

*Mataura to Clutha.—Fifty miles.*

This survey is complete, and plans, sections, report, and estimate have been furnished by W. Brunton, Esq., C.E., by whom it was conducted.

The country between these points is of a much more difficult character to deal with than that between Invercargill and Mataura; but Mr. Brunton, by very careful exploration and selection, has succeeded in laying off a most excellent line of railway. His report shows that the steepest gradient is 1 in 92 and the sharpest curve 10 chains radius, and that the cost per mile, including the erection of a long bridge across the Molyneux, will not exceed £3,241 per mile, including rolling stock and stations. Applying to this estimate the same correction for heavier rails (40 lbs. for 36 lbs.) as in the Invercargill and Mataura estimate, the cost will only thus reach £3,500. This line passes through open country the whole of the way.

*Tokomairiro to Tuapeka.*

The survey of this branch line is now in progress, under Mr. Blair's directions, but no report or plan has yet been received.

## CANTERBURY.

*Waitaki to Timaru.—Thirty-seven and a half miles.*

Portions of this line are now being re-surveyed in order to connect the old survey line with the proposed new crossing of the Waitaki, near the telegraph line. The entrance into Timaru from the south will also be modified. Mr. Tancred will furnish plan and estimate, &c.

Two lines have been surveyed crossing the Rangitata River, the upper to join the bridge now in course of erection, and the lower in a more direct line, to avoid a long detour of eight miles by the bridge, which detour involves also a rise of about 350 feet, while the lower line will be practically level. The length of the former or longer survey is about thirty-five and three-quarter miles; the latter, about three miles.

*Timaru and Temuka.—Twelve miles.*

As before described, part of this line will shortly be under construction. Surveys and sections of that portion of the line crossing the Temuka River have been made. On and near the Railway Reserve they show that a very large amount of bridging will be required; but another crossing of the river some distance below has been suggested as much more practicable, and where the amount of bridging would be reduced to eight chains in place of thirty-eight.

From the Temuka northwards such portions of the main trunk line as required it have been surveyed, in order to complete the whole line through to the Rakaia,—about eighteen miles of new survey and fifty-four of old survey revised.

*Rolleston to Malvern Hills Coal Field.—Three lines, about fifty-four and a half miles in all.*

From this station on the Great Northern Railway three lines of survey have been undertaken, in order to ascertain which will best open up the coal field, and will connect it most economically with the main line of railway. The plans, &c., are now in course of preparation, and will be shortly completed.

*Oxford Tramway.—Two lines, about forty-one miles.*

For the purpose of determining the best line to connect the district of Oxford with the Great Northern Railway, two lines have been surveyed, of which plans and sections will be furnished. The upper will be connected in a nearly direct line with Rangiora; the other, having a more southerly direction, would join the railway at Kaiapoi, but not in a direct line. From such reports as have yet been received, it would appear that the northern line is shorter, and more advantageous generally, and that the country over which it passes is also more favourable for the construction of a railway.

*Rangiora to Sefton.—Two lines, about nineteen miles.*

From Rangiora northwards to Sefton two lines of railway have been surveyed, more particularly to determine at which point the Ashley River should be crossed. From these surveys careful estimates were made of the cost of the two lines. On these surveys and estimates I prepared and forwarded a special report, showing that the lower line, crossing the river at a point rather more than a mile above the present bridge, where a good site is to be found, could be constructed at a very much less expense than the upper line, which would cross at Ashley township. I personally examined the district very carefully before reporting on this subject.

*Northern Line extension to Waipara.—Twelve miles.*

This survey is also in progress, and plans, &c., will be prepared and forwarded. This is the limit of the surveys northwards in the Canterbury Province. Mr. Bray will furnish the required reports and estimates of the Canterbury lines not otherwise reported on