truction by fire, unless it can be eradicated or held in check.

This disease is caused by a fungus. The fungus attacks the living bark, causing death by girdling. All 5-needled pines are susceptible, all other kinds so far as is known are immune. The disease continues from year to year in an infected tree, but cannot spread from one tree to another. The fungus also causes a leaf disease of Ribes (currants and gooseberries). All species of Ribes are susceptible, but some, such as the cultivated black, and the red currants, more so than others. The disease spreads rapidly from Ribes to Ribes by means of spores, wind or animal-borne, but with the falling of the leaves at the end of the season, the affected plants are free from it and can be infected again only from rusted pines. It also spreads by spores from Ribes to 5-needled pines, and this is the vital feature with respect to the disease on the pine. This relationship was discovered in 1892. The dependence of the fungus on these two hosts is so complete, that without both its existence is impossible. Observations and tests so far made have shown that under natural conditions there is probably little likelihood of the disease passing from one host to another if they are separated by a distance of one-third of a mile.

Origin in Siberia

The history of this disease is both interesting and instructive. Its home is in Siberia and the Ural Mts., and its natural host is the stone pine of Europe and Siberia—*Pinus cembra*. Two hundred years ago our white pine was introduced into Europe and planted there extensively, for ornamental purposes and in some cases as a commercial forest proposition. About fifty years ago it was observed that the rust on Pinus cembra had spread westward and had attacked the imported white pines, and that, as so often happens, it was more virulent on the new host than on its own natural host. Now follows the story of its introduction into the western hemisphere. A little more than 15 years ago a planting movement gained great impetus in America, and the cry was—"Plant white pine." The American nurseries were unable to supply the sudden demand for pine seedlings, and because of the greater cost of production made no effort to compete with the established European nurserymen. The result was that vast quantities were imported from Europe and with little or no question as to the health of the stock. Up to 1909 nearly 5,000,000 seedlings had been imported, about 95% of this from Germany, and distributed to hundreds of localities in the U.S. and Ontario. In 1909 it was discovered that large numbers of the shipments of that year were diseased. Then the door was closed. Examination proved that the 1908 shipments had been bad, too, and there is good reason to believe that diseased stock reached our shores even earlier than 1908. The suspected plantations that could be located were destroyed, but the records did not reveal the whereabouts of all of them, so that we have waited with fear and trembling, though with some hope that the danger had been averted. Three years ago, however, the blow fell, and reports from Ontario and a dozen states announced more or less serious outbreaks. Consternation has reigned, but state, provincial and federal governments have lost no time in determining the extent of the affected areas and in attempting some control or eradication measures. Massachusetts, New York and southern Ontario are known to be especially hard hit. As yet our great northern pine forests are scarcely reached; but it is unescapable that they are in imminent danger of widespread infection.

Infections have been reported from: Ontario and Quebec; Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Ohio, Indiana, Michigan, Wisconsin, Minnesota, and South Dakota.

To be Concluded in June Issue