

The foregoing represents work actually completed and mapped; the total area operated on, other than triangulation or topographical survey, being 575,388 acres. In addition, a very large area of sectional survey of Crown lands was in the hands of the staff at the end of the year, a considerable portion of it drawing near completion, and surveys of Native lands were also in progress, but this is more fully dealt with elsewhere.

#### TRIANGULATION AND STANDARD SURVEYS.

In last year's report I referred to the great need of a major triangulation to control the very numerous independent groups of minor work, much of which, owing to the modern appliances and improved methods in measuring now in vogue, is of little use other than serving as connecting points, instead of providing checks on traverse work—its proper function—the latter being generally more dependable than the trig. values of early date.

It was hoped that the little required to complete the major triangulation over the two hundred miles from Cook Strait to New Plymouth—which only needs two or three more triangles to be observed and the bases measured to enable the computations to be proceeded with and the various groups of minor work reduced, revised, and brought into harmony—would have been carried out during the year, but it is to be regretted that circumstances have prevented its accomplishment.

Recognising the importance of having this work taken in hand as soon as possible, the necessity for which is repeatedly urged by the Chief Surveyors in their reports, I strongly recommend that special provision be made to proceed with it this coming year, as large areas from year to year are being covered by minor triangulation, in most instances, necessarily, but extensions of, and based on, old existing triangulation; consequently, each succeeding year the extent of it that will have to be reduced to order and thorough effectiveness is increased.

In closely-settled parts near centres of population the triangulation has, in consequence of obstructions to sight, such as buildings, plantations, &c., very largely lost its usefulness, and the standard traverse has to be substituted. This is especially the case in towns and suburbs, and standard surveys have been made and permanent reference marks laid down in a number of instances in past years; but this special work has, in a great degree, had to be discontinued on account of the urgent demand for settlement surveys.

Requests from Corporations and other local bodies for this class of survey have been very numerous of late, but it has been a matter of impossibility to comply with them.

During the year two surveyors were engaged on the standard survey of Auckland City, which will shortly be completed. In this instance the Municipality bore a very large share of the cost, as was also done in the case of the Wellington City standard survey; and some other smaller towns, similarly treated, also contributed to the expense. It is to be feared that, with so much settlement survey in hand and in prospect, very little of this work, important though it is, will be effected this year.

#### SETTLEMENT SURVEYS.

Sectional surveys of Crown lands have been completed and mapped of 279,547 acres, the average area of sections being 185 acres. The cost, 2s. 2d. an acre, is reasonable, considering that nearly the whole of it was in heavy forest country, and a considerable portion rough and outlying.

The Auckland District contributed 81,036 acres; Nelson, 42,736; Otago, Taranaki, and Hawke's Bay, about 36,000 each; and the other five districts the remainder. In addition, 44,297 acres in Nelson District and 25,688 in Auckland District were prepared for selection as "unsurveyed land," in the manner described in former reports.

This method of throwing open land for settlement has advantages under special circumstances, but more generally it has its disadvantages, and, apart from other reasons, it is questionable whether the extra cost of from 10 to 20 per cent. in surveys is warranted; so, the fact of the amount of land prepared for selection under this system being a yearly decreasing quantity—as instance, 244,093 acres in 1905-6, 200,515 acres in 1906-7, and 69,985 acres this year,—is not to be regretted.

Besides the 279,547 acres of sectional work returned as completed during the year, an area of no less than 617,933 acres was, at its close, in the hands of the field staff for sectionising. Of this, the field-work is finished of 113,000 acres, and plans well advanced; a further 115,500 acres of it is expected to be completed in two months' time, and an additional 101,500 acres in four months, thus reducing by more than one-half the large area of considerably over half a million acres now in the hands of the surveyors, and freeing a number of them to take up fresh work in the spring.