

Overseas Visits.—During the year the Director and Senior Entomologist made visits overseas. The former attended the Fourth Commonwealth Mycological Conference and spent some months visiting various research centres in Great Britain. The Senior Entomologist attended the Fifth Commonwealth Entomological Conference in London, the International Entomological Conference held at Stockholm, and visited various research centres in Great Britain, Holland, and Denmark. He returned via South Africa, where possibilities were investigated of bringing to New Zealand shipments of sweet oranges without the risk of introducing Mediterranean fruit-fly.

Publications.—Twenty-nine technical papers were prepared by the staff and submitted for publication. A revised "List of Plant Diseases in New Zealand," last published in 1939, is being prepared. A comprehensive bulletin covering tomato diseases and pests is in the hands of the printer.

SEISMOLOGICAL OBSERVATORY

Director: Mr. R. C. HAYES

SEISMOLOGY

Summary of Seismic Activity in New Zealand in 1948.—Most of the principal earthquakes in 1948 were in the South Island. The largest disturbance occurred on 23rd May in the Haunui-Waiapu region, when intensity M-M VIII was reached in the strongest shock. Some buildings in the epicentral region suffered structural damage, and minor activity continued at intervals for some months. Other strong shocks occurred on 15th January off the Manawatu coast, on 19th June off the west coast of the South Island, and in July in the Monowai region; the first two of these were widely felt. There was some concentration of minor activity in the Taupo region early in the year, and occasionally in the Wanganui region also. On 26th January a slight shock was felt at some places around the Kaipara Harbour. There were 127 earthquakes reported felt during the year, 81 being felt in the North Island, 53 in the South Island, and 7 in both Islands. The maximum intensities reported were M-M VI in the North Island and M-M VIII in the South Island.

Seismograph Stations.—All seismograph stations were operating continuously, but the teleseismic instruments at Christchurch were out of action early in the year owing to reconstruction of the recording apparatus. Mr. L. G. Penfold, an amateur seismologist in Dunedin, made available some of his records, which were of considerable assistance in the location of some of the South Island epicentres.

The Wenner seismograph was fitted with a new triggering mechanism by the Dominion Physical Laboratory. The starting pendulum is now operated by comparatively small earthquakes.

The Dominion Physical Laboratory constructed a set of Wood-Anderson seismographs for the establishment of four additional stations. It is hoped to have these instruments installed early in 1949.

Seismograph Timing.—Some tests were carried out by the Dominion Physical Laboratory with apparatus designed for the automatic recording of radio time signals at seismograph stations.

TIME SERVICE

Time Signals Sent Out.—The usual time service was maintained without interruption, and the accuracy in time keeping was considerably higher than in previous years. The error of the ZLW time signals was on most occasions less than 0.1 second; the maximum error was 0.22 second. Transmission of the signals failed completely on three occasions and partially on one occasion; all failures were due to causes outside the Observatory.

From 1st April special signals were sent out daily, through ZLW, from 6 p.m. to midnight in connection with longitude determinations being carried out by the Lands and Survey Department's Geodetic Survey. The errors of these signals were supplied to the Surveyor-General every week.