

Planting was done under very favourable weather conditions, and splendid results were obtained, the death-rate being small. A small area of native bush, after being underscrubbed, was underplanted with 2,425 *Cupressus macrocarpa*. The young trees are making a vigorous growth; one measured showed an increase in height of 18 in. The losses in transplanting are slightly over 20 per cent. Experimental plantings with nine different kinds of trees made on a small drained swamp area were only fairly satisfactory. *Thuja gigantea* is the only tree which is doing really well; *Cupressus arizonica* is doing fairly well, and may ultimately be a success, although at present they are not as healthy as could be desired. Good results were obtained with *Cryptomeria japonica* and *Sequoia sempervirens* in underplanting larch, while the older plantings of these species continue to make strong vigorous growth.

Maintenance.—The bulk of the expenditure for the year has been in clearing around the young trees on the recently planted areas, which are mostly rough steep faces covered with heavy bracken and tutu. This class of country has been largely planted with the fast-growing *Pinus radiata*, and by this means the cost of cleaning round trees, although still very considerable, has been reduced to a minimum, as this pine rarely requires going over after the second year from planting.

Fire-breaks have been kept in an efficient state, all the boundary and subdividing breaks being gone over. A mowing-machine was used where possible in clearing, but owing to the generally rough nature of the country this was practicable on small areas only. There is abundant rich pasture on some of the grassed fire-breaks which requires heavy stocking to become thoroughly effective in the event of fire. With the grazing so scattered sheep-worrying dogs are troublesome, and probably young cattle would be found the more suitable. The grazing was leased to a local farmer for the year ending 31st December, 1918, but he had so many sheep killed by dogs that it is not likely he or any other farmer will be anxious to get the grazing again.

The demand for mine-props regulated the extent of the season's thinning, this being done only as material was required. Fifteen acres of larch, growing in mixture with Douglas fir, were thinned, the object being to provide greater growing-space for the Douglas fir.

Utilization.—The sales for the year amounted to 4,197 mine-props and 163 cords of firewood, of a total value of £442 10s.

Labour.—A shortage of labour early in the season, and the influenza epidemic later, interfered considerably with the work. The average daily number of men employed during the year was 18.50.

Summary showing the Area of Whakarewarewa Plantation (7,966 Acres in Trees).

	How occupied.	Acres.
Pines		3,137.49
Larch		2,557.80
Eucalypti		1,468.70
Spruce and Douglas fir		643.31
Miscellaneous		159.04
Roads, tracks, and fire-breaks		514.43
Land unsuitable for planting, including swamps and creeks, also residence reserves, paddocks, and water-main reserve		1,490.23
Unplanted land		152.80
Total		10,123.80

WAIOTAPU PLANTATION.

The beneficial effect of the mild weather experienced during the spring was marred by an exceptionally heavy frost during midsummer, when eleven degrees were registered. Although it did apparently a lot of damage, it is not so bad when closely examined, for most of the injury is confined to the needles or leaves. The terminal buds were not harmed to the extent they would have been had it happened a month sooner. In Block 18 the small Corsican pine in the tussock hollows suffered the most.

The area in trees was increased by 749 acres, making a total of 8,454 acres under timber. The number of trees planted out was 908,772.

The growth of trees in the different blocks is up to the average of previous years. The growth put up by *Sequoia sempervirens* (redwood) in Block 4 since the larch was thinned is very good and looks very promising. The underplanting done with *Pinus strobus* is also worthy of special mention, as it is doing so well, and, in fact, wherever it has been planted here it is a success. This is very gratifying, as it is such a valuable tree. The only drawback is the number of double leaders caused by frost in its earlier stages of growth, but most of this can be rectified when thinning is done. *Pinus strobus* and *Pinus ponderosa* where planted with other species as nurses have become predominant by 6 ft. to 8 ft., and will very soon kill the nurse-trees out.

The older pine plantation, especially the *Pinus radiata* in Block 7, was badly affected by caterpillars. These in their attacks are very much like the caterpillars of the *Tortrix pinicolana*. They, however, differ in habit, as the eggs are deposited in two rows of about thirty or forty along the needles, and can be easily seen. They are of a bluish colour, and oval in shape, with the sharp point outwards. The caterpillar moves about by means of a thread it spins from branch to branch. They feed all over the trees affected, so much so that some appeared as if the needles had been burned.