

178. Do you think it would be profitable for the settlers on the eastern side of the range to send their traffic by this line as against sending it by sea?—No, I do not.

179. You think the people at Ruakura and Waipu would find it a cheaper outlet for their produce and their stock to ship it to Auckland rather than convey it by this railway, even if the eastern route were followed?—I think it would probably go by sea.

180. With regard to ballast, do you think it would be cheaper to get ballast at 105 miles than to have a branch line at Pukekaroro and get ballast from there, taking the cost of both ballast-tip lines into consideration?—I think it would be better to get the ballast from 105 miles. It would be a cheaper line to make, and probably a cheaper place to quarry at.

181. Do you know what the Department is paying for ballast at Mount Albert?—Five shillings a cubic yard, delivered at Wellsford. We take it over at Wellsford, and run it ourselves from there.

182. Suppose you had a branch line into Pukekaroro, and quarried the ballast, broke it, and then ran it down to the main line, how much a yard would that cost?—It would cost as much, I think; besides, there would be the cost of making the line.

183. You have to consider that, and also that you might have to pay royalty for your ballast. Do you think it would be any advantage to the Government to put a branch line into Pukekaroro at all?—I do not think it is advisable to get ballast at Pukekaroro for the western route.

184. How many years' experience have you had as a railway engineer in the public service of New Zealand?—Thirty-four.

185. You have been mainly connected with railway-construction at all periods?—I have done a great deal of it.

186. In all parts of New Zealand?—Yes.

187. Though you have been only two years and a half in Auckland, I suppose you know every detail in connection with both these routes and this work?—I consider I am closely familiar with it.

188. Do you think you are more familiar with it than any other man, inside of the public service, or outside of it?—Perhaps I am.

189. Do you know Mr. James Stewart, civil engineer, of Auckland?—Yes.

190. Did he have any details or data from the Public Works Department from which he could form any close estimate of this work on either route?—No, he had no details. He was not in a position to form an estimate.

191. Nor could any other engineer in New Zealand, without those details which are in the office of the Public Works Department, form even an approximate estimate?—No, unless he had the plans.

192. You are aware that, as far as Auckland is concerned, Mr. Stewart did not have access to those plans?—He had no access to the plans.

193. *Mr. Buchanan.*] Where this big bridge is proposed to be built on the western route—what is the rate of the current there? Being tidal water, is there not a heavy current?—It is not a swift current.

194. You would have no hesitation in putting an embankment instead of an open bridge?—You would be perfectly secure in doing so.

195. *The Chairman.*] Can you give us a lump-sum estimate of what you think that twenty miles of line to McCarroll's Gap would cost on the western route?—No, I am not prepared to give the Committee a lump-sum estimate—unless you give me time to do so.

196. Have you examined the eastern route?—Yes.

197. You could not give an estimate for that?—I am exactly in the same position with regard to the eastern route as the western. I have a very fair idea of what the routes would cost mile by mile, but before making a lump-sum estimate I should require time to go into the matter.

198. At any rate, you think the eastern route would cost as much as the western?—Yes.

199. *Hon. R. McKenzie.*] Did you make out the table of rises and falls that was submitted to the Engineer-in-Chief in connection with this matter?—I have not made out a table of rises and falls.

200. It was made out in your office, was it not?—No, we made out none in my office.

201. Do you know anything about the rises and falls on this route?—Yes, I have an idea of what they are.

202. On which line are the rises and falls more favourable?—On the western route.

203. Would the difference in rises and falls make a very material difference in the cost of working the line, or drawing loads over it?—It would make some difference in the traction.

204. And also in the cost of working the line?—Quite so.

205. The difference in rises and falls is materially in favour of the western route in your opinion, is it not?—It is materially in favour of the western route.

206. As to curves, are the curves adopted on each route the same?—They are about the same.

207. There are no worse curves on the western route than on the eastern?—No.

208. Do you know which line has the more level running of more easy grades?—The easier running is on the western route.

209. Taking grades and levels, do you know if there is a material difference in that respect in favour of the western route?—There must be a material difference.

210. You think that in maximum rises and falls, and also in grades, the western route is better than the eastern?—Both are in favour of the western route.

211. Something was said about station-yard sites having been fixed on the eastern route before this deviation was started. Did you ever receive authority to fix any station-sites on the eastern route—that is, beyond Ross's Hill?—Yes, I received authority to fix one at Kaiwaka; and an application for a station was considered up near Pukekaroro, but the site was not definitely fixed.

212. Pukekaroro, anyhow, was on a branch line, even if the eastern route were adopted—I mean, where the quarry is?—Yes, the quarry was on a branch line.