by

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The writer was able to attend the Working Group Meeting on Forest Pathology in Canberra and to visit the diseased areas of east Gippsland during August, 1970. This is a brief report of the current P. cinnamomi situation in the Eastern States of Australia.

Evidence presented by pathologists at the meeting indicates that P. cinnamomi has been recovered from forest areas in all States, but that it has not been recorded from the Northern Territory or the Territory of Papua and New Guinea. The fungus is associated with the deaths of E. sieberi, E. muelleri and E. scabra in Victoria, E. saligna and E. sieberi in N.S.W., E. obliqua and E. regnans in Tasmania, as well as occasional deaths of eucalypts and understorey plants elsewhere in eastern and southern Australia. In most of these areas, mortality of eucalypts has been recorded previously, but had not been associated with P. cinnamomi until recently. The areas involved vary from tens to thousands of acres. In a number of cases, death of the associated understorey species is not as prevalent as in Western Australia.

This pathogen has also been associated with death of pines either in shelterbelts or in plantations in W.A., Victoria, N.S.W., S.A., Tasmania, Queensland and the A.C.T. For a number of years, P. cinnamomi has been causing losses in horticultural and nursery stock in eastern Australia.

Though this survey work is important and should be continued, it is but a preliminary step to the evaluation of the threat that this pathogen poses to the native hardwood and exotic conifer forests of Australia. At present, lack of suitable information makes this assessment difficult. Diseases with which fungi like P. cinnamomi are associated are rarely simple Host, Pathogen, Enviroment inter-relationships. Severity of the disease is dependent on the susceptibility of the host and the "inoculum potential" of the pathogen, but also upon many other interacting factors involving the enviroment and often other organisms.

The main recommendations of the working group were as follows:–

1. That work be directed to the study of the inter-relationship between P. cinnamomi, its hosts and factors of the enviroment. This work would benefit from co-operation with other specialist branches within the forest services.

2. That the illustrated bulletin on Jarrah Dieback being prepared by the Forests Department of W.A. be given wide distribution in Australia, especially to foresters.

3. In areas where P. cinnamomi does not appear to be widespread, forest nursery hygiene and the use of disease-free planting material are important in preventing the spread of the fungus.

4. That careful consideration be given by the T.P.N.G. to the possibility of excluding that type of plant material, including horticultural, which might be a possible carrier of P. cinnamomi.

The most extensive occurrences of dieback in Eastern Australia are located in east Gippsland and are centred around the town of Nowa Nowa 213 miles east of Melbourne. Since 1969, P. cinnamomi has frequently been recovered from diseased forest areas. The commonest eucalypts in this area are E. sieberi (silvertop ash), E. muelleri (yellow stringybark), and E. scabra (white stringybark). Other eucalypts observed in these mixed species forest were E. cephalocarpa (mountain grey gum), E. paniculata (grey ironbark), E. botryoides (bangalay), E. bridgesiana (apple gum), E. sideroxylon (red ironbark), E. bosistoana (grey box) and E. maculosa (red spotted gum).

The disease is quite widespread in medium to low quality forest in the coastal belt between Bruthen and Orbost. Dead trees may occur singly, in small groups or in distinct patches of considerable size. It is estimated by some foresters that about 1,000 acres have been severely affected and that about 10,000 acres are affected to some degree.

In the three main sites which were visited, the soils were podsols and consisted of a grey sandy loam over clay at very shallow depth. Drainage is impeded and the sites are very susceptible to waterlogging. In all areas, the understorey of sedges, grasses, wattles, tea trees and swamp paperbark closely resembled "graveyard" areas in the northern jarrah forest or parts of the Nannup Sunklands and Shannon River flats. Within the affected areas, E. sieberi, E. muelleri and E. scabra appear to be quite susceptible whereas E. botryoides, E. cephalocarpa, E. maculosa and E. sideroxylon display a considerable degree of field resistance. It is unfortunate that the susceptible species are the more desirable from the production viewpoint.

Parts of these badly affected areas are regenerating to susceptible species – particularly E. sieberi. Though a number of saplings and poles have become established on these sites, the areas are very poorly stocked. Recently dead poles and saplings were observed in all three sites and it is very doubtful whether successful revegetation of these areas will, in fact, occur.

In this portion of East Gippsland, Banksia species are a relatively minor component of the understorey. Most of the dense stands of Banksia were situated on deep and well drained sands. Very few dead Banksias were observed and this is a striking contrast to the occurrences of P. cinnamomi in the northern jarrah forests of this State.

P. cinnamomi is causing a steadily increasing forest disease problem in the Eastern States of Australia. To date, the disease has generally developed in areas which have been regarded as of low productivity and importance. This situation becomes appreciably more serious when it is realised that these very areas have been earmarked for large-scale chipwood production. In fact, the Eden Chip project is relying to a large extent on produce from the mixed species forests of Eastern Gippsland.