Heao Section (50 m. 60 ch. to 57 m.; length, 6 m. 20 ch.).—During the first half of the period operations on this section were largely confined to the No. 2 and No. 3 tunnels, but later in the period additional men were engaged and the formation between tunnels No. 3 and No. 4 was put in hand to enable a start to be made with No. 4 tunnel, and bottom headings were pushed forward to facilitate transport ahead and enable future operations to be carried on without resorting to the use of long and expensive jigs or roads over the ridges.

Good progress was made with the earthwork in the Mangaone and Mangatete Valleys until the wet weather set in towards the end of the year and caused several heavy slips, which held up the cutting-work somewhat.

Between 50 m. 60 ch. and 53 m. 46 ch. formation is well on towards completion, and from 53 m. 46 ch. to the start of No. 4 tunnel at 55 m. 17 ch. it should be completed in about another six months.

At tunnel No. 2 (52 m. 10·50 ch. to 52 m. 65 ch.) the bottom heading has been completed and the tunnel enlarged and lined to 52 m. 45·60 ch. at the west end and to 52 m. 51·58 ch. from the eastern end, and this leaves approximately 6 ch. yet to enlarge and line.

No. 3 tunnel (53 m. 46 ch. to 54 m. 30 ch.): The bottom heading was advanced to 53 m. 74·76 ch., and the enlarging and lining was completed from 53 m. 52·05 ch. to 53 m. 62·44 ch. in heavy and wet ground.

No. 4 tunnel (55 m. 17·50 ch. to 55 m. 68 ch.): The approaches to this tunnel are in hand, the west end proving very dirty, while the east end promises to be a solid face.

An 8 ft. by 6 ft. water-drive at 53 m., 90 ft. long was completed with face-walls and another 12 ft. by 10 ft., at 53 m. 25 ch., 231 ft. in length, was driven through very heavy ground, which made progress slow, and lined. A 6 ft. by 4 ft. water-drive at 54 m. 51 ch., 118 ft. long was driven, but is not yet lined.

Two stream-diverts, totalling 10 ch. were completed, but a good deal of extra work was involved due to slips.

The Mangaone quarry, which has been providing stone for the concrete lining in No. 3 tunnel, was kept in full operation for the greater part of the period, until the breaking-through of No. 2 tunnel enabled stone to be brought forward from Raekohua. During the period 2,762 cub. yd. were quarried and crushed.

Transport on this section is difficult owing to the necessity for pushing the work on the forward tunnels before the earlier ones are holed through. This has necessitated hauling over the ridges which are in process of being tunnelled. In order to haul material to No. 3 tunnel before No. 2 was holed through it was necessary to construct a service road over the saddle and into the Mangaone Valley, and all material was satisfactorily transported by motor-lorries.

Similarly tracks have had to be made over the ridges into the Mangatete and Tikapuiti Hill valleys.

All power for the works as far as No. 3 tunnel was generated at the central power-house at Tangarakau Flat and transmitted by power and air lines to the various localities. This outfit has operated very satisfactorily throughout the period.

In January of this year the Mangatete Valley was practically virgin forest. With the increase in the number of men accommodation had to be provided both in this and the Tikapuiti valleys. A large cookhouse was built to serve a hundred men, and fitted with a salamander and hot and cold water. A bathhouse, with hot and cold showers, with a similar capacity was also built.

Eighty tents, fitted with floors, chimneys, and galvanized-iron roofs, were erected in the Mangatete Valley, and a temporary cookhouse and twenty tents in the Tikapuiti Valley.

Palmerston North Railway Deviation.

At the date of my last report approximately one-quarter of the formation work on the deviation, including drainage-work, culverting, and fencing, had been completed.

During the past year more locomotives and excavating plant became available, and the excavation of the large goods-yard area, involving the removal of half a million cubic yards of material, was pushed rapidly ahead, the conditions for the operation of steam-shovels being very favourable.

The clearing of the reserve was finally completed and a further 1,236 lin. ft. of culverting constructed, this completing the culvert system with the exception of two small culverts.

The first of the seven road-overbridges, that at Milson's Line, was completed and opened for traffic on the 10th December. The construction of other overbridges was not started. Five test piles were driven at the Mangaone Stream Bridge site. In order to improve the site for this bridge and to straighten the course of the stream, a diversion channel 19 ch. long was excavated, requiring the removal of 22,000 cub. yd. of material.

Four steam-shovels, seven construction locomotives, and two caterpillar tractors were employed on formation, two shifts being worked during the summer period. The embankments, with the exception of a small corner of the goods-yard and the site for the main passenger-station building, have been completed. Approximately three-quarters of the excavation of the goods-yard has been completed, the balance of the spoil being required for overbridge ramps. During the shortened construction period of nine months and a half 207,000 cub. yd. of earthwork were excavated. The main-line formation was completed to within 42 ch. of the northern junction with the existing Main Trunk Railway. The average number of men employed on this work for the period was 204.

On the 18th April last steps were taken to cease operations as a result of the decision by the Government that the construction of the Palmerston North Railway Deviation should not continue. Arrangements were at once made for the transfer of workmen to other works. Most of the plant and material has been transferred elsewhere, and the balance is being sold by auction.