

disasters, and it is to be hoped that the Committee will ponder well before it be led to adopt any less or any other gauge than the one in England—namely, 4 feet 8½ inches.

And last, not least, the important fact that capitalists in England who look shrewdly at these things would be slow to part with a penny on a 3 feet gauge.

To the Committee on Railway Gauge.

FRANCIS STEVENS, Sen.

The Committee adjourned till 11 a.m. to-morrow.

MONDAY, 23RD SEPTEMBER, 1867.

PRESENT :

Mr. Tancred.
Mr. McNeill.

Hon. J. C. Richmond.
Hon. J. Hall.

Mr. Burns in the Chair.

Minutes of the previous meeting read and confirmed.

Answers from Dr. Hector to questions submitted to him were laid before the Committee and read.

A letter from Mr. R. M. Marchant, C.E., was laid before the Committee and read.

Copy of Mr. R. M. MARCHANT'S, C.E., Letter.

SIR,—

Wellington, 19th September, 1867.

I have the honor of supplying the following answers to the questions submitted for my reply :—
I am a member of the Institute of Civil Engineers since 1849, in which year I was elected an Associate. As in the Colonies it is not unusual for assurance to take precedence of ordinary professional reserve, it appears desirable that I should state, in answer to this question, both what my experience is and how it has been obtained, for the question under consideration may involve important results, and the value of any evidence depends on the experience of the witness, and the character of that experience. From 1838 to 1846 I was engaged as Assistant Engineer to Mr. Brunel on the Great Western Railway, the Bristol and Exeter Railway, and the South Devon Railway, in the construction of several tunnels, and other works. From 1846 to 1849 I was engaged as Resident Engineer for the most important works on the Oxford, Worcester, and Wolverhampton Railways. From 1849 to 1855 I became contractor for several important public works—railway and hydraulic. From 1855 to 1860 I was engaged as Superintending Engineer for the construction of the Don Pedro Second Railway, and afterwards as Engineer-in-Chief for the Tigüea Railway and other works in Brazil. From 1860 to 1866 I concluded extensive surveys in Victoria, and subsequently became Railway Engineer in Southland, where I continued until the expiry of my engagement on my notice to that effect on the approximate completion of the railway. I hold letters from Mr. Brunel himself, proving his appreciation of my professional capacity, and one in which he recommends me as qualified by professional capacity and personal integrity for the important appointment of Engineer-in-Chief to the East London Water Works Company, also documents and letters from other gentlemen to the time of my arrival in the Australian Colonies. I am acquainted with the character of the Middle Island generally, and in places particularly. I am of opinion that whilst it is desirable to provide by legislation for a future connected system of railway communication, no hindrance should be thrown in the way of private enterprise, or the execution of works in what may be the only feasible manner at the time of their organization. That the prudent course would be to decide on what the future Colonial gauge should be, and to require the provision of sufficient width of land, and the construction of bridges and culverts, &c., of such dimensions as should not interfere with the adoption of the gauge determined on at any future period. Such provision could be made at very little additional expense. I would recommend the adoption of the 4 feet 8½ inch gauge, which works satisfactorily at home for any speed not exceeding forty miles an hour, and may therefore be expected to carry any traffic satisfactorily here, and to allow such curves as will necessarily be in occasional use to be more easily worked. The advantage of a broader gauge, as particularly exhibited by the 7 feet 1 inch gauge of the Great Western Railway system in England, is not confined to speed, except in cases where the narrow gauge will conveniently carry the traffic. It will both allow of greater speed and of heavier traffic, but the necessity for either must exist to render the additional expense desirable. 220,000 or thereabouts. I think such a gauge would carry any traffic existing in New Zealand, or that is likely to exist in any locality for the next ten years. Many elements affect the answer to this query, the most important being the gradients that would be accessible. Speed must be one element in the consideration, and I assume the rate maintained to be that of fifteen miles an hour. With ordinary gradients and appropriate arrangements such a railway could be constructed to convey 200 tons each way daily, and with a double line of way throughout, the quantity so estimated could be at least trebled. Every sixty passengers would occupy space necessitating the deduction of twenty tons from the tonnage so estimated. This would appear to meet the requirements of a population of at least 20,000 at each extremity of such a railway. I am acquainted generally with considerable portions, and from personal observations, with particular localities. I am generally acquainted with the results, but have never constructed a railway to this gauge. I am fully acquainted with the working of them. If tributary lines had a gauge of 3 feet 6 inches, a third rail could be added to railway of 4 feet 8½ inches gauge to convey carriages of tributary lines. This arrangement is common in the south of England. This could be done, but would, as a rule, be objectionable. I think that any legislation which goes further than to provide that works should be so constructed as to be rendered applicable at any time for the reception of any particular gauge determined on, would be detrimental to local enterprise. I have such knowledge to a very considerable extent.

The Chairman of the Railway Gauge Committee.

R. M. MARCHANT.

Copy of written answers from Dr. Hector to questions submitted to him :—

1. Do you think that the topographical character of the Middle Island is such as to allow of one