

descends for about 10 chains along a rather steep face, and then for some half mile further through undulating bush, partly scrubby and partly well timbered, till it reaches some black birch ridges, which descend from the Kuku towards the river. I had some trouble in selecting the line among these for about half a mile to a large stream called the Putaringa, owing to their steepness and their terminating in a succession of bluffs overhanging the river and stream, and the difficulty was not lessened by the work of examining the ground having to be done in excessively wet weather. I succeeded, however, in getting a very fair line with little earthwork on it for the pack road, by rising to a small flat from which several of the ridges fork, and then descending along the principal ridge and through some tawa bush to the stream side; a line for the permanent road with an easy gradient can be got lower down, by means of several short through cuttings at the several ridges. From the Putaringa the line rises easily through heavy bush for about a quarter of a mile to a koromiko table, from which it descends again a few feet to the first of the large manuka flats, which for the most part occupy the valley for many miles further; and after crossing this flat it passes over a slight koromiko rise, and down through some kahikatea bush to another large stream called Otuhangatoi, at the mouth of which there are the remains of an old fortified pa called Wereia, where the late Hori Kingi's father formerly resided, but which is now overgrown with trees as thick as a man's body. From the Putaringa to the Otuhangatoi the distance is about a mile and a quarter, and beyond the latter the line again passes over a flat of koromiko and manuka scrub for half a mile or so to a small stream called Mokomoko, and then along a similar flat for about a quarter of a mile farther to a place where the river washes the foot of a rather steep hill side. When I left Mangawhero with Mr. Booth, R.M., on Sunday, the leading line was cut nearly to the Otuhangatoi, and I left the necessary directions for continuing it to the hill face, and examining the ground along and immediately beyond it, a distance of about a quarter of a mile. Beyond the hill face the line will continue along the river side across manuka and koromiko flats for about two miles farther, crossing in its course a small stream called the Kakatahi, and a large one called the Tarakoi, to the foot of a ridge called Otahuanga, which was at once identified by Haimona Hiroti and some other Maoris who went up with Mr. Booth last week, as the one along which an old native track called the Parapara passes on its way from Korinuti to the Taupo plains. They also pointed out the sites of two old pas on either side of the river where the track crossed it. From Tahungatutu to the Otuhangatoi Stream the general course of the road is nearly due north, and from thence to the foot of the Otahuanga ridge a little more westerly. The ridge itself, which is about four or five miles long, rises gradually to the dividing ridge, which forms the watershed between the Mangawhero and Wangaehu Rivers, and has a direction a little to the eastward of north; and the dividing ridge, which is called the Waokura, immediately overlooks the end of the Taupo plains, which goes by the name of Mataitira, the descent being easy and not more than from two to three miles in length. The native track descends at once to the plain, and I had intended to take the road the same way; but as the track crosses the Wangaehu by a rather bad ford, and after passing for some distance through a bush on the eastern side of the plain, re-crosses the river higher up, Haimona argued that there must be some obstacle, arising from the windings of the river or its tributaries, which prevented the track, and would probably hinder the road also, from being taken directly northward along the plain on the western side of the river. I saw nothing when I overlooked the plain from the hill-top last December to indicate any such obstacle, and some other natives, who seem to know the ground, say that none exists, and that the track merely crossed the river to save distance and to join another track from Turakina, which comes up the eastern bank. Of course, till I have gone over the ground I cannot tell whether any obstacle exists, but if it does it will merely necessitate our following the dividing ridge northward, so as to descend beyond it; and will not increase the distance to Taupo to any appreciable extent, though it may add a little to the length of the road itself.

In laying out the pack-road, I have been careful, wherever its position would be identical with that of the permanent road, to employ gradients suitable for the latter. This has, of course, added a little to the cost of the present work, but will effect an ultimate saving.

In reference to the country traversed by the road, I may remark that from Upokongaro to Te Pukohu we follow the shortest route by which a line can be taken over open ground at a low level. On the south of the road the hills are of the elevated table character common near the coast in this part of the colony; and inland of it there are bush ridges and gullies extending across to the valleys of the Upokongaro and Parihauhau streams, which contain a considerable extent of level land easily accessible from the road, and inland of these again there is high broken bush land extending as far as the eye can see. The soil at this part of our line is very good, and all the ground in its immediate vicinity admirably adapted for grazing and dairy farms, though mostly scarcely level enough for agricultural purposes. The subsoil varies from hard sandy clay to a soft sandstone (except in the very bottoms of the Kiwitahi and Huripari gullies, which descend to the blue clay level), and therefore affords a sound bottom for a road, though there appears to be a great deficiency, if not the utter absence, of gravel or other road metal. From Te Pukohu to the entrance of the bush, the valley of the Mangawhero varies from half a mile to three-quarters of a mile in width, and is admirably adapted for small farms, the river and its tributaries winding along between steep banks in such a way that at every bend from 50 to 100 acres may be enclosed with only a few chains of fencing. The soil is very rich, but not so much so as farther inland. The subsoil is dry, and there is everywhere plenty of gravel, as well as immense quantities of large stones and boulders lying about among the fern or embedded in the ground. On both sides of the valley, both here and farther inland, there are lofty wooded ranges, the highest peaks of which must be from 1,000 feet to 1,200 feet above the sea level. In the valleys which descend from these towards the river there are many nice strips of level land, and a large area of fine bush; and in traversing the ridges when exploring the country, I constantly found flats, ledges, and gently sloping hollows of rich available land among them up to their very summits. The general direction of these ridges is from east to west, and the northern face is invariably steep and covered with fern or scrub, while the southern slopes tend gently downwards, clothed in bush, and broken by small gullies. From the entrance of the bush to the Putaringa Stream the valley is narrower, but there are fine flats of bush and scrub at various