

tricts become worked up, inevitably increases the cost, which has only been maintained at its present low average by the exceptionally favourable conditions under which several of the officers employed were enabled to complete large areas at a minimum rate.

*Triangulation.*—With the exception of a few square miles completed by Mr. Brodrick in order to connect former work with the standard traverse survey near Kaiapoi, no triangulation has been done during the past twelve months.

*Standard and Trig. Closures.*—These have given excellent results. Standard-stone No. 17, near Kaiapoi, was found by standard survey to be 102,978·5 links north and 32,988·8 links west of Mount Pleasant. The same point, determined by minor triangulation, is found to be 102,977·4 links north and 32,989·6 links west of the initial station, thus proving both surveys to have been executed with commendable accuracy. The standard survey was by Messrs. Adams and Maitland; the minor triangulation by Messrs. Welch, Broderick, and Pickett.

*Sectional Surveys.*—During the year eight staff surveyors and two temporary assistants have been steadily engaged in this work, and during a portion of the same period Mr. Houghton, now on leave owing to ill-health, Messrs McNicol and Seaton, transferred to the Otago District, and Mr. Watt, who has left the service, were similarly occupied. I am therefore able to report the survey and mapping of the following considerable areas, viz.: Of last year's arrears: 709 sections or reserves, containing 64,695 acres; of old provincial work, the resurvey of 255 sections, 26,406 acres; for sale under village-settlement conditions or on agricultural deferred-payments, 168 sections, 14,731 acres; pastoral country, the survey of thirteen blocks, 32,423 acres; town land, 206 sections, 56 acres: a total of 1,351 sections, containing 138,311 acres, at an average cost of 1s. 3½d. per acre. Some of this work, which was hampered with old surveys, even though done by Messrs. Welch and Hay, two of my most experienced surveyors, cost 3s. 3½d. and 2s. 10½d. per acre respectively, which excessive rates cannot be attributed to the officers, but are inseparable from free selection before survey, under which system surveyors lose more time in finding old survey marks and re-establishing lost survey lines than in different conditions would suffice to do the work twice. Per contra, Mr. Pickett and Mr. Watkins, when laying out sections in the Lake Coleridge District and McKenzie country, free from old survey complications, were able to complete large areas at 11½d. and 4d. per acre respectively. Mr. J. Adam has also surveyed a large acreage of pastoral country at a low rate.

*Old Provincial Surveys.*—During the period under notice steady progress has been made. In the Christchurch office 129 sections, containing 6,977 acres, have been checked and mapped. At the Timaru office Mr. Wright reports that 42 sections, aggregating 6,393 acres, were replotted and passed, in addition to 160 sections, equal to 19,862 acres, which were recalculated, and the areas duly reported to the Commissioner of Crown Lands. Under the heading, "Sectional Surveys," I have reported the resurvey of 255 sections, containing 26,406 acres, so that an aggregate of 426 sections, embracing 39,776 acres, have been added to the sectional work ready for the issue of titles. The late returns show that, with the exception of the old peninsula surveys—which must, I am afraid, wait yet another season to enable me to gather the information preliminarily to advising you what revisions may be necessary—there are but 163 sections, containing 12,807 acres, under this heading still to be dealt with. I therefore trust that another twelve months will clear away the bulk of the replotting and revision surveys, which have caused so much additional work, and to myself constant anxiety, since I took charge of this branch of your department.

*Inspection.*—Ten inspections only have been made, the diagrams of which were duly forwarded to you. The results are satisfactory to the office and to the surveyors whose work was tested. During the transit of Venus the Inspector, assisted by Mr. Munro, in charge of the Land Transfer Branch of this department, took observations from Mr. Townsend's observatory in Christchurch, the success of which was cordially acknowledged by Colonel Tupman, of the English expedition, as being of great value in corroborating his own observations at Burnham. A great deal of the Inspector's time has been taken up in the inspection of the road-formation contracts undertaken to open up the Crown lands on Teviotdale and at Waikari, and in preliminary inspection of the East Oxford to Upper Ashley and the Kaka Pass roads. For three months he was constantly engaged in making additions to the Christchurch standard survey, and for some time was occupied in taking levels in connection with the hot springs on Hanmer Plains. On the whole he has been very fully employed.

*Office Work.*—Mapping: Sixty-five large and ninety-six small plans, with traverse reductions, have been received from the field surveyors, showing a large amount of sectional work, a portion of which, together with work during the previous year, having been checked by the computers in the office, who passed seventy-seven large and 105 small plans. How well the traverse-reduction system works, in enabling surveyors to detect mistakes before sending in their plots, is evidenced by the fact that the officer in charge of the mapping-room reports that, of the great number passed, eleven only required explanation or additional information from the surveyors; other slips, generally in areas, were put right in the office. Ninety-six plans were recorded on the Crown-grant record-maps, and fifty-one on the block-sheets. Mr. Shanks reports that, owing to an insufficient number of draughtsmen, the compilation of new block-sheets is in a backward state, only eighteen having been constructed during the year. A large area of this work waits to be done. This, however, is not so urgent as the surveyors' plans, of which I am glad to report that, of 1,694 passed through the computer's hands, only thirty-five large and sixty-four small plans, including those received at the end of June, remain to be checked. I shall thus be able to get on with the district maps and plans for photo-lithography, which otherwise would be delayed.

*Reduction Office.*—New county maps of Geraldine and Akaroa have been completed, and mounted tracings of both are in hand for the head office, that of the Ashley County having been forwarded in the early part of the year. Three new district plans have been compiled, two traced for the public office, and two prepared for the photo-lithographer; seven more are in hand. Six of the district plans previously completed have had considerable additions made to them. The officer