

of the Great Western Railway Company. Experiments were being made with compound engines and superheated steam for simple engines. The company had a very fine testing plant, the only one of its kind in Great Britain. The shops are very extensive and give employment to a large staff. Modern machinery has largely displaced old machines and electric driving is largely used.

My next trip was to Coventry, where I inspected Hubert and Co.'s tool-shops. The firm are specialists for lathes and milling-machines. The works employ one thousand three hundred men, and the system of working is excellent. Their lathes have been in use in the New Zealand shops for some short time and have largely assisted in the building of rolling-stock. The Coventry shops are run on piecework exclusively.

Leeds claimed my attention for a short time, during which I went over the works of the Leeds Forge Company, and Taylor Bros.' steel and iron works. At the former, large orders for high-capacity rolling-stock were in hand. Pressed steel is the company's speciality, and their hydraulic-press installation is the finest in Great Britain. Taylors Bros.' works were not in full swing, the heat being too great to work—July. Large orders for railway material were being executed, tires, axles, and the celebrated Yorkshire iron. The firm also manufacture gun-tubes for the British Government.

Sheffield was visited, and the Hadfield steel-works, Firth's steel-works, and Vickers, Sons, and Maxim's works were duly inspected. Steel-work, points and crossings, &c., largely occupy the Hadfield Company's works. I was specially interested in their shop arrangements but did not see much to copy. Firth's works are very extensive and the company go in for a great variety of work. Their testing plant is a good one. Nickel steel was being largely produced. Vickers, Sons, and Maxim is the firm who have supplied the New Zealand railways with tires and axles for many years. The company are large manufacturers of tires, axles, and steel-works generally as used on railways; they are also gun-manufacturers, and builders of warships. I saw some splendid guns just receiving their finishing touches.

Time did not permit of further visits, although two or three months longer could have been profitably spent in England and Scotland.

On the 10th July I left London for New Zealand *via* the Suez Canal. Registered luggage and mails are loaded into large boxes, two fitting on a truck. I paid 1s. 3d. for conveyance of 40 lb. to Paris. At Dover the boxes are lifted off the trucks and placed by an hydraulic crane in the steamer's hold. On arrival at Calais a crane lifts the boxes out of the ship and places them on trucks for Paris. The work was done very expeditiously. Seats in the train for Paris were reserved prior to departure of the train from London for Dover, the cost of reservation being 1s. 3d.

The French carriages were larger than the English and very comfortable to travel in. The external painting of the cars was inferior, and the locomotives were not so clean as in Great Britain. The track was good and a high rate of speed was maintained. The catering in the dining-car was not good, and dirty table-linen did not improve matters. The car was also a very bad-running one. Pintsch gas is largely used for lighting, and electricity is also used to some extent. Heating is by steam. Overbridges are not numerous, and passengers must look after their own safety in much the same way as they have to do in America. The four-cylinder compound locomotive is universally used. The wagon stock is on English lines, and large-capacity trucks are not much used.

At Marseilles and Naples I did not observe anything special in railway practice.

I arrived at Fremantle late in the day on the 17th August. A stay of six hours was made. I ran up to Perth and saw the station, which is a fine building. It was too late to see any of the railway people.

On the 22nd August I arrived at Port Adelaide and spent the day with Mr. Pendleton, the Commissioner. Visited the Islington Workshops where I met Mr. Roberts, the Chief Mechanical Engineer. The shops have been greatly improved and enlarged since my first visit some four years ago. A number of very well-designed modern tools have been installed. Mr. Roberts claims to be able to build locomotives at a less cost than they can be imported from England or procured from local manufacturers.

I went on to Melbourne by the night express, and was met on the Melbourne platform next morning by my old colleague Mr. Hudson and a number of other prominent railway officers. I called on the Chief Commissioner and Mr. Hudson, and had an interesting time with them. Accompanied by Mr. Woodroffe I went over the Newport Workshops. They have been equipped with modern tools and generally considerably improved. The Commissioners now build their own locomotives, ten being built yearly. Like South Australia they say that they can build cheaper than they can import or buy from local manufacturers. I noticed many devices in the Newport and also in the Islington shops which would be valuable in the New Zealand shops, and I have instructed Mr. Beattie, Chief Mechanical Engineer, to obtain full details.

My time in Sydney was limited, and I was unable to visit the Sydney workshops.

A controversy of considerable interest was taking place between the Chief Mechanical Engineers of South Australia and Victoria, who claim to be able to build for less than they can import, and the Chief Mechanical Engineer of New South Wales, who argues and proves to his own satisfaction that, as he cannot build cheaper or as cheaply as he can import, neither can South Australia nor Victoria do so. In New Zealand our locomotives so far have not been built as cheaply as the imported engines. Piecework is in vogue in Australia. In New Zealand the amount of piecework is practically nil, and is confined to brass castings and steam-hammer forging.

My trip round the world ended on the 31st August when I arrived at Wellington.

In conclusion I desire to express my thanks for the opportunity which the Government has given me to visit America and Great Britain. I have observed the workings of many railway systems, which I trust may prove to be of some value to the colony.