

Oregon Pine

This species was planted in the early trials. In 1903 the old plantation was formed mainly of Oregon pine, with *P. radiata* planted along the margins except where a block of *Robinia pseudacacia* was established in 1907. In the decade following the planting the Oregon pine showed a high percentage of failures, but no apparent cause was recorded. (In the light of planting experience since that time it can be surmised that the failures were caused by a dry season following late planting.) Failures were blanked up with *Eucalyptus acervilla* on the theory that the eucalypts would catch up with the conifer growth, but though it has kept up in height growth the eucalypt crop has been crowded by the expansion of crown growth of the conifer crop, which probably was planted at a close spacing of 6 or 7ft. and has selected itself naturally.

That indicates the need for a wider spacing for Oregon pine on this land and provides an interesting comparison with the growth of another young block. This block was planted in pure Oregon pine at 9 to 10ft. spacing on an easterly slope of brown loam formation. It had no failures and is now 5 to 10 years old and showing good, even growth with an average total height of 14ft. and an average breast height diameter of 3 to 4in. The low average height would indicate that this spacing is too wide, but it is too early to base an opinion on this 1 plantation, especially in view of the similar growth form—low height and large diameter growth—shown by trees of this species elsewhere on the area.

Regeneration from seed cast by the older trees scattered through the mixed plantations around the house is good and would indicate the suitability of this species on the area. Provided the seed shows a sufficiently-high viability and germination percentage, these crops, grown at a fairly-high altitude, would be suitable as a source of Oregon pine seed.



A mixed plantation of Oregon pine and Californian redwood 26 years old. The redwood dominates the crop in height with pines persisting on the margin.

TREE PLANTING ON HILL COUNTRY



Tall trees in the home plantation, planted between 1903 and 1910. The group of Lawson's cypress on the right is 38 years old. The lawn tree is a pin oak.

Redwood

The oldest redwood trees were planted in groups in the home plantation in 1908, and though these trees now dominate the rest of the species the groups cannot correctly be termed pure blocks, as in early life they competed with the mixture of broad-leaved and conifer species planted among them. Measurements of the largest tree of these groups showed a diameter at breast height of 35in. and an estimated total height of 104ft. in 40 years. Two plantations which were

planted as a mixture of redwood and Oregon pine have become almost pure crops of redwood, and details of these will be given under the heading of mixed crops, but no pure plantations of redwood have been formed on the holding.

Lawson's Cypress

This species was planted in the same way as redwood as small groups in a mixture of conifers and broad-leaved trees, and a small area in the home plantation now demonstrates its possibilities if grown as a pure crop. This area was planted in 1913 as a mixture of *Pinus rigida* (pitch pine) and Lawson's cypress, but the pine died out when fairly young and was replaced, where an appreciable space was left, with Oregon pine. In places the Lawson's cypress have been left unblanked and now form a widely-spaced pure group of well-grown trees of estimated average height of 60ft. and 8 to 9in. diameter at breast height.

These trees indicate that conditions of soil and climate on this area furnish suitable silvicultural conditions for the growth of this species. The quality of the timber produced now requires to be tested.

The only broad-leaved tree crops planted in pure plantation on the area are of willow or poplar—both these being grown for land stabilisation rather than for the formation of woodland—and a very small number of acacias and *Robinia pseudacacia*.

Willows

One of the earliest pure plantations was that formed about 1905 on the Puariki track, where at the head of the gully on shale-clay soil land was slipping badly just below the crest; this was fenced and 4 or 5 acres were planted fairly closely (12 to 15ft.) with willow (*Salix fragilis* and *S. vitellina*).