

GEOPHYSICAL OBSERVATORY, CHRISTCHURCH

Director: Mr. J. W. BEAGLEY

As a result of the reorganization of the observatories of the Department, the Geophysical Observatory, Christchurch, now integrates the activities of the Apia Observatory and the Ionospheric Observatories at Lincoln, Rarotonga, and Campbell Island, as well as developing cosmic-ray research, undertaking statistical work on the magnetic records from Amberley, and maintaining climatological observations in Christchurch.

ACCOMMODATION, BUILDINGS, GROUNDS, ETC.

More commodious offices for the new branch were obtained in Christchurch.

The new Ionosphere Observatory at Rarotonga, Cook Islands, was completed early in the year, while the Lincoln Recorder building and the Apia Observatory buildings have been kept in good condition.

INSTRUMENTAL

Apia

Time Service. With the exception of the Knoblich chronometer, all clocks have given a satisfactory performance. The winding-chain on the former slipped and the chronometer was returned to New Zealand for repairs.

Terrestrial Magnetism. The standard cells of the magnetograph calibration apparatus were damaged in April, 1948. Two Daniel cells were constructed and used until the new Weston cells were received and installed in November. The scale values as determined with the locally made Daniels were much the same as those obtained with the more reliable Weston cells. Some trouble was experienced with the variometer recording clocks and it was necessary to run these with improvised escapements. Only a few days record were lost.

Seismology. The installation of a short-period Wood-Anderson seismograph in November greatly increased the value of Apia as a seismological recording-station. The Wiecherts recorded continuously, but their operation leaves much to be desired, and modern teleseismic instruments are urgently required.

Tide-gauge. A new float well was installed early in 1949, as the one in use was badly corroded. The Lands and Survey Department again checked the level of the staff zero with reference to the Mulinu'u Bench Mark. Three hydrometers were received in 1948 from the United States Coast and Geodetic Survey and these are to be used in measuring sea densities.

Ionosphere Recorders

Rarotonga.—A new manual recorder was installed early in 1948 by a member of the Dominion Physical Laboratory. The equipment has operated satisfactorily since it was installed. To decrease the possibility of losing records because of power-supply failures, an additional 5 kW. Hill Diesel generator was placed in operation, as well as another Pincor inverter set. In March, 1949, the aerial system was modified and the recorder overhauled.

Fiji. Consequent on a decision in the United Kingdom, the recording-station in Suva was closed down, and the equipment was returned to Christchurch.

Lincoln. Because of wear in movable parts, the J. 28 recorder at Lincoln has required an amount of maintenance which tended to increase throughout the year. Adjustments made in March, however, effected a considerable improvement in its operation. A 5 kW. Hill Diesel generator has been obtained and will be installed to act as a stand-by in the event of an A.C. power-supply failure.