse and a keeper's dwelling, &c., near Patiti Point. This light will be of great service to vessels trading on that part of the coast. The light formerly on Somes Island will be used at this place. It will be a fixed white light, and on the night on which it is first exhibited the present light at Timaru will be changed to red, so that there may be no danger of one light being mistaken for the other.

Incandescent petroleum-burners vaporising oil under pressure are coming into use in some of the lighthouses in Europe. The Trinity House, which controls the English lighthouses, states that it has adopted the Matthew's incandescent burner on the Kitson system in two of its light-houses, and that it proposes to instal it as opportunities occur at other suitable stations. This burner consists of an oil-container, from which the oil is forced up by air-pressure to the vaporising-chamber above the burner. The gas formed in the vaporiser is conveyed to the burner, and on its way thereto is mixed with air and is ultimately directed on to the mantle surrounding the burner, which is thereby rendered incandescent. With a No. 7 Welsbach special mantle a working intensity of 1,100 candles is obtained, the consumption of oil being one pint per hour. The incandescent mantle being only 2 in. in diameter lessens the divergence and increases the intensity of beam as compared with existing oil-burners—*e.g.*, in substituting this burner for an ordinary oil-burner of 330-candle power at Lowestoft Lighthouse, the Trinity House found that the increase in the intensity of the beam was from 63,000 to 241,000 candles. After lighting up the burner requires very little attention from the keeper during the night. One of these burners has