

	Area.	Cost per Acre.			Total Cost.		
		£	s.	d.	£	s.	d.
Minor triangulation ... ..	232,107 acres	0	0	1·8	1,808	5	11
Topographical surveys ... ..	99,850 "	0	0	0·67	279	16	1
Topographical surveys for selection "before survey" ...	163,230 "	0	0	2·8	1,902	10	6
Rural and suburban section survey (1,729 sections)	432,381 "	0	1	0·3	23,172	8	3
Town-section survey (256 sections) ... ..	384 "	1	1	11·1	280	13	10
Native Land Court surveys (110 blocks) ... ..	555,502 "	0	0	1·9	4,618	13	10
Mining surveys (98 sections) ... ..	2,727 "	0	8	1·2	1,104	9	2
Roads, &c., 333·28 miles, per mile ... ..	...	12	9	5	4,156	16	3
Miscellaneous work, detention, &c. ... ..	...	...	...	...	5,811	3	10
Total cost of field-work finished during the nine months ...					<u>£43,134 17 10</u>		

The average cost of the surveys varies very little from year to year. The most important and costly item in the expenditure of each year is that for rural and suburban section survey, which for last year cost 1s. 0·3d. per acre; for 1891, 1s. 0·22d.; for 1890, 1s. 3·7d.; and for 1889, 1s. 1·4d.; making an average cost for four years of 1s. 1·4d. To this should be added a small sum in some cases for preparatory surveys when the land is thrown open before survey, but this never exceeds 4d. per acre, and is generally considerably below it. Thus, for a sum of about 1s. 3d. per acre the colony gets the field-work of its rural lands surveyed and marked out ready for the occupation of the settlers, and plans prepared for the issue of titles; a cost which will compare favourably with similar operations elsewhere. The cost of the ruling processes of triangulation and topography, however, are not included herein, for such work serves other purposes as well. Under modern appliances, and the facilities now offered for moving about the country the cost of minor triangulation does not exceed 2d. per acre. Notwithstanding the fact that the returns are only for a period of nine months, the output of section-work is about 8,000 acres greater than for the twelve months preceding, an increase which is due to the greater number of surveyors employed.

#### TRIANGULATION AND TOPOGRAPHICAL SURVEYS.

This class of work, which is that on which all other is based, and which serves to keep everything in its proper place on the maps, and which—to use a homely simile—may be likened to the level and plumb-bob of the builder, shows a large decrease in area actually accomplished. This is due to the fact that the triangulation is generally well ahead of settlement operations, and it is only in small isolated districts that it is now necessary to carry on the work. The principal work of this nature done during the past period was in the districts around Catlin's River in Otago, where Messrs. Langmuir and Wilmot have done a considerable amount of work, rendered necessary by contemplated settlement surveys. In most cases a great deal of forest-clearing had to be done. The cost per acre, therefore, for the whole colony is remarkably small, being about 1½d. per acre.

I have again to express my regret that the large amount of topographical information produced by this class of survey, and now embodied in the manuscript maps of the department, is not published for general information. The urgent need of settlement work, combined with a reduced staff of draughtsmen, prevents the attention being given to this work that it deserves in the interest of the public generally. Such maps would prove of great value to all local bodies and the settlers generally, and their publication would bring the department more on a level with some of the Survey Departments in other parts of the world, where such maps have frequently been the end aimed at, by an expenditure compared with which that of New Zealand is a mere trifle.

#### SETTLEMENT SURVEYS.

It has been pointed out in previous reports that the settlement surveys, which have for object the definition of individual sections of land for selection by the settlers, since the Act of 1887 came into force have been divided into two branches. The first, which is largely topographical in its nature, serves to produce a plan of any particular block of land which it is proposed to throw open "before survey;" and, in addition, such a survey delineates the lines of roads all properly graded, the features of the country, streams, forests, &c., so completely that the selector finds little difficulty in locating the particular portion of land he desires to apply for. The second branch includes the survey of the sections, after they have been selected, within the blocks already submitted to the first process, and also comprehends all sections surveyed before offering to the public, besides all other classes of section-survey for whatever purpose, such as reserves, endowments, &c.

A total area of 163,230 acres was topographically surveyed last season, at a cost of 2·8d. per acre, the whole of which, however, has not been completely finished as to road-lines, &c. Wherever the character of the country is such that its value varies from place to place, which is the case in some districts, the preliminary processes included under this class of survey should always precede the opening of the land to free selection, otherwise there is a danger of the land being parted with for less than its value; whilst town-sites or other valuable rights may be disposed of, to the detriment of the public interests. The system of throwing open lands "before surveys" after this preliminary work has been done has been fairly successful, and has enabled the department to put lands into the market with less delay than under the system of complete survey before the lands are offered to the public. Whilst it has several advantages it has also its drawbacks, one of the principal of which is that the titles are often delayed for considerable periods after the lands have been selected.

Under the head of "Rural and Suburban," an area of 432,381 acres, in 1,729 sections, at a cost of 1s. 3d. per acre, was completed. This includes the secondary process described above. The permanent staff of the department has been largely augmented during the last year by the temporary employment of some of the authorised surveyors, who have turned out a large amount of good work under this particular heading.