

## DOMINION OBSERVATORY.

Acting-Director: R. C. HAYES.

REPORT FOR THE YEAR ENDING 31st DECEMBER, 1938.

### BUILDINGS AND GROUNDS.

The Observatory buildings have been kept in good order. During the year two men from the Employment Bureau were engaged in renovating the interior of the Observatory building and generally improving the surroundings. The Wellington City Council has given the usual attention to the Observatory grounds.

### TIME SERVICE.

*Control of Clocks.*—During 1938 a total of 302 short-wave radio time signals were received from abroad for checking the Observatory clocks. Normally the clocks are checked every day, but frequent interruptions have continued to occur owing to disturbances in short-wave radio transmission. Also, since conditions are usually unfavourable for the reception of time signals until the late afternoon, there is difficulty in obtaining the daily checks during week-ends and holiday periods. These circumstances have resulted in a slight decrease in the accuracy of time signals during 1938 as compared with previous years. On 30th December a rather strong earthquake stopped No. 6 signal clock, and threw the Synchronome clock (No. 13) out of adjustment, but no interruptions in the time-signal service resulted.

A new chronograph by Thomas Mercer, London, was obtained during the year and installed in the transit room.

*Time Signals sent out.*—Time signals have been sent out as previously; except that on 1st June, 1938, the old form of signals was replaced by the six-dot signals for transmission through station 2YA. The Observatory provides the following time signals:—

(1) Time Signals by Radio (sent automatically by the Observatory signal clock)—

(a) Through Wellington Radio Station ZLW, daily at 10 h. 30 m. N.Z.M.T. (= 23 h. G.M.T.). In transmitting these time signals the call sign of the Observatory is ZMO.

The following table shows the order of accuracy of the ZLW signals during the year 1938:—

Number of times error did not exceed 0.25 sec.	..	..	336
Number of times error between 0.25 and 0.50 sec.	..	..	27
Number of times error between 0.50 and 1.00 sec.	..	..	2
Number of times error exceeded 1.00 sec.	..	..	0

Total number of signals sent out .. .. 365

The corrections to individual signals can be obtained on application to the Observatory.

There were no failures in the ZLW time signals during the year 1938.

(b) Through the National Broadcasting Service Station 2YA daily at 10 h. 23 m., 15 h. 28 m., and (except Sundays) at 19 h. 23 m. and 22 h. 23 m. New Zealand Civil time. The time signals are superimposed on the station programmes, and in the event of failure or suppression of the signals at scheduled times they are sent out thirty minutes later if circumstances permit.

(2) Time Signals by Telegraph (sent automatically by the Observatory signal clock)—

To the General Post and the Railways Department, Wellington, at 9 h. daily (except Sundays) for transmission to telegraph offices throughout New Zealand and railway-stations in the North Island.

(3) Time Signals by Telephone (non-automatic)—

Time signals are given by telephone in response to calls. If specially required, the time is given to the nearest second; otherwise to the nearest minute only. During 1938, time to the nearest second was given on fourteen occasions and to the nearest minute on eleven occasions.