

there have been prepared 246 certificates of title in lieu of Crown grants. As these certificates are in triplicate, the number of plans prepared was 738. I have also to report that the number of plans placed on ordinary certificates of title for the Land Transfer department was 1,540, representing 770 certificates in duplicate. During the year twenty plans have been examined prior to being deposited in the Land Transfer Office. These plans contained fifty-nine original sections, which were sub-divided into 394 allotments, embracing 26,833 acres. In connection with this I may state that sixty-five leases have also been examined, as well as forty-six applications to bring lands under the Act. Eight Land Transfer record maps have also been prepared, as well as a number of ordinary Crown grant record maps. In regard to the plans lithographed and prepared for lithographing, I have to state that ten drawings were prepared and printed locally, said drawings being of village settlements and sub-divisional surveys of this kind. Some extensive drawings were also prepared during the year for the purpose of being photo-lithographed in Wellington. The most important of these was a large, complete map of the counties of Southland and Wallace. This map, in addition to the natural features, showed all the artificial features, including formed roads, railways, stations, townships &c., up to date. It is a map which was much required, owing to the fact that the previous maps failed to show the counties as a whole. In addition to this map we have prepared for photo-lithographing in Wellington, a map of Centre Hill District, a map of Paterson District (Stewart Island), also a map of the Town of Invercargill. We have now in hand a map of Wairaki District, and hope shortly to have all the districts in Southland photo-lithographed. The utility of these maps for general government and office purposes is very great indeed. There is necessarily a large amount of promiscuous work done in the office, which, of course, it would be impossible to particularize, and I presume it is unnecessary to do so.

JOHN SPENCE, Chief Surveyor.

APPENDIX No. 2.

GEOGRAPHICAL SURVEYS.

THE TRIANGULATION OF THE KING COUNTRY.

Mr. District Surveyor LAWRENCE CUSSEN to the ASSISTANT SURVEYOR-GENERAL, Auckland.

THE area comprised is 440,000 acres, it lies between the Ongarue River and Lake Taupo, extends southwards to Ruapehu Mountain, and follows the surveyed boundary of the Taupo-nui-atia block to the Whanganui River. This district has been covered by major triangles of fifteen-mile sides, which are broken down by a secondary series, of six-mile sides, in preparation for the Native Lands Court surveys; the field-work is approaching completion, and will, I hope, be finished by the end of July. About three-fourths of the area is covered with heavy forest, containing totara, matai, rimu, and other useful timbers, a good deal of which will be accessible from the Main Trunk Railway, which traverses the centre of the district from Taumarunui to the Waimarino plains. The open land lies chiefly in narrow strips along the sides of the rivers and streams, and it is generally of a very poor character, the river valleys being commonly filled up with volcanic ashes and pumice to a great depth. Here and there, in the river valleys, the tufa beds are covered over with a coating of loam washed off the hill-sides, in these places the surface is fertile and often covered with clover and English grasses. The quality of the land varies a good deal throughout the district, much of it being of excellent quality and some of it poor, much broken and cut up by gullies and ravines. I think about 200,000 acres in the district will be found suitable for settlement. Along the valley of the Whakapapa River, on the edges of the bush around the Waimarino plains, on the slopes of the Taurewa Ranges, and in the undulating country in the neighbourhood of Maungaku, land of fairly good quality and suitable for agricultural purposes can be found in considerable areas. The geological character is clay marls and sandstones; in the Hauhungaroa range, which is the backbone of the country, the lower formation is slate, over which lie deep marl beds; on the crown of the ranges the slate is found cropping out; the land is of good quality but broken and rather difficult of access.

In my monthly report for April I informed you that on ascending Ruapehu in the early part of that month we found a crateral hollow on its summit containing warm, or probably boiling, water; as this matter may be of interest at the present time, it may be well to give a few details and a short description of the mountain, so far as I can from the few notes which I was able to make in the limited time I could devote to the subject, my object, of course, being to complete the trigonometrical observations at the trig. stations in time to descend to our camp before night. We ascended the mountain from the western side, following a long and tolerably regular ridge which runs down from the top of the cone to its base. The ascent was not very difficult, we accomplished it in four and a half hours from our camping ground, which was situated 5,000 feet above the sea-level; we had therefore 4,000 feet to ascend, nearly 3,000 feet of which was over frozen snow. As we ascended, on all sides of us were examples most various and instructive, of volcanic phenomena, and the forms and shapes assumed by lava in cooling. The most remarkable feature of the mountain is the crater lake on its summit. This lake is situated at the bottom of a funnel shaped crater, its steep sides being mantled with snow and ice. I had no time for measurements to ascertain the correct dimensions of the lake, and its peculiar surroundings made it difficult to estimate them with any degree of accuracy. The water seemed to me to occupy a circular basin about 500 feet in diameter; it is situated inside the two peaks Paritetaitonga and Ruapehu, which are about sixty chains apart on the southern portions of the mountain; the lake would be about 300 feet below the peaks and quite inaccessible, except with the aid of a long rope, and even then the descent over the icy masses would be attended with danger and difficulty. On first reaching the top of the peak I noticed small clouds of steam floating over the surface of the lake; on watching it more closely the water appeared now and then to assume a rotary movement, eddies and whirlpools seemed to pass through it from the centre to the sides, steam or vapour flashing up from the eddies.