

Extensions of the triangulation have also been made in many other places, wherever the necessities of the settlement surveys have demanded it.

The triangulation of the colony has served the purpose for which it was initiated—*i.e.*, the control of the section surveys; but a time is approaching in which some of those parts executed near towns where property is becoming of great value will require revision. So long as the old Gunter's chain was used, the triangulation sufficed; but now that steel bands are universally used in measuring, producing very much more accurate work, it is occasionally found that the computation of the triangulation is not so exact as modern methods require. In connection with this work, and in lieu of it, in some parts, where buildings and plantations obscure the view, an extension of carefully measured standard lines along roads is required to furnish connections for the surveys executed under the Land Transfer Act. The processes should be extended gradually, a little being done each year.

#### RURAL AND SUBURBAN SECTION SURVEY.

A larger area of section work was turned out last year than in the previous one, the excess being about 30,000 acres, the total being 569,909 acres, in 1,541 sections, surveyed at a cost of 1.15s per acre, which does not differ materially from the cost of former years, and compares favourably with the cost of similar work in other countries. Indeed, this must be considered as a very moderate cost, when it is taken into consideration that a large part of the area surveyed is in rough forest country, that road-lines are carefully selected so as to be within regulation grades, and in the rougher country the boundaries are run along ridges and other suitable places for fencing-lines instead of in straight lines. In the more remote parts, the surveyors have to cut many miles of pack-track to get in their stores, equipment, &c., which often takes up a great deal of time and tends to increase the cost of survey per acre.

The largest continuous area surveyed last year was in Kawhia County, where over 100,000 acres were prepared for selection, by ten surveyors. Inspecting-Surveyor Cussen had charge under the Chief Surveyor of Auckland. Surveys are still progressing there; and, as the country is good, it is anticipated that a few years will see a large amount of settlement in this locality. In Hawke's Bay, a considerable area in the Ngapaeruru district has been surveyed by Messrs Brook and Stevenson, and will shortly be offered for selection. As to the rest of the section surveys in the colony, they do not demand special notice. They consisted generally of small-sized blocks surveyed to meet the demand as it arises. Several of the estates acquired under the Land for Settlements Acts have been prepared and offered for selection within the current year, whilst others are in course of survey.

Taken altogether, the sectional surveys of the past year do not present any very noticeable features, notwithstanding that they are of great importance to the people generally, in that they are the first step in the process of settling rural population on the lands. The experience acquired by the New Zealand survey staff in this particular branch, and the care and foresight exercised in providing systems of roads, boundaries, reserves, &c., necessary for the incoming settler, places them on a level with, if they do not exceed, any similar staff in the world. The care and judgment necessary to fully equip a country in this respect is rarely acknowledged by, or is unknown to, the general public. The patient endurance which enables our staff to bear with fortitude the hardships and solitude incident to the life in outlying countries where their duties call them are beyond all praise. Nearly the whole of the New Zealand survey staff have received their professional education in the department.

#### TOWNSHIP SURVEYS.

An area of 2,319 acres was subdivided into townships during the year, in which are comprised 1,590 sections. The positions of these towns are distributed from end to end of the colony, and included amongst them are several Native townships situated in Native districts. These have been laid out in accordance with the provisions of "The Native Townships Act, 1896."

#### NATIVE LAND COURT SURVEYS.

The area prepared for the operations of the Native Land Court during the past season was 163,857 acres, in 249 divisions, which represent, as a rule, the partitions ordered by the Court. Most of the surveys undertaken by the staff under this heading are the portions of blocks acquired by purchase by the Crown from the Native owners. During the year three surveyors have been engaged in defining boundaries for the Urewera Commissioners prior to the investigation of title. These latter are sketch surveys only. Under this heading may be included the survey of about 50,000 acres in Southland, intended for landless Natives; the survey has not yet been completed.

#### MINING SURVEYS.

This class of survey shows a larger number and a larger area than last year, which is partly accounted for by the activity in dredging matters during the past year. A total of 36,640 acres, in 668 sections, was surveyed altogether.

#### ROAD SURVEYS.

Outside the ordinary operations of road-surveying connected with the subdivision of land for settlement, there are other roads to be defined, such as cases where roads are taken under one or other of the Acts in force, the exercise of the rights reserved to the Governor under grants, &c. The mileage so surveyed last year amounted to 804, which is considerably in excess of the previous year. The average cost was £11.41, a very moderate rate considering the circumstances.