

NOTES ON THE HISTORY OF SUN SCOLD IN
PINUS RADIATA AT MUNDARING WEIR

by

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It is worth while going back into our short history of pineplantations, sometimes as a check on various changes being implemented in our pruning practices of the present day.

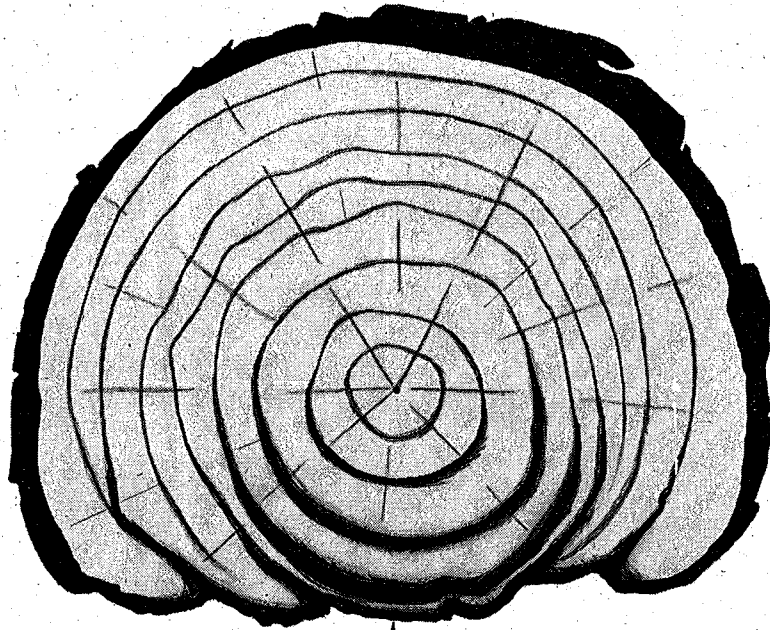
In the compartments of our earliest plantings, no pruning was permitted until the lower branches were dry. This occurred after the canopy of crowns had closed.

The outside rows exposed to the sun were not pruned at any stage. The reason for this being to avoid sun scold and damper down the in-rush of air if a fire was started in the body of the compartment. Our first thinnings in these compartments were very light.

Apart from removing suppressed trees and sufficient subdominant and malformed stems to make a commercial thinning an economical operation and to maintain a reasonable increment rate, it was considered desirable to deny the undergrowth sunlight to complete its suppression and assist in the breakdown of accumulated needle litter and slash. In the higher quality radiata stands of a well managed plantation, it was common to obtain a complete carpet of decomposing litter.

Sun scold in such areas was unknown and even in the open partly failed stands the competing eucalyptus regrowth shaded the poorly clad radiata boles.

When need come to raise the wall of the weir and the water level swallowed up a few hundred acres of radiata, the areas were clear felled to the high water level. On northern aspects mature radiata boles were exposed for the first time to direct sunrays. The effect of the sun was to kill the cambium layer from the ground to the shaded area on the perimeter trees and also to a lesser degree, on the internal trees not shaded by their associates.



DEAD WOOD INTO PITH CORE.

FIG. 1 SUN DAMAGED RADIATA STEM - END SECTION.

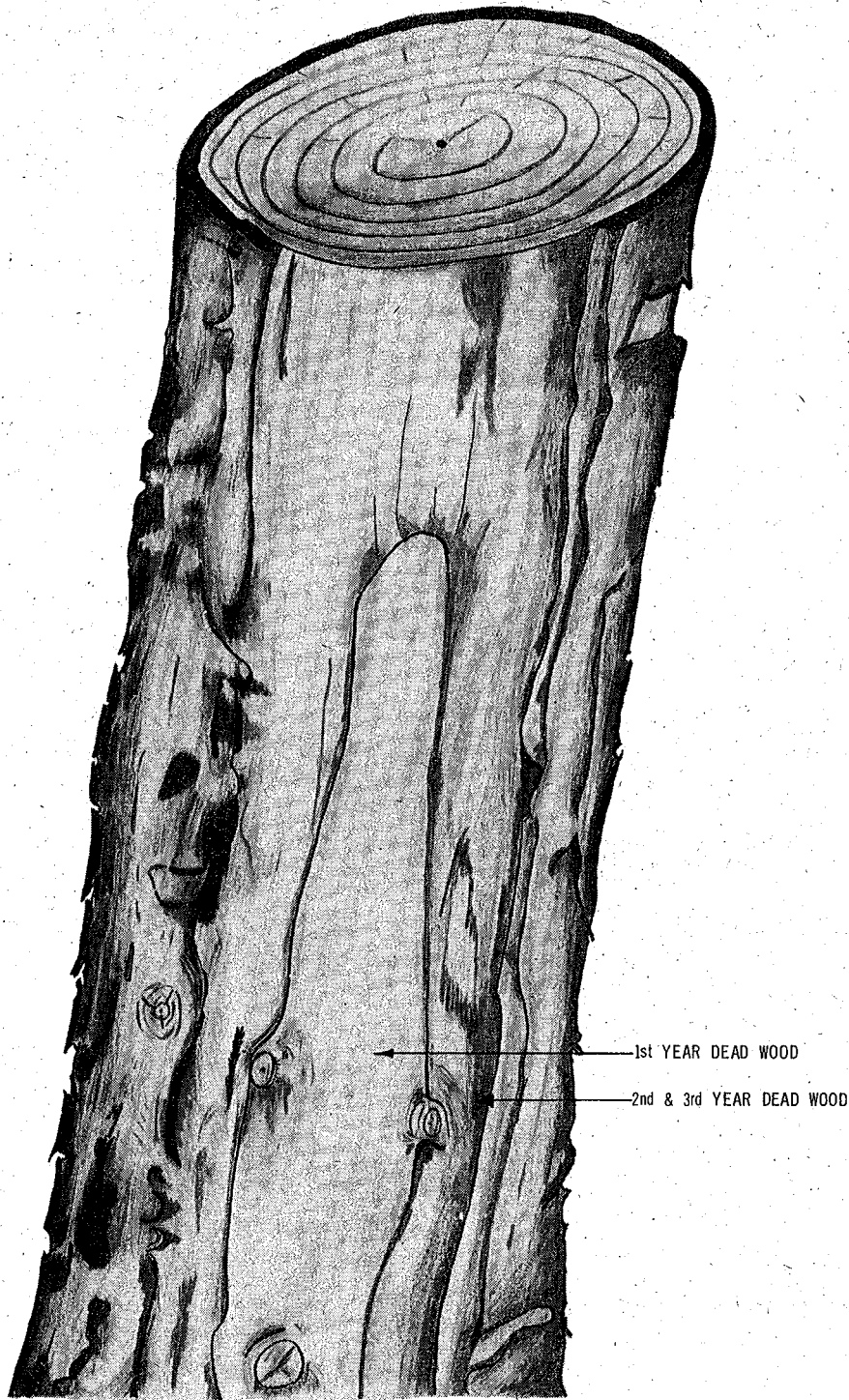


FIG. 2 SUN DAMAGED RADIATA BOLE - SIDE VIEW.

In the thinning operations these damaged trees were removed over the years. If left the bark eventually parted from the wood and fell away, the tree later being attacked by termites. Only the well defined south and south eastern aspects escaped damage.

Those mature stems receiving partial shade on the perimeter eventually thickened up their bark and produced epicormic shoots, remaining today majestic in their vistas.

More intensive thinnings were implemented in the years that followed the neglect of the war years.

In these actions however, the intensity of the thinnings had to be tempered with the consideration of bole support in the delayed thinning sections, as wind could be disastrous in a compartment of slender boles derived of their neighbours' support.

In the early 1960's slicer veneer stimulated the thought for a high grade knot free log outside a 4 in. diameter core and some green pruning was introduced. Faults derived from this practice were multiple epicormic growth on partly shaded vigorous trees and sun scold on the exposed and poorer quality stands.

In some sections having a northerly aspect, this severe sun scold occurred as a seasonal damage into the second and third year of spring overgrowth, after green pruning had been completed to 7 ft. in height if the damaged stems were not progressively removed by thinning.

Damage is usually broad and deep up to 20% of the wood being killed into the pith core as shown in Fig. 1 and Fig. 2. This means a down grading of all damaged logs if trees are not removed in the first and second thinnings. If this tree remained and the rapid growth covers the wound, there is always the possibility of decay internally at a later age.

These faults have been present since green pruning was implemented in the northern plantation of radiata. Pruning is generally done from 6 years onwards, with

thinning commencing after ten years. There has generally been sufficient numbers of undamaged trees to retain the necessary stocking after doing a commercial first thinning.

After first commercial thinnings, of course, the crown development is sufficient to give most boles shade and by this time, considerable thickening and hardening of bark tissues gives the trees protection from heat.

Since considerable sun scold damage can occur after low pruning on exposed aspects, it is suggested that caution and research is necessary before extending very far into our present proposals of non commercial thinning in conjunction with low pruning of radiata.

It may be a better economical proposition to establish radiata on mediocre soils with intensive fertilising practice to produce a shorter rotation with perhaps the retention of only the high stratum sections for the production of high grade peeler and saw logs.

The selection of undulating country and gentle slopes would seem to be the ideal to aim for in visualising the mechanical form of harvesting that could be applied to short term rotation of radiata.