

RETURNS FROM CLEAR FELLING AN AREA OF INSIGNIS PINE.

The following figures regarding the felling of an area of thirty-three year old insignis pine (*Pinus radiata*) may be of interest to readers.

Plantings by the Dunedin City Corporation in their earlier forestry efforts of thirty-five to forty years ago, did not contain any compartments of insignis pine, the planting of this species being confined to windbreaks one to four rows wide. The first small compartment, planted in 1914, consisted of an area of 7.8 acres, and the figures quoted below are those obtained from clear felling this area in 1946-47. The site was formerly manuka country, and had been used for grazing for fifty years or more before planting; the soil was poor, not more than six inches in depth, and overlying hard yellow clay. The compartment sloped gently to the south-east, and a large amount of surface rock was present on approximately one quarter of the area.

The stand was planted in 1914 at four feet spacing, no record being available of the type of planting stock employed, but it would probably be 1—1. Pruning up to seven feet or so was carried out in 1926, and light thinnings were undertaken in 1931 and 1936. A yield of 6 cords of firewood per acre was obtained from the first thinning, while the 1936 thinning yielded $4\frac{1}{2}$ cords of firewood, plus 1,600 board feet of saw logs per acre. No further treatment was given to the stand, and in 1946 there were approximately 330 trees per acre remaining, of an average height of 95 feet and D.B.H. of 13.3 inches.

It was decided to clear fell the area, and prices were obtained for the purchase of the logs delivered at Dunedin, and for the cutting and the cartage of the logs. The logs were sold on a log scale basis, the so-called Goss log scale commonly in use in Canterbury being employed, and were delivered at the purchaser's yard in Dunedin or suburbs. Log measure was on the small end diameters; the minimum top was six inches inside bark. Log lengths varied from eight to sixteen feet. The price obtained for delivered logs was $23\frac{6}{6}$ per hundred board feet log scale measurement. A contractor undertook all the necessary felling, logging and cartage to the purchaser's yard, at an all in cost of $6\frac{6}{6}$ per hundred board feet by the same log scale. All timber not suitable for logs was cut to four feet firewood lengths, and stacked, at a contract price of £1 per cord. All slash was piled by the contractor but not burnt. The contractor supplied all the necessary tools and equipment, and was responsible for the erection of loading banks and the provision of access tracks within the compartment. The plantation is situated five miles from the General Post Office, Dunedin, on a good bitumen road, but the last three hundred yards of plantation road giving access to the compartment was of metal surface only, and its upkeep was the

responsibility of the City Corporation. Both the logging and sale contracts proceeded satisfactorily.

The compartment of 7.8 acres yielded 685,018 board feet log scale, equivalent to 87,820 board feet per acre. In addition 209 cords or 26 cords per acre, of firewood were cut from the tops, branches and shattered logs.

The sale of logs yielded £8,049 and the payments to the logging and cartage contractor required £2,227 of this sum, leaving a gross profit of £5,822. Working expenses were light, amounting to less than £100, mainly for the maintenance of the main access road. It is expected that this sum will be recouped from the sale of the 209 cords of firewood, as a price of at least 30/- per cord on the ground is expected when tenders for its purchase are called. Some further expenses will be incurred in burning the area prior to replanting, for as yet there is no indication of natural regeneration, although all the cones were left on the ground. The net yield, therefore, amounts to approximately £746 per acre, but unfortunately no planting or maintenance costs over the 33 year rotation have been recorded.

This phenomenal return has been obtained only because of the suburban site, the excellent quality of the stand, and the high prices ruling for sawn timber at the present time. However it indicates the advantage of proximity to the market when considering the establishment of exotic forests. Unfortunately, the majority of the Dunedin City Corporation forest areas are not as close to Dunedin, nor of the same high quality as this stand. It is of interest that a further series of small compartments and windbreaks now being clear felled is bringing in an even higher return for sawn logs—24/- per hundred board feet (Goss log scale)—and a reduction of 4d. per hundred board feet has been obtained under the new logging contract. The minimum top diameter has also been reduced from six to five inches inside bark.

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THE UMBRELLA PINE—*Sciadopitys verticillata*.

The Umbrella Pine is restricted in natural habitat to Japan where it is found in the Kiso River Valley, on Mt. Koya in the Wakayama Province and as an occasional widely scattered tree in the mountains of Shikoku. Nowhere has it been planted artificially as a timber tree but specimens can be seen in gardens throughout the world.

Found extensively on Mt. Koya from which it gets its Japanese name Koyamaki, the Umbrella Pine is a most important tree in this locality. Over the whole National Forest it forms 32% of the total number of trees, but there are places where it occurs in small pure colonies. The chief associated species is Hinoki (*Chamaecyparis obtusa*). In the grounds of the temples and shrines of Mt. Koya, the