NEWSLETTER

Number 2 April, 1977

KERALA FOREST RESEARCH INSTITUTE

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ABOUT OURSELVES

It is certainly not our intention to bother you with our Newsletters so frequently. We do not want to make them more frequent than once a quarter. Normally our Newsletters will greet you in March, June, September and December every year. But we may come out with an occasional one, out of the schedule, when timing is the essence of a communication. In view of the ensuing transplanting of Eucalyptus, we felt that the material in this Newsletter should be in your hands now.

Several foresters have welcomed the Newsletter and they have communicated their appreciation. We are greateful to them. It has given us the much needed encouragement. We have also received well meaning suggestions, one of which is that we should supply sturdy folders to keep the Newsletters in one place for reference. We are getting the folders and you will have yours very soon.

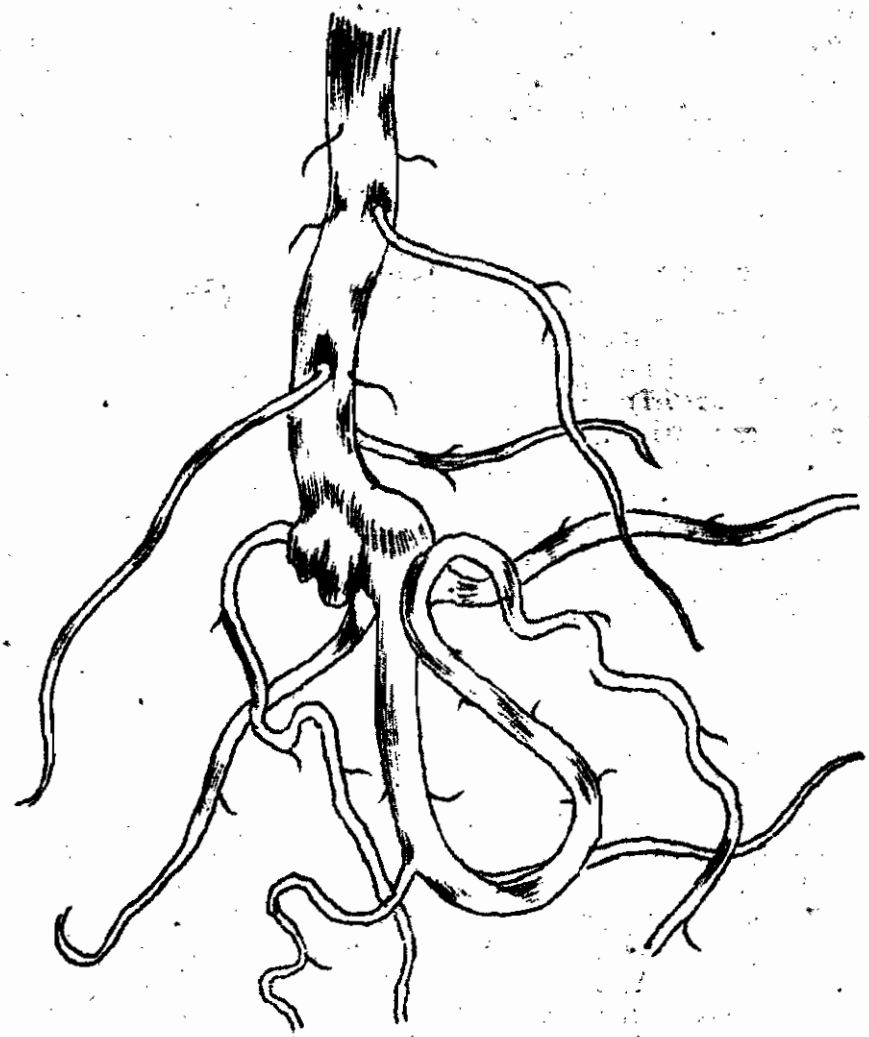
We still do not have a Pathologist with us. The Scientists in the Fungus Investigation Unit are now helping us and their cooperation is gratefully acknowledged. In fact the note on control of fungal disease in Eucalyptus nurseries in this Newsletter is prepared with their help.

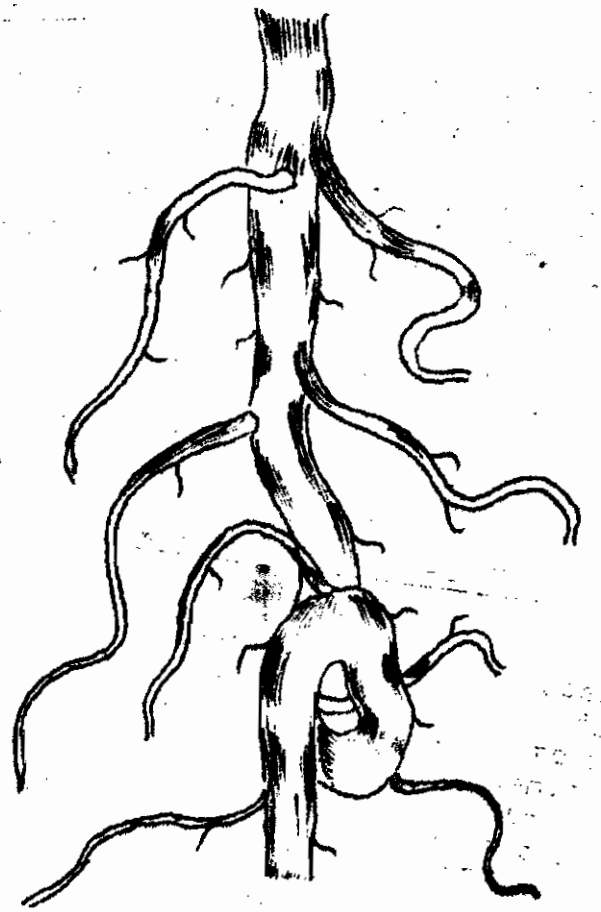
We have, with the approval of the Government of India, just executed an Agreement with the Food and Agriculture Organization for preparation of a Manual on Dipterocarps of South Asia. We feel quite honoured by this international recognition in our infancy. We are indebted to our erstwhile colleague Dr. C. Chandrasekharan for his efforts in getting us this award. If you have any interesting information on Dipterocarps, based on personal observation etc., do let us have the same.

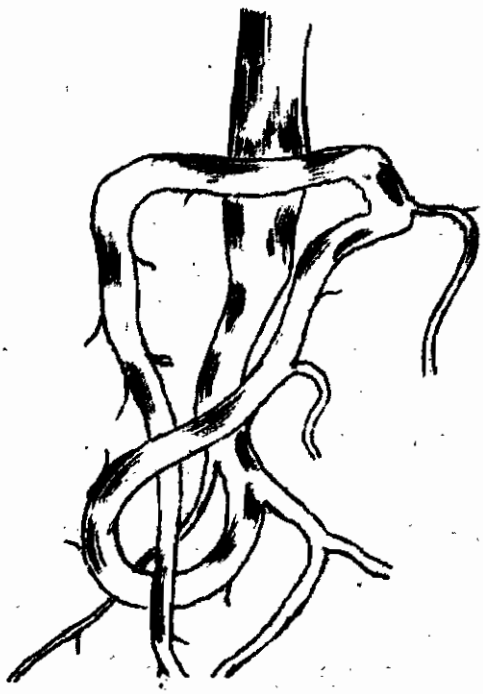
TRANSPLANTING EUCALYPTUS

During our observation trips to Eucalyptus plantations in different parts of the State, we found occasional mortality due to no obvious reason - there was no evidence of termite or fungal attack. Closer examination of such saplings revealed that deaths were due to malformed or choked root system. We have not made a quantitative assessment of death due to this factor, but we found it quite significant in a couple of plantations.

Here are some illustrations of the root system of dead saplings collected from the plantations. The most







common malformations were twirls, sharp bends of the taproot and spiralling of the entire root system. These are due to forcing the long roots of a larger than normal seedling into a small hole in the container or unintended bending of tap root while transplanting.

There are two adverse effects of malformed root system:

(1) Mortality in the sapling stage due to disturbance of the normal translocation process.

(2) Wind damage at later stage due to inadequate anchorage by the malformed root system.

Extensive work on the effect of planting method on root development has been done elsewhere in the world. Some writers have recommended pruning of the root system before transplanting into the container. We hope to initiate studies on the type and size of container, optimal age and size of seedling to be transplanted into the container, method of transplanting, optimal period of growth in the container etc., in the near future. Till we complete our investigations and come up with firm recommendations, we suggest the following precautions:

1. Avoid transplanting large seedlings into the containers. With larger seedlings, the chances of developing a malformed rootsystem are more.

2. Ensure that the hole made in the container soil at the time of transplanting is sufficiently wide and deep.

3. Let not the taproot be bent.

4. Let the hole be parallel to the wall of the container and let it be straight.

Let us avoid root degeneration during growth of the seedling in the polythene bag as much as possible and give the seedlings a fair chance for survival. It needs just extra care, not extra cost!

FUNGAL DISEASES IN EUCALYPTUS NURSERIES

Failures, often leading to large scale losses, have been reported in Eucalyptus nurseries. The causative factor has been identified as fungi. Mainly two types of fungal diseases have been noticed. The first is 'damping off' which, in some cases, wipes out the entire nursery in a short period. The second is 'seedling blight'.

Damping off: Several fungi cause damping off, the more important of them being Pythium, Phytophthora, Fusarium and Rhizoctonia. The disease caused by these fungi may affect the seeds in the seed beds or the seedlings. Poor germination of seeds is often the result of damping off, the infected seeds becoming soft and mushy leading to disintegration. In the seedling stage, initial infection appears as a somewhat darkened, water-soaked spot in the stem at or below the soil level. The infected area enlarges rapidly, the invaded tissues collapse and the seedling dies.

Seedling blight: The disease is caused by cylindrocladium quinqueseptatum and affects the seedlings. The first signs of the disease are the appearance of small brown spots on the tender leaves and stem. These spots enlarge rapidly and cause death of the seedlings.

Control measures

The following general precautionary measures will lessen the chances of incidence of fungal diseases:

1) Do not mix wood ash to the nursery soil. (This would neutralize soil acidity, which would have inhibited growth of damping off fungi).
2) Control the frequency of watering to avoid persistence of excessive moisture.
3) Ensure good ventilation.

If the symptoms of fungal diseases are noticed or if the area is known to be prone to fungal diseases (by past incidence of attacks) the following fungicidal treatments are recommended.

1. To control 'damping off' before germination

To 1 kg of seeds, add half a level teaspoon (about 2g) of the fungicide dust, Thiride or Captan. Mix well in order to ensure a good dressing of seeds with the fungicide.

2. To control 'damping off' or 'seedling blight' of seedlings

Apply a fungicide spray at fortnightly intervals. Use either Thiride or Captan. Mix about 2 heaped teaspoonful of the dust per 5 litre of water in an ordinary sprayer. Spray the plants to the point of dripping. To prevent washing away of the fungicide, avoid watering for about 24 hours after the fungicide application.

AN APPEAL

We have identified some problems of practical value to be tackled by the Institute. One of them is to standardize the plantation techniques of important indigenous fast growing species like *Gmelina arborea*, *Acrocarpus fraxinifolius*, *Anthocephalus cadamba* and *Melia composita*. We want to locate plus trees of the above species in different localities in the State, and collect seeds to carry-out provenance trials etc. With our limited staff, it is impossible to go everywhere and locate the trees. For this, we require your help and cooperation. We request you to kindly locate good stands of the above species. Once the stands are located, we can come over there and select the plus trees.

As the trials have to commence during this season, the trees for seed collection have to be located as early as possible. We are confident that with your help and cooperation we will be able to start the experiments during this season itself.

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