

By taking the traffic returns for the year, the loss of revenue which would have followed had the rates on the Christchurch line been reduced to the Dunedin standard can easily be calculated. It amounts to £15,486, which would be sufficient to raise the working expenses to a little over the total receipts; there would have been an actual loss on working of £312, besides the whole interest on the cost of the line.

The narrow-gauge line, on the other hand, is being worked for 52 per cent. of its receipts, and has paid a profit of 20 per cent. on the average cost of construction of railways in New Zealand.

The broad-gauge advocates, pleased with the rapid rate of travelling and the smoothness with which the heavy carriages run on the heavy rails, wish, without counting the cost, to have all the New Zealand railways constructed and worked in the same manner as the Christchurch and Lyttelton line; but if that line can only pay its working expenses by levying rates double those which are sufficient to allow the narrow gauge to pay a very handsome profit, in what position would the other New Zealand railways be, where the traffic is so much smaller, and where the rates could not be raised to the broad-gauge standard?

There could be only one result of such a policy, and that is the absolute ruin of the colony. If, however, there is a wish to adopt it, the narrow gauge can be worked at speeds of 30 or 35 miles an hour quite as cheaply or cheaper than the broad; for higher speeds the cost would probably be greater. Of course heavy engines and heavy stock would be required. To get the smooth running of a first-class line, heavy rails and ballast are necessary: this means wider banks and cuttings. Easy curves and gradients are of course required for high speeds, and would have to be provided; in short, the cost of construction would be not very much less than for a first-class broad-gauge line, or in difficult country probably three times the cost of the present lines.

If the system now adopted for working the narrow gauge is adhered to, the railways of New Zealand will in a few years earn a net income equal to the interest on their cost, even with the present scale of charges, which is considerably lower than that charged on the lines worked by the Provincial Governments of Canterbury and Otago; but if the thoughtless agitation for high speeds is given way to, the colony will have to pay—out of taxation—the whole interest on the Public Works Loan, and a still larger sum in addition to meet the loss in working.

## SURVEYS.

### SOUTH ISLAND.

Since my last report surveys and explorations have been made on the remaining links of the South Island railway system, as defined by the Hon. Sir Julius Vogel in his Financial Statement of last year. The present appropriations provide for a continuous trunk line from Kingston, on Lake Wakatipu, by way of Invercargill, Dunedin, and Christchurch, to near the northern boundary of Canterbury, the ultimate intention being to push it on northwards to Picton and Nelson, and at the same time to connect the West Coast with the main trunk line.

### NELSON TO THE GREY.

A survey was made last year from Nelson to Greymouth, but was not completed in time to lay the results before you in my annual report. The cost of this line would be £1,254,152. It passes through a wild country, the greater part of which is barren rock and mountain. There are one or two small valleys fit for settlement, but unless minerals are discovered in large quantities along the route of the railway there can never be any local traffic. The western terminus is rich in coal and gold, but coal would never bear the cost of transport by rail to Nelson, especially as the Grey and Buller Rivers are both large enough to admit colliers. The Buller in particular is a very fair tidal port, with a depth of 19 feet on the bar at high water, and could be made safer for shipping at a not unreasonable cost. The curves and gradients on the railway would be very severe, and the working expenses high.

A copy of Mr. Rochfort's report on this survey is attached.

### NELSON AND PICTON TO NORTH CANTERBURY.

A reconnaissance survey has also been made, by Mr. Foy, of the country between North Canterbury and Nelson and Picton. The most favourable lines, or rather the least unfavourable, are by way of Jollie's Pass, the Acheron River, and Top-house to Nelson; and by way of Jollie's Pass, the Acheron River, and the Wairau to Blenheim.

The former line appears from the report to be quite impracticable, and the latter nearly so, at any moderate cost; but I have not yet seen Mr. Foy since the completion of his survey, and will postpone any further remarks on his report until after his arrival in Wellington.

### WEST COAST TO CANTERBURY.

In my last report a description was given of the pass through the Southern Alps, at the head waters of the Rakaia. This pass is impracticable for a railway, or nearly so.

The next large river northwards is the Waimakariri; the pass at its head waters is well known, as the Christchurch and Hokitika Road passes over it. It is better than the Rakaia Pass, but still very unfavourable.

The two remaining rivers to the north, the Huranui and the Waiau-au, or Dillon, have been explored this season by Mr. Foy.

Of all the passes, that of the Hope Branch of the Waiau-au, is the least objectionable, and it has the advantage of making use of 40 miles of the trunk line between Canterbury and Nelson, or Picton.

After Mr. Foy's arrival in Wellington, I will report further on these lines.