APPENDIX E.

WEATHER REPORTING.

No. 1.

Commander EDWIN to the Hon. the COMMISSIONER of CUSTOMS.

SIR,— Wellington, 31st August, 1876.

In reporting on the progress of the experimental system of storm warnings, I have to state that satisfactory progress has been made with this work during the past year ending 30th June, and that the average of verified warnings is fully 66 per cent. Additional information relative to the increase and probable direction of the sea at bar harbours and exposed places is now frequently contained in these messages, and, whenever practicable, information as to the probable rising or flooding of rivers is given to those reporting stations where it would be of use.

The difficulties in the way of carrying out this work more thoroughly are still the same as those mentioned in my report of last year, and are still the same as those mentioned in my report for 1874–75, notably so in the case of the sixth instance shown therein.

The standard barometers, &c., recently ordered from Mr. L. Casella, have arrived in excellent condition. They will be forwarded to their destinations as soon as possible. When this material is available, the information for weather forecast will be greatly increased; and I trust that I may be permitted to call the attention of the Hon. the Commissioner to the necessity which exists for providing an assistant in this work. The arguments in favour of this are still identical with those mentioned in my last report.

The office accommodation at Westport and Oamaru will prevent the issue of standard instruments at those places for the present.

In conclusion, I have to acknowledge the prompt assistance I have at all times received from those associated with me in this work, and also from the Telegraph Department.

I have, &c.,
R. A. EDWIN,
Commander R.N.

The Hon. the Commissioner of Customs.

No. 2.

Mr. C. MELDRUM to Mr. W. SEED.

SIR,— Observatory, Mauritius, 10th December, 1875.

1. It gives me much pleasure to learn, from your letter of the 24th September, written at sea between Suez and Aden, that the Government of New Zealand have recently established a number of meteorological stations, with a view, amongst other objects, to the establishment eventually of a system of storm signals similar to that now used in Great Britain.

2. There can, I think, be no doubt that well-conducted observations in different parts of New Zealand, and discussions of the results, will be of great practical advantage to local agriculture and navigation, and at the same time very valuable as contributions towards the advancement of meteorology generally.

3. I presume that your central observatory will be supplied with a set of self-registering instruments.

4. As there is strong ground for believing that meteorology, terrestrial magnetism, and solar physics are intimately connected, you will perhaps consider it desirable to extend your operations in the course of time so as to embrace the two latter subjects. Melbourne and Mauritius have already magnetic observatories, and I understand that there will soon be one at the Cape of Good Hope. From continuous and intercomparable records of the variations of the meteorological and magnetical elements at different points of the earth's surface, in conjunction with observations of the solar spots and protuberances, important results might be expected.

5. Having no direct knowledge of the nature and course of New Zealand storms, I can only offer one or two suggestions which arise from what I know of the storms of the Indian Ocean.

6. Of these there are two classes, viz.—1st, cyclones or tropical hurricanes, which, originating between the N.W. monsoon and the S.E. trade wind, in 8° to 12° S. lat., generally travel for some days towards the W.S.W., and then curve to S. and S.E., seldom passing the parallel of 30° S.; and 2nd, extra tropical storms, between 30° and 50° S., which travel from westward to eastward. The latter partake of the nature of cyclones, but the wind in them does not blow in such complete spirals as in the former.

7. It is not probable that New Zealand has suffered, or ever will suffer much, from the tropical hurricanes (analogous to those of the Indian Ocean) which originate to the northward of it, between 8° and 12° S., and occasionally pass over the New Hebrides, Fiji, &c. I think that, as a rule, they seldom pass beyond the tropic. If by chance New Zealand should be visited by a tropical cyclone, I think it would probably come down from the north-westward.

8. The weather in New Zealand, however, is probably always more or less affected by severe cyclones, raging 1,000 miles or more to the northward of it; and it is very possible that their existence may be known with certainty from the state of the barometer, winds, and weather in New Zealand.

9. I should say that the storms of New Zealand generally belong to the second class—that is, that they are analogous to the storms that take place in the Indian Ocean, between 30° and 50° S., and to those of the temperate zone in the Northern Hemisphere. In the Indian Ocean, they seem to be invariably connected with two opposite currents of air—the one polar, the other equatorial. They travel, as I have said, from westward to eastward, and the equatorial current is in advance of the