Whakarewarewa Plantation.

(Area, 9,547 acres; altitude (approximate), 1,200 ft.)

Trees to the number of 1,702,745 were received from Rotorua Nursery during the season. Of this number, 1,258,570 were planted on new area, 149,385 were planted in old areas where larch which had been destroyed by frost were cut out, and the remainder, 294,790, were used to replace failures—chiefly *Pinus Laricio*—in the two preceding years' plantings. The planting of new area, being at some distance from the prison camp, was almost entirely done by free labour, and the trees handled by the prisoners were mostly used for replacing failures in the blocks within easy reach of the camp. The area planted amounted to 475 acres, making the total area now under young forest 6,224 acres, containing 13,945,596 trees.

Favoured by moist mild weather in the spring and early summer the trees commenced to grow almost from the start, and, although checked later on by continued dry weather, had already become so well established that they were affected but slightly, the percentage of failures being considerably below the average year. *Pinus Laricio*, which formed the bulk of the planting on new area, has done especially well, quite eclipsing any previous planting of this species, and not more than 2 per cent. of failures have to be recorded. Where used to replace failures in former plantings the same good results are to be found, and the only place where failures are noticeable is on the areas from which frosted larch were removed; these areas were replanted early in the season when the weather-conditions were not so favourable, and are so situated that it is difficult to get any tree to do well.

The young plants were much better rooted than is usually the case with *Pinus Laricio*, and this no doubt helped them considerably; but the moist condition of the soil at the time of planting, and the absence of frost afterwards, were the chief factors contributing towards the success of this species. With the larch the same good results have been obtained, although the spell of dry weather checked the growth, and caused a number of them to have an unhealthy appearance for a time.

Amongst *Pinus ponderosa* the percentage of failures is slightly greater than in *P. Laricio*, but, on the whole, is less than usual, and the growth made is quite satisfactory. Douglas fir planted in a very favourable situation have made excellent growth, as have also a small planting of Japanese larch on the same block.

A few hundred Mexican pines—*Pinus patula* and *P. Montezumae*—were planted out, but the locality proved unsuitable, frost being responsible for their failure. *Eucalyptus Smithii*, *E. viminalis*, and *E. umbra* were tried, but only a partial success resulted with the two former species, while *E. umbra*—which is a somewhat tender species—was a total failure.

Vigorous growth, quite equal to that of any previous year, has been maintained by the older trees. In the month of February a considerable number of the larch had their leaders nipped by frost, but in the majority of cases it will probably not have a very serious effect.

Prison Labour.—The daily average number of men employed was 11·66, showing a slight increase on the daily average employed during the previous year. It was, however, only during the latter half of the year that the strength of the camp had been fairly well maintained; in the planting season, when a good gang would have been of great assistance, the number of men available was comparatively small. If the number of men who are at present in the camp could be maintained throughout the coming planting season much better results might be expected. The work of the prisoners, which was estimated at a total value of £1,019 17s. 3d., has been performed in a creditable manner, and consisted chiefly of general maintenance-work, pitting, and clearing for tree-planting.

Free Labour.—An average daily number of 28·63 men were employed, and the average cost of the various works undertaken were as follows: Clearing for tree-planting, £1 7s. 9d. per acre; pitting of new area, 5s. 5d. per thousand; pitting old areas, 13s. 7d. per thousand; planting new area, 6s. 11d. per thousand; replanting old areas, 8s. 2d. per thousand; and planting blanks, £1 5s. 3d. per thousand. The formation of 85 chains of roading cost, on an average, 11s. 10d. per chain; and 169 chains of fire-break were cleared, stumped, and burned off at a cost of 3s. 11d. per chain.

With the exception of about 50,000 trees, the planting on new area was all done on the block of land purchased from the Natives during the previous year, the trees available being sufficient to completely fill it up. As the land was fairly easy to work, the cost of preparing the ground and planting it was somewhat below the average cost of this work. For the coming season's planting the block on which the free labour will be engaged will be exceptionally heavy, and the pitting and planting proportionately expensive.

Sowing in situ.—In order to determine the practicability of raising woods by direct sowing in this locality, experiments were made in the spring-time with the seed of *Pinus Laricio* and *P. radiata*. Three experiments in different methods of sowing were made with each species. In the first experiment the land—which had previously been cleared and burned off—was roughly cultivated by hand in rows 3 ft. apart, the seed was sown on the rows and raked in, ½ lb. of seed being used to the quarter-acre. In the second the seed was broadcasted amongst the ashes after the growth was burned off; and the third sowing was made by scattering the seed on land lightly covered with a growth of fern and manuka. These experiments resulted in failure, as *P. Laricio* never germinated at all, while the germination of *P. radiata* was very poor—the best result being obtained where the ground was slightly cultivated. It would appear, therefore, that in order to raise a sufficient number of seedlings to the acre either an enormous quantity of seed would be required, or the ground must be specially prepared to form a good seed-bed; in either case the work on rough country would in all probability be unsatisfactory, and would undoubtedly be more costly than the present method of raising the plants in the nursery. Small birds also not only pick up exposed seeds, but take the seedlings as they come through the ground, and there is always the risk of unseasonable frosts destroying a young crop over which there is no protective covering. There is good reason to believe, however, that where land