

## No. 11.

Mr. LAHMAN to the Hon. W. GISBORNE.

SIR,—

County Chairman's Office, Hokitika, 5th August, 1871.

Referring to your circular No. 21, of 5th May, 1871, forwarding a copy of a letter from Mr. Vogel on the subject of railways in America, which I read with great interest, I have the honor to inform you that I directed the late County Engineer, Mr. O'Connor, to report upon it, and beg to forward herewith a copy of his report.

I have, &amp;c.,

H. H. LAHMAN,

Chairman of County Council.

The Hon. the Colonial Secretary, Wellington.

## Enclosure in No. 11.

Mr. O'CONNOR to Mr. LAHMAN.

*Re Mr. Vogel's Letter on American Railways.*

SIR,—

County Engineer's Office, Hokitika, 18th May, 1871.

I have the honor to acknowledge receipt of your letter directing me to note, from an engineering point of view, and as affecting the County of Westland, the subjects treated of in Mr. Vogel's paper on American railways.

The facts given respecting these railways come most opportunely, and supply just that confirmation and support which engineers here require, before initiating on railway lines the simple forms of construction which their Colonial experience has already led them to adopt on roads, &c.

I may perhaps be permitted to mention another fact opposed to the incurring of prospective expenditure, which has come to my knowledge during five years' experience on railway making in Ireland, namely, that on 150 miles of single line railway, with which I was connected, an expenditure averaging £300 per mile was incurred, solely with a view of providing for the second track.

The average date of this expenditure would be about the year 1859, and the lines remain single to the present time. It will thus be seen that £45,000 (a sum which corrected for the relative rates of wages, would be equivalent to at least £225,000 in New Zealand) has been sunk, for say twelve years to no purpose.

Although only able to speak with confidence about the 150 miles, or so stated on margin,\* I think it would be found that, for the last twelve years, upwards of 1,500 miles of railways have existed in Ireland under the conditions above described; and if we assume that a like prospective expenditure was incurred on each of them, it would appear that a sum of £450,000 (equivalent to £2,250,000 in New Zealand) has been sunk to provide for a contingency that has never arisen.

There is another question, however, which it is necessary to consider before condemning this expenditure, namely, the relative cost of the work thus done as a part of the original construction, and the same work if it had to be done now. In Britain the value of doing this work, if it had to be done now for the first time, including the cost of undoing some of the original structure, would be about one and a half what it has cost. The same estimate would probably hold for twelve years hence. Taking then the value of money at 5 per cent. compound interest, it would appear that even if the lines were doubled to-day, a loss of 30 per cent. of the invested capital has been entailed, while if postponed for twelve years more, the loss would reach 170 per cent.

If such conditions as these exist in Britain, it is patent that in New Zealand it would be still more disadvantageous to provide for merely problematical traffic. From the decreasing rate of wages in this country, the construction, if postponed for twelve years, would, even allowing for the extra work involved, be cheaper than if done at first; so that the accumulated interest on the money invested would be a dead loss; and if, as may very possibly be the case, the bridges are built of perishable materials, the money invested itself would probably be lost also.

A deduction might be drawn from these facts, regarding the mistakes of the Irish railway system, very nearly according with that drawn by Mr. Vogel from the existing condition of American railways, and given by him in Rule 1; namely, "That railway lines shall be constructed on precisely that scale which is suited to meet the probable present traffic demands of the parts of the country in which the lines are to be constructed."

The principle, however, involved in this rule is so broad, that it might be held to apply not only to railways, but to all the public works of a young Colony. In fact it presents a question of financial policy rather than any technical or local one. Viewing it as relating to railways alone, I think one engineering element might be introduced into it—namely, that while practising rigid economy in the superstructure (rails, gauge, bridges, &c.), the lines should be constructed with such curves and gradients as would admit of their being afterwards developed into really good railways.

The second rule given, "That the people of the Colony will be sufficiently intelligent to protect themselves against accidents, without continuous fencing of the lines or the necessity of costly crossings where the street lines or roads are intersected," is less general than the first, and may be discussed locally, socially, and geographically. Perhaps the best way of comprehending its bearings is to trace it to its source, given in the second page of Mr. Vogel's letter, nineteenth and following lines.

It would appear from this, that railways in America are popular, while, from the different conditions under which they exist in Britain, we may fairly assume that there they are comparatively unpopular. I think the causes of these existing conditions lie deeper than the mere fancy of the people.

Without pretending to understand the social and geographical condition of the American continent, something like a right understanding of the reason why railways are popular there can, I think, be

\* Waterford to Tipperary, 55 miles; Limerick to Castleconnell, 7 miles; Castleconnell to Roscrea, 37 miles; Waterford to Kilkenny, 32 miles; Baganalstown to Ballywilliam, 18 miles; total, 149 miles.