

Miscellaneous.—Reflex photographic copying and translation services have been initiated, and an extended service will be available in the coming year.

War History.—A start has been made on the war history of the Department and several sections are completed and in hand.

MAGNETIC OBSERVATORY, CHRISTCHURCH

Director : Mr. H. F. BAIRD

Terrestrial Magnetism.—Magnetographs at Amberley operated satisfactorily. To cope with increased magnetic disturbance usual with the approach of another sunspot maximum, some magnetographs during the year were suitably desensitized. Now, for the first time, we can record a very wide range in magnetic storms. Although more frequent this year, these storms have not been extremely large, but many disrupted radio and telegraphic communications, often during auroral displays. Collection of data on associated effects in magnetic activity, auroræ, cosmic radiation, and ionosphere conditions proceeded so as to help solve or bypass difficulties in means of communication. By concomitant exchange of such data, New Zealand made a reasonable contribution towards world-wide endeavours which aim to explain the, as yet, unknown origin of the earth's magnetism and some of its instabilities. In this same spirit Dr. H. H. Howe, of the United States Coast and Geodetic Survey, as a member of the Byrd Expedition, specially visited Amberley to compare the instruments at Amberley against those used by him earlier in the Antarctic. For this reason all four Byrd expeditions sent scientists to Amberley.

Magnetic Resurvey.—At the request of the Marine Department, magnetic stations were put in at Omāpere and Port Jackson in order to improve navigation charts. To check the rate of natural slow persistent changes, eight stations were reoccupied over the North Island, but only one in the South Island, at Henley. Plans for needed stations in the thermal area were discussed in the region with the Department's volcanologist.

Staff.—All members of the staff formerly with defence Forces have resumed duties and are again attending University. Set-backs due to loss last year of trained staff to Apia Observatory are being offset by recent transfer of cadets and a senior computer.

Recordings.—Volunteer observers in Canterbury have given very valuable reports on the increasing number of auroral displays ruling with the approaching sunspot maximum. The cosmic-ray meter operated satisfactorily when essential supplies were available either locally or from its owners in the United States of America. Climatological data typical of city household or factory sites were extended by daily observations throughout the year. The year 1946 proved the wettest one on our records, which began in 1902. Much use continues to be made by the public of climatological statistics. After forty-five years of continuity, earthquake-recording at Christchurch ceased temporarily on 18th March, 1947. The building over the recorders vitiated records, so it was decided to remove the seismographs to a disused military laboratory near Glentunnel. It was hoped that an inland site might be sufficiently free from natural ground unrest to prove suitable for more modern recorders, but already Glentunnel has proved very disappointing. Other areas, especially on hard rock, are available for testing before the instruments are again housed at Christchurch in a new cellar with no detrimental superstructure.

METEOROLOGICAL BRANCH

This Branch remained under the control of the Air Department during the year and its activities are reported in the annual report of that Department.

NUCLEAR PHYSICS SECTION

The reconnaissance survey of the Dominion's resources of uranium and thorium has proceeded to a point where an indication can be given of the possibilities of recovery should these minerals become of high commercial value. In the case of the recovery of tailings from certain dredges, it has been found that in order to effect complete