

Forestry Notes for the month of June 1929.
Tarong District.



Sandalwood, Santalum spp.

A small tree attaining a height of 25 feet, & a diameter at the base of 10-12 inches with a bole 6-8 feet long.

In past years Sandalwood could be found growing almost anywhere outside of the heavy timber lands of the South West, but with the alienation of millions of acres of wheat & grazing lands most of the good Sandalwood within reasonable distance of railway lines has been cut out. Supplies are obtained now mainly from the Eastern Goldfields & Murchison Districts & have to be carted up to 100 miles to the railway line for a further journey of hundreds of miles to Perth & Fremantle.

In the past Sandalwood was exported in large quantities to China & Japan for use in the temples & religious houses & for sticks & incense.

In recent years a valuable industry has built up in the distillation of sandalwood for sandalwood oil. It has been found that the sandalwood grown on the dry inland regions yields more oil than the sandalwood grown in the heavier rainfall belts.

Two types of Sandalwood occur most frequently in this State one, the Northern Sandalwood *Santalum lanceolatum* & the other & most common *Santalum ^{speciosum} ~~speciosum~~ ^{near name} cygnorum* which is confined to the Southern portion of the State.

(2)

Sandalwood is a root parasite i.e. it obtains its food from other plants by means of haustorial attachment or sucking roots. The main & most desired host plants are the many varieties of *Acacia* or low shrubby plants which thrive in the Eastern wheat belt. A single Sandalwood tree may be parasitic on drawing its food from three or four host trees & on the other hand a good large host tree will support several Sandalwood trees of medium size.

Host plants especially the smaller varieties die but after a number of years of starvation & generally the mature Sandalwood trees will be found growing to all appearances without assistance for any time but on investigating into the source of its food supply it will be found that it is parasitic on plants growing some distance away.

Sandalwood does not parasitize on large timber trees to any extent, it prefers the roots of plants which are readily penetrated by the haustoria, some of the most common being the *Acacia* spp. *Eremophila* spp. *Lasianthus* spp., *Grevillea*, *Hakea*, *Cassia*, *Dodonaea* & *Templetonia* spp.

Regeneration

Artificial Regeneration of Sandalwood is confined mainly to the Eastern Goldfields district where large tracts of land unsuitable for wheat farming & yet suitable for planting up with Sandalwood are obtainable.

Due to the low rainfall (average less than 10" per annum) it is hard to get the seed to germinate as it requires a fair amount of moisture to

penetrate the thick woody nut enclosing the seed.

The seeds or nuts are of varying size from $\frac{1}{2}$ inch to $\frac{3}{4}$ inch in diameter. The larger the seed of course the longer will the young seedling be able to live without a host plant & the better will be its chance of finding one.

Artificial regeneration by sowing will be carried out on areas carrying sandalwood so that the conditions most suitable for the growth of the plants will be assured.

Sowing.

In order to obtain the advantage of early rains sowing should be commenced early in January. Owing to the density of the scrub, strips 2 chains wide are marked out & a pair of sowers confined to one strip at a time.

Specification for Sowing.

1. Sowing to be carried out on first class country as shown on assessment plans, but areas to be sown may be squared up provided that the least possible relatively inferior country is included.
2. Seed to be sown only under host plants throwing shade.
3. Seed need not necessarily be sown close to the trunk of the host plant but must be sown well within the shade of the branches.
4. Where several host trees are close together to form a canopy seed may be sown on any portion of the shaded ground. The actual sowing operations are carried out with a small light hoe, seed being carried in a small tin.

(4)

The following specifications are used.

Scrape away leaf litter cultivate spot with hoe about 6 inches in diameter, ~~and~~ place seed in centre of cultivated spot and cover to a depth of 1 inch, firm soil, and scrape back leaf litter.

Injurious Agencies.

(1) Grazing by stock. - on the Goldfields stock rely mainly on the young tops of shrubs etc for their food supply. Sandalwood & its host plants therefore suffer from the effects of grazing. Fencing against stock is carried out wherever necessary.

(2) Rabbits nip off the tops of young Sandalwood as soon as they come up & unless the sandalwood has established ^{itself on} a host plant it means sudden death. & in any case the plant if it did re shoot would develop into a low shrubby tree of no value.

(3) Fire :- Sandalwood is a fire tender species protection against fire (mainly from settlers burning off) must be made.

(4) Man - as the accessible areas have been practically cut over for large trees it only stands to reason that a man to avoid long carting will pull undersized trees often no more than 5 to 6 lbs in weight. As 400 to 500 of such trees are required to produce a ton whereas ~~the~~ it is possible to make up a ton out of between 50 + 120 trees fully grown it is obvious that the pulling of small trees exhausts ultimate supplies from regrowth ~~than~~ much more quickly than

(5)

is necessary.

Classification - An assessment & classification with the object of ascertaining the approximate number of growing sandalwood trees & the extent or amount of good planting country available is carried out where a preliminary reconnaissance shows this to be advisable.

Should fencing of a reserve not be required for some time, a sulky track 6 feet wide is cleared along the boundary of the area, so that patrolling can be carried out efficiently.

Experimental regeneration work is at present being carried out to determine the many problems which confront the forester before he can launch any large planting schemes. Eg. germination of the seed, protection against injurious agencies etc.

In the Namagiri District ^{on the Wickham Water Reserve} a small area of about 5 acres in extent was sown with Sandalwood at the rate of 4 lbs of seed to the acre.

Sowing was carried out in 1928 & on inspection recently it was found that a considerable number had germinated & several nuts that were dug up were showing signs of germination.

J. H. Burnie
Forest Guard
21/7/29.

ABK.