

APPENDIX C.

REPORT ON RESULTS OF EXPERIMENTAL STORM WARNINGS, 1874-75.

No. 1.

Commander EDWIN to the Hon. the COMMISSIONER of CUSTOMS.

SIR,—

Wellington, 28th June, 1875.

In compliance with your instructions, I undertook in April, 1874, to endeavour to form some weather forecasts, with a view of ascertaining whether a system of storm signals could be initiated in this country with a fair prospect of success. In order that I might be afforded as many facilities as possible in this research, the Government made arrangements by which I have been placed in direct communication with the Harbour Masters at various parts of the colony, so that I can have the benefit of their professional experience without the loss of time which would have been the case had their communications been forwarded in the usual way.

On commencing my duties I found that the daily weather report was furnished from observations made with aneroid barometers; this rendered it necessary to order a supply of mercurial barometers from England, as the former class of instrument is liable to alter both the nature and amount of their errors, and any conclusion as to the point in question based upon reports derived from such information would be undoubtedly condemned as faulty. However, as it appeared very doubtful whether the proposed investigations would turn out satisfactorily, it was decided only to order instruments of an inexpensive kind.

These barometers arrived in Wellington in November last, and have been since distributed as in the annexed Table A. The whole number were packed by myself with every care, and I am fortunately able to state that they have suffered no injury in transit, notwithstanding the rough travelling they have had *en route* to such places as Taupo, Roxburgh, Naseby, &c. I must here remark that all these articles were found in good order on their arrival from England.

In my memorandum of 13th January, 1874, I stated my opinion that about a year after the time when the mercurial barometers were in position, I should be able to form an opinion as to the possibility of establishing a system of storm warnings, and it was decided that in the meantime I should endeavour to collect information, receive telegrams as to the state of the weather, and try to familiarize the observers with the use of a concise cypher code, which had been specially devised for use in this service by Mr. Lemon, General Manager of the Telegraph Department; and with reference to this code, it appears to me that the present is a fitting opportunity to acknowledge that it has proved very useful and easily understood.

At seaports where there were no Harbour Masters, and at inland places, you directed me to obtain the services of officers of the Telegraph Department. I have found these gentlemen most willing to render me every assistance, and very prompt in forwarding replies to my queries as to the state of the barometer, &c. Most of these stations were supplied already with aneroids, and having obtained an additional supply of these from Mr. Lemon, I was soon able to add some important places to the list of reports.

It now became necessary to find out whether the Harbour Masters had barometers, and I therefore wrote to them upon this matter, and at the same time let them know that it was proposed to send experimental storm warnings. In every instance I received expressions of readiness to commence duty and of willingness to give me the benefit of their experience; it therefore became evident that the subject had aroused the interest of professional seamen, and thus one of the principal elements of success became at once assured.

A code of instructions to weather reporting officers had been drawn up and distributed previously to commencing work, and in this the officers were directed to state what weather they expected when any considerable change became apparent, but I soon found that it was generally the opinion that the weather report was furnished too early in the day to enable them to make any good estimate of what was about to take place, and it was in some instances recommended that the reporting hour should be altered, but this I had to point out was impossible, as it would interfere with the public convenience; and as the main object was to obtain a comprehensive view of the weather at a certain time, the present arrangement was well suited for the purpose. Nevertheless, it soon became evident that from this very cause comparatively little additional matter would be received from Harbour Masters, and I was thus induced to turn my attention more particularly to the information given in the daily report, and, after a considerable period of careful investigation, I was enabled to detect and make allowance for many instrumental errors. During this time I had already been able to give some intimation of approaching bad weather, but I was now tempted to do so more frequently, and principally for this reason: that as the Harbour Masters were not able to give me much information, it became necessary for me to try and obtain it by experience, and I was emboldened to do this as the warnings were experimental and not made public by signal.

The warnings issued relative to some of the heavy gales of last winter were of such good result, that in September last I decided to try and anticipate the arrival of the mercurial barometers, and, by giving more frequent warnings of the possible approach of bad weather, endeavour to ascertain at an earlier period than at first seemed possible whether it would be advisable to establish the proposed storm-warning system. The result of this has been so fortunate, that I have been already able to