

WELLINGTON.

Taking the surveys in the order in which they are arranged in the General Return, I have to remark in regard to :—

Minor Triangulation.—That the small area 4,540 acres, executed under this head, was effected by Messrs. Sicely and Tone, in detached pieces to govern their sectional surveys.

Topographical and Trigonometrical Survey.—With the exception of 5,700 acres returned by Mr. John Annabell, in the Waipakura Survey District, Messrs. Llewellyn Smith and G. A. Northcroft executed the triangulation, the greater part falling in the Kopuaranga and Puketoi districts. Mr. Annabell's work cost 4½d per acre, the cost is reasonable, taking into consideration the great number of stations which had to be cleared of forest in the small area, covered by his triangles. The total area triangulated sums 178,975 acres, and the average cost per acre amounts to 1½d, a most satisfactory result as the country operated upon, comprises forest clad hills and parts of the Tararua and Puketoi Ranges; some localities being so inaccessible that the surveyors had to cut tracks, and swag their equipment and supplies to distant points. Mr. Llewellyn Smith's triangulation was extended northward from his last season's work, and embraced the Forty-mile Bush country, surrounding Mount Bruce, extending westward to the ranges: this has enabled the sectional surveys in the vicinity of Mauriceville to be started, and carried on with all requisite checks. In Mr. Northcroft's Puketoi triangulation, errors of observation average 10", and the discrepancies in polygonal closures average 0·7 link per mile; his maps are not only neatly drawn, but they are thoroughly complete and practical, with a careful attention to details. During his explorations he discovered a favorable route for a road through the Puketoi Ranges, from Pahiatua towards Aohanga, which cannot fail to be of importance when settlement extends eastward of the lower Tiraumea valley. As the present seems to be a convenient time to review the results of the various triangulations, which have been executed in this district in recent years, I have the honor to request your attention to enclosure marked A, which sets forth some interesting particulars of comparisons made between the several triangulations and their bases.

Rural and Suburban Surveys.—With the exception of a few hundred acres, the settlement surveys comprised forest lands. The area returned for the year totals to 47,101 acres, and the cost 1s. 9½d. per acre, being an advance upon that of the preceding three years. This is due to the high rate of Messrs. Snowden and Foster's work, to the expense caused by the extra labor bestowed by the staff in exploring road routes and running trial lines, and the increased cost of traversing the intricate grades in back country. Mr. Snowden accounts for the costliness of his survey (8s. 2d. an acre,) to loss of time in surveying and readjusting boundaries of defective prior work. Mr. Foster points out that his block, which cost 4s. 8½d. per acre to sectionize, adjoins some unsatisfactory old work, and that he had to alter his road lines more than once to conform to the views of the engineer who has charge of the constructive works. Notwithstanding the large cost of these two blocks, and the additional expense of cutting more back lines than usual, the average cost of the whole is not excessive. Being fully sensible of the importance of attending to the inspection of the field operations, I devoted a large proportion of time during the past twelve months to this duty. This enabled me to examine and get a thorough knowledge of all the country comprised in the surveys, to carefully inspect the road lines laid off by the staff, to verify their work, to see that they were proceeding in a judicious and economical manner. I had also ample opportunities of conferring with them upon all points connected with their duties. Every member of the staff was visited, several of them twice, and many three times. In all twenty-two visits were made to the survey camps. Sixteen check diagrams and special reports were forwarded to you. In addition fourteen inspections of the work of nine private surveyors were effected, and twenty check diagrams submitted for your scrutiny. Mr. District Surveyor Dundas made five of the above inspections in a thorough and able manner. The examination of the surveys of Messrs. Dundas, Knowles, Annabell, and Tone afforded me much pleasure by reason of the practical and finished manner in which they were performed. Messrs. Struthers and Thompson also are fast becoming experienced in the various branches of their profession. I append a schedule (B.), prepared by Captain Hewitt, which shows the quality of the work executed during the year. This, I think, will be considered to reflect credit upon the staff. Mr. J. D. Climie's standard traverses, of which samples are given, are considered as accurate in their determinations as those by minor triangulation. The other samples of work have been taken from the tabulations of traverses executed in hilly forest country, where frequent checks were impossible, and where, from the shortness of the lines, steepness of the ground, and other causes, instrumental and linear errors are apt to accumulate to the detriment of the work. The return contains fair samples of general work performed. There were no new townships laid off in this district.

The Native Land Court and Land Purchase Surveys accomplished by the staff, included two blocks of 6,087 acres, at a cost of 9½d. an acre. The contract surveys defined were 16 sections, comprising 1,015 acres, at a cost of 1s. 8½d. an acre. In addition twenty plans were received from authorized surveyors, representing 10,898 acres, which were surveyed at the expense of the natives, and not paid for in the first instance by the Government. It will be noticed that the area surveyed falls far short of the returns of former years, the main causes being—(1) Less activity in the operations of the Land Purchase Department; and (2) The completion of arrears of defective surveys. The only cases in which undue delay now occurs in furnishing reliable plans of claim in this district, are those for which private surveyors or their employers are responsible.

Land Transfer Surveys.—The road traverses are permanently pegged and marked by iron tubes, and as the work is carefully done they serve as an excellent basis for the surveys of licensed Surveyors. In the towns progress has been made with the standard traverses. Those of Masterton, Bulls, and Wellington City being complete, those of Wanganui and Marton are in progress. A large expenditure has been incurred by the Survey Department upon these; in the case of the city it amounts to £1,495; it may be desirable, therefore, to give an account of the operations, and the advantages which they are expected to secure. The following is an outline of the manner in which the survey was conducted. (1.) A triangulation of the city and suburbs was effected,