

In 1948 two members of the Radio-Physics Laboratory of the Australian Council for Scientific and Industrial Research established an observing point at Leigh, North Auckland, to carry out investigations of "cosmic noise" phenomena. A member of the Geophysical Observatory staff assisted in this work and gained valuable experience.

Relief Post and Telegraph operators for the Campbell Islands were trained in ionospheric work, while the replacement ionosphere observers for Rarotonga and Campbell Island also received their basic training.

The following papers were prepared for the Seventh Pacific Science Congress :

ATKINSON, H. R. : "A Survey of Sub-Antarctic Aurora, 1941-46."

BEAGLEY, J. W. : "Activities of New Zealand Geophysical Observatories at Christchurch, Apia, and Campbell Island."

BEAGLEY, J. W., and BULLEN, J. M. : "Trends in Magnetic Declination at Apia and Christchurch."

BEAGLEY, J. W., and STANBURY, A. C. : "Preliminary Report on the Use of Photographic Emulsions for Recording Cosmic-ray Tracks at High Altitudes in New Zealand."

GARDNER, A. L. : "Some Observations on 'E' Region Effects."

GEOPHYSICAL OBSERVATORY, WELLINGTON

Director : Mr. W. M. JONES

This Observatory, constituted as from 14th December, 1948, is concerned mainly with physical oceanography and with geophysics in relation to defence science. It is temporarily accommodated in the Dominion Observatory building at Kelburn, and recruitment of staff and collection of equipment are in progress. Preliminary activities have included the following :

- (1) Preparation for the installation of a fixed wave-recording station. Recently developed Admiralty equipment will obtain records of waves from pressure-variations on the sea-bottom, and analyse the records into wave-frequency spectra. The site will be just south of Greymouth.
- (2) Development of portable units to be used for the recording of wave-systems as required at different parts of the coast-line under different weather conditions. One has been completed and a start made on the recording of waves at Island Bay, Wellington.
- (3) Studies of microseisms in their relation to weather and wave conditions. Periods of dominant microseisms recorded at the Seismological Observatory, Wellington, have been found to average half of those of "significant" waves at Island Bay observed visually. Work is proceeding on the development of microseismic activity associated with the progress of cyclonic storms and the passage through Wellington of cold fronts.
- (4) Work relating to some features of tides on the Wellington coast-line. It is found that considerable irregularities occur in the differences in times of high and low water as between Island Bay and Makara Beach. It is hoped later to relate observations of this type with measurements of current-systems in Cook Strait.
- (5) Orders have been placed for two sea-surface recording thermographs and a bathythermograph, with the object of obtaining more detailed data on temperature distributions and variations in the waters surrounding New Zealand.

Applications of the above and other aspects of physical oceanography are numerous. They may be applied, for example, to the problems of mariners, the Defence Forces, marine biologists and fishermen, meteorologists, harbour and coast-protection engineers, &c. For many such problems the fundamental data are at present lacking, and it will be the task of the Observatory, as staff and equipment permit, to supply them.