

Dobson's line seems entitled to further consideration. I think the country should be thoroughly explored, so as to ascertain if there is a possibility of reducing the heavy work shown on his section.

The location of the main lines north and westwards is particularly difficult. The shape of the Island points to one main central line north and south, with branches to the harbours on each side; but the character of the country precludes the adoption of such a system. I believe that ultimately there will be a main line up each side, joining at Invercargill and Picton or Blenheim. The course of the western line would be from the termination of the present railway at Kingston, *viâ* Frankton, Cromwell, Lake Wanaka, and Haast Pass and River to the West Coast; thence along the coast to Greymouth; from Greymouth to Foxhill and Nelson by Mr. Rochfort's line and the present railway; and from thence *viâ* Havelock to the junction with the East Coast line at Picton or Blenheim. From the map it will be seen that the line just described goes almost in a direct line through the centre of the southern part of the Island, from the Bluff to Lake Wanaka. The Haast Pass over which it goes is the lowest in the range, being only about 1,700 feet above sea-level, against 3,000 the next lowest. The East Coast extension from Amberley to Picton will probably follow either Mr. Foy's or Mr. Dobson's line.

The line *viâ* Lake Wakatipu above described is unfavourably situated as regards the rest of the Island, and for a great part of the distance—*viz.*, from Kingston to Cromwell—the country is too rough for close settlement, consequently this section will only be made as a connection between the southern and midland railway systems, or to complete the through communication between Southland and the West Coast. If the Haast Pass is adopted as a crossing place in the main range, it can be best reached by the Otago Central (Strath Taieri) route now being surveyed, and ultimately by the Waitaki Valley and the Lindis Pass. The latter, a route to which much attention has not hitherto been given, is favourably situated as regards the centre of the Island, and it taps a considerable extent of good country in the Upper Waitaki and McKenzie Plains; but the engineering difficulties are somewhat formidable, it being necessary to cross a range 3,500 feet high before reaching the Clutha watershed. The Waitaki Valley and Lindis Pass line cannot of course be substituted for the Otago Central, as it leaves out the Strath Taieri, Maniototo, Ida Valley, and Manuherikia Plains, as well as the principal centres of mining in Otago. Its main object will be to give direct communication between the Oamaru and Timaru Districts, and the southern parts of the West Coast.

If one connection only is expected to be made between the East and West Coasts, probably the Waimakariri and Taipo route is the best; but if there is any chance of two, I should be inclined to recommend the Hope and Haast Pass routes, and the former, as offering readiest communication between the present centres of population, should be constructed first. I should, however, remind you that the line will be costly to make and maintain; it will have a tunnel of a mile in length at the summit and other heavy works, and the ruling gradient is about 1 in 25. The distance from Greymouth to Christchurch by the Hope Pass route is about 150 miles. It is just possible that it will pay to carry coals this distance by rail; but they cannot be taken much farther, and certainly will not bear the cost of transshipment at Lyttelton. Notwithstanding these objections, the importance of providing ready means of communication by land between the East and West Coast entitles the line to a favourable consideration.

With reference to the extension of the main line from Amberley to Picton, I do not think the work is urgently called for at present. There is comparatively little good country to open up, and the through passenger traffic which the railway is especially intended to accommodate will certainly not pay for its construction for many years to come.

CANTERBURY BRANCH RAILWAYS.

During the past year surveys have been made of the proposed Canterbury Branch Railways, the particulars being as follows:—

White Cliffs Branch to Rakaia Gorge.—Two lines have been surveyed, one leaving at the Coalgate, and the other at the Hawkins Station of the White Cliffs Branch; they converge at the Hororata Township. A reconnaissance survey is also being made of a third line, leaving the White Cliffs Branch near its terminus, and following the Wakaena Valley. I fear, however, that it will give too steep an approach to the Rakaia River bed. With the exception of the three miles next the Rakaia, the two former lines are of easy construction, being of much the same character as the railways already made on the Canterbury Plains; but the last three miles, getting from the terrace to the river bed, is rather rough. The works include 50 chains of tunnelling, a viaduct 500 feet long, and heavy earthworks. The line *viâ* Coalgate is 19½ miles, and its estimated cost £91,000; and the one *viâ* Hawkins is 22 miles long, and estimated cost £95,000. These figures do not include rolling stock and engineering.

Ashburton to Alford Forest and Mount Somers.—This line commences at the South Ashburton Station, and runs directly inland, keeping parallel with the Ashburton River about three miles off. At present the line is surveyed 20 miles to a point where it is proposed to branch off into two—one towards Mount Somers, and the other towards Alford Forest—to connect eventually with the Rakaia and White Cliffs Branch. The works on the Ashburton to Alford Forest and Mount Somers line are particularly light; the estimate, exclusive of rolling-stock, is £40,500.

Orari to Hilton viâ Geraldine.—The distance from Orari to Hilton is eight miles; and from Winchester, the nearest point on the main line, seven miles. These two routes have been surveyed, and the line continued up the Kakahu Valley, beyond Hilton, five miles. The lines are both easy, the estimate for the former being £45,500, and for the latter £41,000, exclusive of rolling-stock as above.

The alignment of the Orari-Hilton line is not good, and it runs very much into country already tapped by the Albury Branch; so I do not recommend its construction. I shall again refer to this subject further on.

Albury to Fairlie Creek.—This is simply an extension of the Albury Branch, 10 miles towards Burke's Pass. The works are somewhat heavy, but the gradients and curves are good. The estimate is £49,000 for formation, permanent way, and stations. A reconnaissance survey is in progress of the