

maps, which were rapidly "waxing old" and getting destroyed by use, (the progress of the survey in producing new maps is not, to my mind, of greater importance than the careful preservation of the old ones in their integrity), working up detached and scattered surveys into compiled block-maps, and constructing new-run maps, showing the new runs as leased. The latter are based on the minor triangulation surveys, the trig. stations and natural features of the country being all accurately shown. By this means not only will the new runs be recorded, but a very useful and interesting map of the country on a comprehensive scale will be gradually got together.

Crown Grants.—Of these, you will see from the attached tables, 299 have been prepared and sent from this office, representing an acreage of 51,923 acres; 305 are prepared and ready for issue; and 481 are partly finished. There were 100 licenses for deferred-payment sales prepared; also 274 mining and agricultural leases in duplicate got ready.

Lithographic Work.—In this branch of office work 17,000 copies of block-maps have been printed; traverse forms, 3,000; field sketch-sheets, 2,000; circulars, &c., 9,000; and total maps mounted, 594; all at a cost of £550.

W. ARTHUR,
Chief Surveyor.

SOUTHLAND.

AMOUNT, NATURE, AND COST OF WORK DONE.

Of rural and suburban surveys, 59,292 acres, comprising 492 sections, have been executed at an average cost of 1s. 4½d. per acre. Of town and village surveys, 376 allotments, embracing 381 acres, have been laid off at an average cost of 11s. 11½d. per allotment. Of topographical and trigonometrical survey, 115,200 acres have been surveyed and mapped at a cost of 1½d. per acre. In addition to these, some 15 mining-lease areas have been surveyed on Longwood Reefs at a nearly uniform cost of £8 14s. per application. In judging of the acreage rate for rural and suburban surveys, allowance must be made for the fact that the surveys were largely dispersed, and that some 50 sections, embracing 4,500 acres or thereby, were in bush. Of the town surveys, 150 sections, coming from 80 to 90 acres, were also in bush; and it will be observed that these sections were of unusual size, averaging over an acre each. The gold-mining applications were in densely-timbered broken country; survey fees being deposited for same by applicants.

An analysis of the acreage placed under the head of "rural and suburban surveys" shows the fact that 150 rural sections, covering nearly 27,000 acres, were laid off for purposes of deferred-payment application. This is exclusive of a large number of smaller sections that were surveyed during the year within new townships and village settlements. The amount of land surveyed subsequent to application, and for which fees were deposited, comprises 44 sections, covering an area of nearly 19,000 acres. The timbered areas surveyed for saw-mill purposes were 15, embracing 2,829 acres in all; the survey-fees in these cases being also deposited by applicants. What, therefore, between purchased land, saw-mill areas, mining-lease areas, and municipal endowments (the survey costs in all such cases being borne by the applicants or grantees), the department would be entitled to a credit of nearly £1,500, which amount would considerably diminish the total field cost during the year.

SECTIONAL SURVEYS.

It will thus be seen that considerable progress has been made during the year with the outstanding selections, as also with the subdivision of the deferred-payment blocks, many of which were eagerly inquired after for purposes of settlement. Owing to the absence of triangulation the applications in the Waiau Valley had for a long time remained unsurveyed; but this desideratum has now been supplied, and the greater bulk of the applications have since been surveyed and sent in. Though somewhat later than several of the provincial districts in using the steel band for chainage purposes, I am glad to state that it is now almost generally used; and as a consequence it may be safely asserted that the character of the field work has considerably improved in accuracy. The liability of the ordinary chain to stretch through both momentary tension and constant use, and the errors that are apt, if not bound, to arise in consequence, have long shown the necessity of a rigid measuring-band, which neither permanent use nor immediate tension could appreciably affect. Hitherto, even more than want of horizontality on the part of the chain, this has been the great source of error; and I would almost go the length of suggesting that the use of the steel band be made imperative on all officers of the staff.

TRIANGULATION.

The chief work under this head executed during the year has been the extension of minor triangulation up the Waiau Valley. Previous to its being done a blank untriangulated space extended from the Waiau District northward to Mount York, to which point a Ray-trace had been carried from Lake Wakatipu some years ago. From the base-line (remeasured by the surveyor, Mr. John Hay) of the previously-triangulated district of Waiau, a distance of some 30 miles intervenes between it and the extreme end of the Ray-trace, near Mount York. A verification base was, however, measured in the valley, some 7 miles south of Mount York; the result being a closure within 34 links in a distance of nearly 3 miles. The closure of Mr. Hay's triangulation with Mr. Anthony Wilson's Ray-trace—which latter was carried from a base-line many miles distant—is, on a long side of a triangle, within the surprising limit of three-tenths of a link. So far as the connection, either of the outstanding or prospective applications, is concerned, the triangulation referred to is, I think, the last that need be done, and for the future the officers will therefore be able exclusively to devote their attention to sectional surveys.

LAND TRANSFER WORK.

A large amount of work has necessarily been thrown upon this branch of the department by the transactions which take place under the Land Transfer Act. During the year 64 plans have been examined and passed. These plans have been found to cover 212 original Government sections, the number of new allotments into which the land has been subdivided being 3,223, and the total acreage embraced being 51,574 acres. At this rate of progress all the freehold land in the district would be