

## GEOLOGICAL SURVEY BRANCH.

### TWENTY-SECOND ANNUAL REPORT (NEW SERIES).

#### DIRECTOR'S REPORT.

##### SUMMARY OF FIELD OPERATIONS.

DURING the field season of 1927-28 detailed topographical and geological surveys have been carried out in the following areas:—

- (1) Rotorua-Taupo Subdivision, Auckland, by L. I. Grange, M.Sc., A.O.S.M., F.G.S., Assistant Geologist and Vulcanologist;
- (2) Wairoa Subdivision, northern Hawke's Bay and southern Gisborne, by M. Ongley, M.A., B.Sc., Geologist;
- (3) Murchison Subdivision, Nelson, by H. E. Fyfe, B.Sc., A.O.S.M., Assistant Geologist.
- (4) St. Bathans Subdivision (in conjunction with soil survey of Central Otago), Otago, by H. T. Ferrar, M.A., F.G.S., Geologist.

I made brief visits to several points in North Auckland, Arapuni, Taupo, Wairoa, Takaka, and Murchison. Mr. L. I. Grange spent several days at the camp of gold-prospectors in the basin of the Waihaha, a large stream entering the western bay of Lake Taupo from the Hauhungaroa Range. He also visited White Island to collect samples from and obtain data concerning the fumaroles and hot springs. Dr. J. Marwick, Palaeontologist, visited northern Hawke's Bay, and collected fossils from different localities in the basins of the Mangapoike, Wairoa, Waikare-Taheke, Waiau, and Waikare rivers.

##### PROGRESS OF AREAL SURVEY.

During the twelve months ended 31st May, 1928, approximately 2,400 square miles was geologically surveyed in detail. Of this area, about 1,100 square miles lies between Rotorua and Lake Taupo, 600 square miles in Wairoa, 400 square miles in Nelson, and 300 square miles in Otago. In addition Mr. Ferrar covered in a soil survey 393 square miles of country, part of which had already been geologically mapped.

The present state of the detailed geological survey of New Zealand is shown in the following table.

	Square Miles.	Square Kilometres.
Surveys completed and maps published on the scale of one mile to an inch .. .. .	15,478	40,088
Surveys completed and maps published on the scale of two miles to an inch .. .. .	545	1,411
Field surveys completed, but maps not yet published (approximate) .. .. .	6,521	16,889
Surveys in progress—area actually surveyed (approximate)	2,969	7,690
Total area surveyed in detail .. .. .	25,513	66,078
Area of districts in which work is suspended (Heaphy and Mangakahia) .. .. .	413	1,063
Area resurveyed (Whatatutu and Waihi) .. .. .	352	911

##### DARGAVILLE-RODNEY SUBDIVISION.

The field-work of the Dargaville-Rodney Subdivision was completed in 1925. The maps are ready for the printer, the manuscript is now well in hand, and it is hoped to issue the bulletin in the coming year.

##### ROTORUA-TAUPO SUBDIVISION.

During the year Mr. Grange continued field-work in the Rotorua Subdivision and extended his explorations to Lake Taupo. He has examined most of the area to be included in the bulletin, and will write his report in whole or in part during the winter.

##### WAIAPU SUBDIVISION.

After long delay the report on the Waiapu Subdivision is about to be published.

##### WAIROA SUBDIVISION.

Mr. Ongley's summary report on his work in this subdivision during the 1927-28 field season appears on another page. The geologists employed by the Taranaki Oil Fields, Ltd., have examined parts of this area in great detail, and that company is now drilling two wells on very favourable structures in the eastern part of the subdivision.

##### MOTUEKA SUBDIVISION.

The numerous photo-litho drawings for the maps of the Motueka Subdivision are almost finished, and the manuscript will probably be completed this year.