

number of prisoners employed gradually decreased, with the result that the progress made with the work was most unsatisfactory. In order to make up leeway it was necessary to get together a gang of about thirty workmen to replace the prison labour, and as this took some considerable time to accomplish the work in consequence was not finished until late in the season.

The value of work done by prison labour hereunder summarized completes the record of same from 1901 up to the withdrawal of this labour from forestry work :—

Summary of Prison Labour.

Station.	Year.	Period.	Total Value of Work performed.			Average Daily Number of Men employed during Period.	Average Value of Work per Man per Year.		
		Years.	£	s.	d.		£	s.	d.
Whakarewarewa Plantation ..	1904-17	12-58	12,518	7	10	12-86	77	7	7
Waiotapu Plantation ..	1900-13	12-08	24,655	2	6	30-22	67	11	3
Kaingaroa Plains Plantation ..	1920-21	0-42	378	4	3	9-10	41	11	3
„	1912-21	7-60	15,495	10	4	22-76	89	11	8

Prison labour on afforestation work ceased on the 22nd July, 1920.

TREE-GROWING.

The weather conditions during the spring and early summer were ideal, and resulted, with a few exceptions, in good growth being made by the nursery stock. This period of favourable weather was, however, followed by a protracted spell of dry, hot weather which arrested the growth of most of the seed-bed stock, with the result that these are somewhat below the average in size. The lined-out trees are, as a whole, a splendid lot, the good start obtained in the spring being responsible for the strong, well-rooted condition of the stock. The percentage of trees raised from seed during the year was marred by the exceptionally poor germination obtained with the seed of Douglas fir, which from 100 lb. produced only 300,000 trees, or one-fifth of the number raised from a similar quantity of seed the previous year.

Some 350,000 trees were raised especially for selling to private planters, the principal species being *Pinus radiata*, *Cupressus Lawsoniana*, *Cupressus macrocarpa*, and thirteen species of the genus *Eucalyptus*. All are good except the eucalypts, which as a whole are somewhat under size.

During the spring 1,500,000 seedlings were lined out in the temporary nursery at Kaingaroa, and, in spite of the fact that the work was not completed until the first week in October, the growth made is most satisfactory and the death-rate practically nil. Owing to the difference in the soil and climatic conditions, the growth made by nursery stock at Kaingaroa is not nearly so vigorous as in the nursery at Rotorua. The stock, however, is much sturdier, and this is especially true of the two-year-old plants of *Pinus radiata*, which under warmer conditions generally become overgrown and less suitable for transplanting.

EXTENSION OF PLANTATIONS.

An area of 1,062 acres was planted during the year, thus bringing the total area planted to date in the North Island plantations to 26,068 acres. With the exception of 17 acres planted at Whakarewarewa which was of an experimental nature, the whole of the extension work was done on the Kaingaroa Plains. The results as a whole are satisfactory, although, owing to the dry summer and autumn, the growth made is below the average.

FIRE PROTECTION.

No fires occurred in the plantations during the year. The dry weather experienced during the last quarter of the year, however, caused considerable anxiety on account of the prevalence of fires in the surrounding country. The only safe course is to definitely locate the position of every fire when once smoke is observed, and treat every sign of fire as a possible danger to the plantations. The anxiety which usually exists until a fire is located will be largely avoided when the lookout stations are established. The sites chosen for these stations command a view over a very large area of the plantations, and, what is equally important, over a great deal of territory outside the plantation boundaries. At Whakarewarewa Plantation the site chosen is the top of Mount Kakapiko, a position from which seven miles of the boundary on the Rotorua-Waiotapu Road as well as three parts of the plantation can be kept under observation. The planted areas at Waiotapu and Kaingaroa will be well provided for with the lookout station which it is proposed to erect on the summit of Maungakakamea. From this place a magnificent view can be obtained over a huge area of country; the entire area of Waiotapu Plantation and practically every yard of the boundary can be seen, while three-fourths of the planted area on the Kaingaroa Plains can be observed. The large area of unoccupied country, clothed chiefly with a strong growth of bracken, manuka, and other shrubby plants, lying adjacent to the plantation areas, necessitates constant labour being spent on the fire-breaks. Inside the boundaries a narrow strip is ploughed where possible and the weed-growth kept in check by harrowing, while a further measure of safety is secured by burning off wide strips outside the boundaries. The ploughing and harrowing of firebreaks has been more economically and expeditiously performed since the tractor was purchased for this work. Ninety per cent. of the fire-breaks at Kaingaroa and Waireka,