

## Tea Cultivation in South India

By E. A. STONE

Manager, Gajam Mudi Estate, Anamalais.

(Continued from Vol. XXVIII Page 169)

**Nitrogenous Cover crops.** Various plants of the leguminosae family are grown in tea for green manure, and for helping to stop soil erosion. The method of planting adopted is to sow the seed thinly over about  $1\frac{1}{2}$  feet width every other row of tea as soon after pruning as possible. (It is partly for this reason that the branches from pruning tea are usually stacked in every other row, so leaving alternate rows for planting cover crops.) Earth is lightly scratched over the seed with a *kokra*. The best times for planting are in the showery weather preceding and following the heavy monsoon. Species of *Crotalaria*, *Tephrosia Vogelli*, *T. Candida* and species of *Indigofera* are planted. Some *Indigoferas* like *I. endecaphylla* are planted from cuttings and spread over the surface of the ground giving a good protection from erosion in wet weather, but unfortunately they tend to die back entirely in dry weather, so being of no use to stop "dry wash". Some planters claim that on steep cultivated hillsides as much soil is lost in the dry weather by being pushed down by the labourer's feet and slipping of its own accord, as is lost in wet weather by wash. The other varieties mentioned are planted by seed, and being planted after the tea has been pruned, have plenty of room for quick growth. Cover crops of this kind are regularly cut back to about 1' to  $1\frac{1}{2}$ ' from ground level, so producing plenty of loppings for mulching over and covering the ground, and eventually rotting and supplying the ground with more nitrogenous food than has been taken out. (The various processes from fixation of atmospheric nitrogen through to its final oxidisation into nitrates for the use of the leguminous plants by *Nitrosomonas*, *Nitrobacter* and kindred bacteria, will be well-known to my readers). Once the plants are allowed to seed, they become woody and little or no more loppings will be obtainable from them, so they should be lopped when they start flowering, or when they bush out and start interfering with the tea. After about two years from planting the seed the leguminous plants become woody and useless and are rooted out. Anyway, by this time, the tea bushes have grown to a complete cover of the ground.

The dadap tree (*Erythrina lithosperma*) being a legume is also grown for mulch especially on hill tops. It is very hard to get dadaps to grow satisfactorily in old tea especially on the poor soiled hill tops where they are most wanted, and the only satisfactory way is to rear basket plants from seed (in the same way as tea - see 1st. article) and when planting out surround the plants with farm yard manure or compost. Dadaps will grow satisfactorily from cuttings in young clearings, and in sheltered hollows and lower slopes. Rows of dadaps are grown between the *grevillia* rows,

but as the dadap tree gives a dense shade it should be lopped twice a year. Many planters allow the dadap tree to grow up as a single stem to about 8 feet and branch from there. My own view is that the young tree should be pollarded at 4 feet first, taking the next cut at 7 feet and standardising further cuts at 10 feet, lopping off completely all hanging branches and all growth in towards the centre of the tree. In this way dense shade under the centre of the tree is got rid of and an easily climbable sturdy tree able to withstand the monsoon gales is produced, which will produce great quantities of mulch. The dadap unlike tea, thrives on lime, and the condition of sickly trees can be improved by its application.

**Manuring.** In these days of restricted crop not much artificial manure is being used except on the oldest estates. Estates which from their first opening have been carefully looked after and cultivated and soil erosion on them stopped as far as possible, can keep up a steady crop for many years without deterioration. I have not much experience therefore of artificial manures, except that I know that for increasing crop i. e. leaf, nitrogen is necessary, and therefore nitrates are applied. For improving the strength of the bushes and the growth of wood, phosphates are used. But for improving the soil and bushes generally well composted cattle manure, factory rubbish, and jungle loppings are excellent, and very cheaply made if the work is properly organized, and if transport is easy. The first necessity is centralised cattle sheds, the nearer the factory the better. Periodically the factory rubbish can be taken and well mixed with cattle manure and loppings from the jungle (if the jungle is not so far away as to make cost of transport prohibitive) and heaped. The heaps need turning over and re-mixing about once a month, and watering in the dry weather and in 4 or 5 months a well rotted manure with quite a high nitrogen content will be obtained. To be worth making, it must be done cheaply, and this rough process is cheap. Complicated weighings and measurements, and temperature takings increase cost and will not produce a much superior manure. In this way, quite a small estate with 50 to 100 head of cattle on it will be able to produce 300 tons of compost manure annually, which put out and forked in at 10 tons per acre will do a lot to improve 30 acres a year of bad hill top. This compost is especially useful for getting nitrogenous crops to grow in bad soil.

*(To be continued).* 1947.