



NORTH ISLAND MAIN TRUNK RAILWAY: OHINEMOA SECTION—A RHYOLITE ROCK CUTTING.

of timber, although sawmills have been at work at various points along the Line for years. From Turangarere to Taihape, sixteen miles distant, the works are of a very heavy nature, including two tunnels, and troublesome cuttings and fillings along the banks of the Hautapu river, a tributary of the Rangitikei. As at Raurimu, the country falls away too fast to allow of the Line being constructed on the proper grade without adopting expedients to gain distance. A detour had therefore to be made to Mataroa to gain about a mile and a half of extra length of line so that the grade might be maintained. Taihape is a lively settlement which has for some time been the terminus of the Line at the south end, and is also the centre of a considerable sawmilling business, besides being the distributing point of supplies and produce for the numerous settlers who have recently taken up land in the neighbourhood. It has grown rapidly in the last few years, and possesses some presentable public and private buildings.

Southwards from Taihape, if we except two tunnels, one on the railway, and the other for the diversion of the Taihape creek under the Line the country is fairly easy as far as the Poetoe creek, which is spanned by a steel bridge at a great height, but between this point and Mangaweka construction works are again of a very heavy nature, a number of tunnels having been necessary to carry the Line past the steep cliffs of the Rangitikei river. A long and high viaduct just outside Mangaweka was also necessary, but a comparatively simple design was possible, and the work of erection was, therefore, not difficult. Mangaweka was for some time a township of importance, but the progress of the works into the interior, and the advance of the terminus to Taihape, have deprived it of some of its glory.

Southwards of Mangaweka, right through to the point of junction with the Wellington-New Plymouth line at Marton, the formation works are of a moderate character, with the exception of a short length of heavy work near Mangaonoho. On this section one of the most remarkable engineering efforts on the whole Line is met with, namely, the mighty viaduct spanning the Makohine ravine at a height of 238 feet. Though not quite so high nor so long as the viaduct under construction at Makatote, higher up on the Line, this was much more difficult work from an engineering point of view, owing to the treacherous nature of the sides of the ravine and the faulty foundations. These circumstances necessitated a structure with only two intermediate piers so as to avoid having to construct foundations on the sloping hillside. These piers had to be of extraordinary strength to carry the concentrated loads, and the girders also had to be much deeper than would otherwise have been necessary. The centre span is 176 feet long flanked on either side with two spans of 247 feet and 38½ feet respectively. The 247 feet spans are made up of cantilevers 38 feet long being extensions of the centre span, and a 209 feet span hinged to the end of the cantilever at one end while the other end rests on a concrete pier. The girders of the 209-feet spans are 22 feet deep, and those of the central span 25 feet.

There are 12,000 tons of concrete, 1,252 tons of steel and iron, and 26,560 superficial feet of timber in the structure, which cost £72,000.

SETTLEMENT AND ROADS

When the Line was started there was no settlement between Silverhope (Rangitikei) at the south end, and Te Awamutu at the north, nor were there any roads or other means of communication through the Rangitikei Valley and the country beyond, except an extremely rough native track. Since the construction of the Line commenced townships have sprung up in several places along its route, particularly at Hunterville, Ohingaiti, Mangaweka, Taihape, Raetihi, Taumarunui, Te Kuiti and Otorohanga. In connection with the railway a great many miles of roads through the adjoining country have been constructed for the purpose of giving access to the railway stations, and a service road, for use during the construction of the Line, has also been formed throughout its entire length. This road, during the coming summer, will be placed in sufficiently good order for coach and buggy traffic, so that it will be possible to drive from Auckland to Wellington by the route of the railway. This has never been practicable hitherto.

Up to Turangarere, at the south end, the country has now all been settled by Europeans, the farms for the most part being small, so that there is a somewhat considerable population along this part of the route.

From Marton right through to Turangarere the country was originally heavily timbered, and much of it is so still, though sawmills have been planted at intervals as the rail-head advanced, and a steadily increasing volume of business done in timber for export, as well as for local consumption and the Wellington market. Although the annual output is enormous, the visible supply is sufficient to keep the millers occupied for many years to come, and the value of the country is, if anything, rather enhanced when the timber has been cut down, for the soil is capable of supporting a population of dairy, sheep and cattle farmers. One pleasing feature about the progress of the Line is that many of the men who put in periods of work on its construction have invested their savings in acquiring a home and means of earning an independent livelihood by taking up land along the route and they are now on the way to make a comfortable living without troubling the labour market, while some still struggling selectors are glad to avail themselves of the opportunity of earning a little ready money by undertaking work on the Line.

PRESENT POSITION AND PROSPECTS.

The rail-head at the northern end is at Oio at present, but in a month or two will have reached Raurimu, where it will probably remain for some little time. The works from there to Makatote are actively in hand and being pushed on as rapidly as possible. In the tunnels and more important cuttings the men are divided into "shifts" and artificial light provided, so that the work goes on continuously throughout the whole 24 hours, except on Sundays. The Makatote viaduct is also under construction by a reliable firm of contractors, the stipulated date for its completion being 15th June next. By the time the viaduct is completed the intervening length of formation between it and Raurimu will also be finished and the rails laid, so that the rail-head can be immediately advanced over it and on to Manganui-o-te-ao. The contract for the Manganui viaduct is also in Messrs Anderson's hands, the agreed date for completion being 7th February, 1908.

The rail-head at the south end has just reached Turangarere and comparatively easy work lies ahead till the first summit of the Line at Waiouru is reached. The workmen are already thickly spread over the whole of this length, and a rapid advance of the rails may be expected. They are certain to reach Waiouru before the close of the coming summer. With the rail-heads at Raurimu and Waiouru at either end there will remain a gap of 40 miles, half of which is easy country, and more or less work has been done over practically the whole of it.

Last year a staff of engineers and workmen were started on a new section of the Line between



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