

The expedition found a large American expedition already at the island, and received great assistance and every courtesy from the Americans. The New Zealand expedition erected instruments and adjusted them in time for the eclipse. The programme was drawn up by the Permanent Eclipse Committee of the Royal Society and the Royal Astronomical Society and was as follows: (1) To photograph the solar corona in order to fill the gap that would otherwise exist in the series of corona photographs, especially as there would be no expedition from England to observe this eclipse; (2) to photograph the flash spectrum and the spectrum of the corona.

This programme was carried out satisfactorily, and four photographs of the corona, two of the flash spectrum, and four of the spectrum of the corona were obtained. All the photographs are excellent, and fully justify the action of the Society in sending the expedition to Niuafo'ou.

After the eclipse was over the Americans very generously transported the expedition back to Suva on the American warship, the "Tanager." From Suva the expedition returned to Auckland by R.M.S. "Niagara."

It was owing to the actions of our friends that the expedition was such a success. Every one with whom we came in contact helped us in every possible way, and we thank them heartily for their kindness.

Dr. L. J. Comrie has been asked to obtain a technical report on the corona photographs. Dr. S. A. Mitchell has been asked to report on the spectrum photographs.

At Wellington, where the eclipse was partial, twelve photographs were taken with the 9 in. telescope and a moving picture of the eclipse made through the 5 in. of the Wellington Philosophical Society.

Summer Time.

The Summer Time Act, 1929, provided for the time in New Zealand being half an hour in advance of New Zealand standard time for the period beginning at 2 a.m., New Zealand standard time, on Sunday, 12th October, 1930, and ending at 2 a.m., New Zealand standard time, on Sunday, 15th March, 1931.

SEISMOLOGY.

During the year 1930 the two Milne-Shaw seismographs have continued to record earthquakes. The Milne seismograph was removed to Arapuni Hydro-electric Works in July, and has since given some valuable information of earthquakes in the North Island. The records from the Milne twin-boom seismograph at Suva have been useful in supplementing the records at Wellington, and other stations.

During the year the following new seismological instruments were added to the Observatory equipment:—

- (1) A Galitzin-Wilip vertical seismograph with galvanometric and photographic recording was installed in October. A spare recorder was supplied with this seismograph.
- (2) An Imamura strong-motion seismograph with smoked paper recording was also installed in October.
- (3) A pair of Ishimoto silica clinographs were delivered in September. Unfortunately, the silica threads of one of the pendulums was found to be broken when unpacked. It is hoped that the broken thread may be repaired locally. The pendulum, which was intact, was set up in September for recording E.-W. tilt.
- (4) Two Wood-Anderson short-period seismographs with recorders arrived from California in December, and steps were immediately taken to have one of these instruments set up at the Observatory. Lack of space will prevent both the Wood-Anderson seismographs being installed in the Observatory cellar. A third Wood-Anderson instrument is now available and will be set up as soon as possible.

While at the solar eclipse on the Island of Niuafo'ou in October, Dr. T. A. Jaggard, of the Volcano Observatory, Hawaii, presented me with a local shock-recorder for use at the Observatory. The recorder was brought to Wellington when the Eclipse Expedition returned. Special thanks are due to Dr. Jaggard for his generous gift.

Besides the instrumental records, much valuable information has been obtained from reports of the effects of earthquakes felt in various parts of the Dominion. These reports are prepared and forwarded to the Observatory by officers of the Post and Telegraph Department, officers of the Marine Department, and also by a number of private observers. The information from these reports is used in the determination of earthquake epicentres, and also for the preparation of maps showing the distribution of seismic intensity.

In co-operation with other seismological stations, preliminary reports of the most important earthquakes have been issued each month. These reports facilitate the rapid determination of epicentres.

The complete seismological report up to 1929, September, was published during the year as Bulletins E. 21 and E. 22.

Earthquake reports were received from forty-seven observatories during the year 1930.

The addition of several new instruments has brought about a considerable increase in the seismological work of the Observatory.

Earthquakes in New Zealand, 1930.

Seismic activity was less severe in the year 1930 than it was in 1929, although the number of shocks experienced was greater in 1930. The total number of separate earthquakes reported for the whole of New Zealand during 1930 was 748, about 90 per cent. of which originated in the Takaka or Murchison districts of the South Island, where earthquakes have continued with varying intensity ever