

The principal work now unfinished on the Kirikopuni Section of this railway is the Wairoa River Bridge. This bridge is 756 ft. long, and consists of two 106 ft., two 45 ft., and fifteen 30 ft. steel spans on three cylinder concrete piers and seventeen timber piers. In my last report I mentioned that the cylinder-pier construction was well under way. Good progress has now been made. All the timber piers on the south side of the river are now finished; the three concrete cylinder piers in the river are completed, having been sunk to an average depth of 25 ft. on to the sandstone rock of the river-bed. On the north bank eleven piers are in place, and pile-driving on the remaining six piers is in progress. Three 30 ft. and one 45 ft. plate girders are erected, as well as one of the main 106 ft. spans. The erection of the other 106 ft. span is well forward. It is hoped to complete the bridge by the end of October next.

There are twelve other bridges on this section, seven of which were practically completed last year and the balance during this year. One bridge at 120 m. had to be abandoned owing to the falling-in of river-banks and consequent shearing-off of the piles. The bridge has to be lengthened, and cannot be completed till the ground dries and becomes stable during the summer. A temporary bridge has been erected to carry the traffic in the meantime.

In addition to the above bridges, nine road-bridges, including five overbridges, were completed during the year. All culverts have been completed, and some have been extended where slipping of banks has made this necessary.

Platelaying was done during the year from the northern end of Wairoa Bridge (119 m. 5 ch.) to the terminus at 120 m. 75 ch. Ballasting was completed between Waitotira and the Wairoa Bridge. On the northern side of the Wairoa River the first lift of ballast is finished. The line has been well maintained for the running of traffic to Pukehuia.

There has been an increase of traffic during the year; 8,477 passengers, 1,200 tons of general goods, 1,500 head of cattle, and 12,400 head of sheep and pigs were carried. It is expected that when trains cross the Wairoa River Bridge at the end of October the amount of traffic will be much increased. The roads radiating from the terminal station at Kirikopuni are now being improved, and after next summer they will probably be open for all-the-year-round traffic. An average of 390 men were employed on this section during the year.

Crushed stone for ballast was obtained from Tauraroa quarry. The plant in the quarry was altered during the year to supply a greater quantity of smaller metal and chips for roadworks in the vicinity. The output for the year was 63,200 cub. yd. of spalls. There are now fifty-two men employed in the quarry.

AUCKLAND-WESTFIELD DEVIATION.

This deviation is 9 m. 70 ch. in length, of which 8 m. 70 ch. is being done by the Public Works Department. The long embankments across Judge's and Hobson Bays which were in progress when I wrote my last annual report are now practically completed. The embankment across Orakei basin is now also joined up, so that the formation is now nearly completed from the new Auckland station-yard to the Purewa Tunnel at 4 m. 60 ch. A service track has been laid over the whole of the distance, and also extends through the bottom drive of the tunnel and on to the rock cutting at 6 m. 60 ch. The widening and completing of the long embankments is dependent on the progress of the sea-wall, which will protect both the railway and the Auckland-Orakei Waterfront Road. These two works are now organized and worked in conjunction. The sea-wall has now advanced for a distance of 70 ch., and good progress is being made both with the wall and the road. Beyond Purewa Tunnel formation work to Mount Wellington (6 m. 64 ch.) is well advanced, and a service train is running from the tunnel to this point. From 6 m. 60 ch. to the end of the deviation (9 m. 70 ch.) the formation is in varying stages of completion, but has been delayed by some alterations to grade and alignment, which were rendered desirable to avoid rock exposed in floor of cutting. It is anticipated that by March next the whole formation will be sufficiently advanced to permit of the laying of the permanent track from Auckland to Westfield.

Selected rock from a cutting through a lava-flow at 6 m. 60 ch. is being crushed for road-metal and for concrete. A considerable saving has been made by utilizing the rock from the cutting for the construction of the tunnel, bridges, culverts, roads, &c. The rock not suitable for these purposes is being used for the banks. The plant consists of two gyratory crushers, one chip-crusher, and the necessary elevating and screening machinery, all being electrically driven.

The Purewa Tunnel is the principal work that governs the progress of this railway-deviation. When I made my last report, practically only the bottom heading had been driven. During the year 612 ft. at the north and 400 ft. at the south end have been completed, leaving 900 ft. still to complete. The country through which the tunnel is being driven has proved more difficult than was expected, and considerable pressures have been met with, necessitating a tunnel with a strong concrete invert, as well as a thick lining for the walls and arch. It is expected, however, that the tunnel will be finished by the end of March next.

Five steam-shovels and eight locomotives have been employed continuously on the formation and tunnel work, and have given every satisfaction. There are six railway bridges and seven road overbridges on the deviation. These are in varying stages of completion, and will be some of the last works to be completed. A considerable number of culverts were completed during the year, and only a few near Westfield now remain unfinished.

Considerable use has been made of electric power on the works, obtainable from the local Power Board. The average number of men employed during the year was five hundred. Nearly all of these have been accommodated in cottages and huts in three main villages, supplied with drainage, water-supply, electric lighting, and metalled roads.