



AIR POLLUTION

Importance. - Chemical discharges into the atmosphere have increased dramatically during this century, but the total effect on forest tree crops is virtually unknown. It has been demonstrated that air pollutants can cause mortality and losses in growth of forest trees. Nearly all species of deciduous and coniferous trees are sensitive to some pollutants.

Identifying the Cause. - There are many chemicals released into the atmosphere singly and as compounds. In addition, other compounds are synthesized in the atmosphere. Some chemicals can be identified through leaf tissue analysis, while others can be detected by analyzing the air itself. Identifying the single chemical or chemicals that are the cause of tree damage in a polluted environment can be extremely difficult and should be left to one trained in this field.

Identifying the Injury. - Generally, pollution injury first appears as leaf injury. Spots between the veins, leaf margin discoloration, and tip burns are common. These symptoms can also be influenced by host sensitivity, which is effected by genetic characteristics and environmental factors. Symptoms similar to those caused by air pollution, but resulting from nutritional deficiencies, drought, and other stresses, are often confused with pollution injury.



Air pollution damage to white pine.

Biology. - Many of the materials, such as sulfur dioxide, form acids inside leaves after they enter through the stomata. Others may enter the leaf tissue directly.

Control. - The best control is limiting atmospheric pollutants. Since this is difficult for the individual to do, the use of resistant plants is a practical alternative. Maintaining existing trees in a healthy condition will afford them some protection from air pollution damage.
