

equally pressing work has frequently to be laid aside in order to satisfy the urgent requirements of the Land Transfer Department. During the year 26 deposited plans of 200 allotments have been checked and recorded and passed on to the District Land Registrar. Thirty-nine applications have been examined and compared and checked with original records; and 60 certificates of title in lieu of Crown grants, and 87 ordinary certificates, representing 340 marginal plans, prepared. Owing to the increased call upon the time of the office staff in the preparation and completion of the railway land plans, in meeting the increased work of the Land Transfer Department, and in preparation, examination, and checking plans and descriptions in duplicate of some 80 pastoral leases for the Crown Lands Department, I have been unable to make so much progress as I anticipated with the Crown grant and land transfer town record maps. I purpose, however, to proceed steadily in this direction as time can be spared from more pressing work. The amount received for lithos., searches, tracings, &c., during the year, is £22 1s.

Arrears and Proposed Operations, 1882-83.—This year commences with 320,700 acres of major and minor triangulation, with topography; field work completed, but not mapped, and arrears of 950 acres of section survey. Six hundred (600) acres of this amount is land to be taken as payment for public works let by the late Provincial Government, in lieu of money, and cannot be surveyed until selected; and a deposit paid to cover the cost of survey in terms of the agreement entered into at the time. The balance of 350 acres is in the hands of Mr. Goulter, who will this year as last year, go on with section surveys as required; and continue to revise and connect with trig points the detached blocks and sections in the bays of the Sounds. In this direction good progress is being made in the Pelorus and Kenepuru Sounds, but there is still a large amount to do in Queen Charlotte Sound of the same character, which I hope gradually to overtake. I recommend that Mr. Wilson extends major and mider triangulation southwards to close on the Amuri circuit, also to extend triangulation up the Awatere valley, from the Waihopai westwards, to close on the Nelson circuit. I am of opinion, on the grounds stated in my last year's report, that the extension southwards should be the first triangulation undertaken, unless it is your desire that the latter triangulation should be the next taken in hand.

HENRY G. CLARK,
Chief Surveyor.

WESTLAND.

During the year ending the 30th June, 1882, the following surveys have been completed:—

Major Triangulation.—Area completed, 39,994 acres, at a cost of 0.75d. per acre. This survey was executed by Mr. Roberts simultaneously with minor triangulation, and hence the low cost as compared with that of major triangulation in the preceding year, 1.16d. per acre. It covers the southern part of the Okarito Circuit, and part of Wills' Survey District, within the Jackson's Bay Circuit. The closing error of the triangles observed—24 in number—is 6.7 seconds.

Minor Triangulation, Topographical, and Trigonometrical Surveys.—Of minor triangulation proper (without topography), Mr. Roberts completed 46,081 acres in Okarito Circuit, and Mr. Price 18,405 in the Upper Arahura Valley, at the ordinary rates, while Mr. Lord is credited with 2,000 acres at the high cost of 3d. per acre. The latter work, however, is of an exceptional character, and comprises the fixing of a number of tubes within the Greymouth Municipality, in comparatively close proximity to each other, for the purpose of incorporating in the present system the old surveys of the town of Greymouth. The topographical and trigonometrical surveys consist of minor triangulation with topography, executed by Mr. Roberts, 128,000 acres, at 1.8d. per acre; and traverse circuit surveys in place of minor triangulation, carried out by Messrs. Murray, Lord, Smyth, and Price. The cost of the latter ranges, according to the varying difficulties in the several parts of the Westland District, from 1.3d. to 3.25d. per acre. Mr. Roberts's mean error of observation in 160 triangles of minor triangulation (with and without topography,) amounts to only 6.6 seconds. The closures of the traverse circuits are not so satisfactory, though they may well be allowed to pass, considering the rough and broken nature of the ground traversed. These closures stand as under:—

—	Number of Traverse Circuits.	Total Length (Miles).	Average Error Per Mile.
Murray	5	22	5.2
Lord	15	38	3.6
Smyth	7	26½	3.1
Price	11	37½	3.1

Rural and Suburban Section Surveys.—10,576 acres, at a cost of 2s. 2.2d. per acre; scattered over the whole district. In many instances the connection of a section with a trigonometrically fixed point has been more expensive than the survey of the section itself. The connection of the early surveys in the Grey District with standard surveys has proved more troublesome than anticipated. Simple transposition of the magnetic to true bearing I found would not meet the case, seeing the difference (1.03 inches) between the present standard chain and the one used in the provincial days of Canterbury and Westland, was considerable, and hence distances required rectification also. This and sundry other local conditions helped to complicate transposition of surveys to such an extent as to make it cheaper, more expeditious, and in every way more satisfactory to determine the true position of early surveys by "picking up" the section pegs on the ground.

Road, Railway, and Water-Race Surveys.—63½ miles, at a cost of £20 17s. 4d. per mile. About 22 miles of these have been graded ready for contract, i.e., pegged every chain and longitudinal and cross sections, bridge plans, &c., prepared. Some of the ground traversed has been very difficult, not