

June was a cold month, but July was remarkably mild and sunny. In the latter month there were heavy floods in the Waikato and Waihou Rivers.

Most of the Dominion recorded heavy rain in August. A southerly gale on the 5th August did damage on the east coast of the North Island. At Wellington the gale was assisted by a high tide, and the Petone railway was undermined by breaking seas.

From the 7th September to the 10th October westerly weather prevailed, and gales were of almost daily occurrence. It was owing to them that such long delays were caused in the trans-Tasman flights. These westerly gales, also, were responsible for the transport of dust from Australia. A small tornado passed over the northern portion of Hokitika on the 18th September, and another wrecked a number of buildings at St. Heliers Bay, Auckland, on the 25th. Thunderstorms were of frequent occurrence, and were particularly violent during the dust storms.

Following a wet October, November was dry and mainly cool. A remarkably fine and summery spell occurred, however, between the 16th and the 25th.

Rainfall was very heavy in December, some districts experiencing the wettest month of that name for many years. Temperatures were, on the whole, mild. A very severe hailstorm caused serious damage to fruit crops along a strip of territory extending from Eskdale, through Greenmeadows, to Pakowhai, in the Napier district.

GEOLOGICAL SURVEY OFFICE.

TWENTY-THIRD ANNUAL REPORT (NEW SERIES).

DIRECTOR'S REPORT.

SUMMARY OF FIELD OPERATIONS.

FOR the twelve months ended 31st May, 1929, topographical and geological surveys were carried out in the following areas:—

- (1) Te Kuiti Subdivision, Auckland, by H. T. Ferrar, M.A., F.G.S., Senior Geologist, and N. H. Taylor, Assistant Geologist.
- (2) Rotorua-Taupo Subdivision, Auckland, by L. I. Grange, M.Sc., A.O.S.M., F.G.S., Geologist and Vulcanologist.
- (3) Tongariro Subdivision, Wellington, by L. I. Grange, M.Sc., A.O.S.M., F.G.S., Geologist and Vulcanologist, and J. A. Hurst, M.Sc., Assistant Geologist.
- (4) Wairoa Subdivision, Gisborne, by M. Ongley, M.A., B.Sc., Geologist.
- (5) Murchison Subdivision, Nelson, by H. E. Fyfe, B.Sc., A.O.S.M., Assistant Geologist.
- (6) Maruia Subdivision, Nelson, by H. E. Fyfe, B.Sc., A.O.S.M., Assistant Geologist.

The Director (Dr. J. Henderson) made official visits to Mahakipawa and Paraparaumu; to the Tokaanu district; to the Big River Mine, Reefton; to the State coal-mines near Greymouth; to Rewanui, near Hokitika; and to Arthur's Pass. On several occasions dam-sites in the Hutt basin were inspected. Mr. Grange and Mr. Hurst spent a day or two in collecting samples from the strong fumaroles of White Island. Dr. Marwick, Palaeontologist, visited Cheviot and Mount Somers, in Canterbury, and Takaka, the Sherry River, and Brightwater, in Nelson District, and obtained Tertiary fossils from all these localities.

PROGRESS OF AREAL SURVEY.

During the 1928-29 field season approximately 1,790 square miles was geologically surveyed in detail. Of this area about 329 square miles are in the Te Kuiti district, 480 square miles in the Rotorua-Taupo and Tongariro subdivisions, 656 square miles in the Wairoa Subdivision, and 325 square miles in the Maruia subdivision.

At the end of May, 1929, 27,303 square miles of New Zealand had been geologically examined in detail.

DARGAVILLE-RODNEY SUBDIVISION.

The numerous maps to accompany the Dargaville-Rodney Subdivision have been photolithographed and the colour stones prepared. Much of the manuscript is ready, and the bulletin should be issued in the coming year.

ROTORUA-TAUPU SUBDIVISION.

Field-work in the Rotorua-Taupo Subdivision is finished, except for part of Waitahanui Survey District in the south-west corner of the district. Most of the maps are now drawn; the draft of the report was begun last winter, and will probably be ready or nearly ready, before the next field season.

TONGARIRO SUBDIVISION.

Mr. Grange's summary report of his work in this subdivision, about half of which has now been examined in detail, is published on another page.

TE KUITI SUBDIVISION.

Good progress was made in the mapping of the Te Kuiti Subdivision, which consists of fairly easy pastoral country, for the most part occupied. Mr. Ferrar's account of the geology appears on another page of this report.

WAIROA SUBDIVISION.

The area Mr. Ongley examined during the last field season has a geological structure and stratigraphical succession similar to that of the Wairoa Subdivision, and to avoid much repetition the boundaries of this subdivision are extended to include the upper Wairoa basin and the headwaters of some adjacent streams.