New Disease Threatens Great Tree Crop

Phytopathology

Already depleted to a dangerous extent by indiscriminate lumbering methods and by forest fires, the timber supply of this country today faces a new menace in the form of a fungus disease, similar to chestnut blight, which has been discovered recently by the U. S. Department of Agriculture in two New England States.

Larch canker, as the disease is called, is characterized by Dr. Haven Metcalf, in charge of the Office of Forest Pathology, as "far and away the most potentially serious tree disease that has ever struck the United States." He described it, briefly, as "a parasitic fungus, well fixed to spread."

"Its danger," he states, "lies not in the fact that it is killing off larch trees, which are not commercially important, but that it attacks also the mighty Douglas fir and the yellow pine, the two most important timber trees in North America."

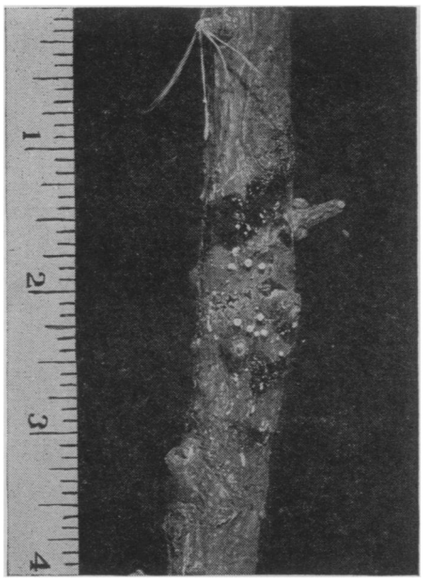
According to the Forest Service, the combined stands of these two trees represent, roughly, 854,000,000,000 board feet, valued at approximately $3,150,000,000. The Douglas fir alone covers more than 35,000,000 acres, one-fourth of the entire stand of soft timber. Twenty-five million acres are in the West and an additional 10,000,000 are in the Rocky Mountain section. These two forest areas are said to contain 596,000,000,000 board feet and to be worth $1,600,000,000.

Even a larger area is covered by the yellow pine. It occupies approximately 115,000,000 acres and represents 258,000,000,000 board feet, valued at $1,550,000,000.

Three thousand infected trees have been found in Massachusetts and one hundred in Rhode Island. The species attacked are the European, Japanese and American larch, or tamarack, the Douglas fir and the yellow pine.

Like chestnut blight, which was brought to this country on young trees imported from Japan, larch canker is a foreign disease, brought to this country on seedlings from Great Britain before the enactment of the Plant Quarantine Law.

Dr. Metcalf believes that it may have been here for ten years. The fungus does not differ, superficially, from less dangerous varieties and might easily have escaped detection. In Europe it has been known for about one hundred years and has been rather extensively studied. On larches it kills slowly, mutilating the tree and spoiling it for timber.



Typical canker spots on the twig of a diseased larch

In Europe, however, the disease has not attacked the Douglas fir, which is a native American species, so no precedent exists for knowing what its effect here will be. Nor is it known how rapidly the disease spreads. Larch canker is so widespread in Europe that there is no basis upon which pathologists can estimate how fast it has spread since it started.

The new disease spreads in a fashion identical with chestnut blight. Tiny spores, the reproductive bodies of the fungus, are blown by the wind and carried by water, insects, and birds from one tree to another. They lodge in the bark, where the canker starts. As the ugly growth penetrates the trunk of the pine or fir, a stream of pitch oozes out and spills down the side of the tree, leaving a whitish blotch.

It is a good three thousand miles from New England to the Douglas fir region on the Pacific Coast, but Dr. Metcalf declares that it would be a comparatively simple matter for the disease to reach that section should it get out of hand now. The larches form a veritable bridge across the North, upon which it could cross.

Northward, the larch forest ranges from Davis Strait to Alaska and the Yukon, in a continuous wide belt. From Davis Strait it extends southward, down the Atlantic seaboard, as far as Pennsylvania, Ohio and Illinois. It takes in the entire region of the Great Lakes, skirting Hudson Bay to the north, and covers parts of Iowa, Minnesota and North Dakota. At North Dakota the belt swings up into Canada toward the great stretches of the Yukon. And near British Columbia the Douglas fir and tamarack forests interlace.

All available weapons are being mobilized for combat. Burning out all trees known to be infected is considered the best method of control. Treating individual trees would not be worth while, Dr. Metcalf explains, because, even if a spray were discovered capable of saving them, it would prove a useless tool once a serious inroad started. The area menaced is too vast.

Forest rangers throughout the country have been notified to be on constant lookout for diseased trees and Dr. Metcalf is conducting a thorough investigation of the nature of the canker. Special studies are now being made in branch laboratories of the Department of Agriculture at Amherst, Massachusetts, and at Providence, Rhode Island.

A serious difficulty complicating the problem is political, occasioned by the fact that the tamarack "bridge" crosses the border at North Dakota into Canada, meeting the Douglas fir forest on the Canadian side. This species, so important in the United States, does not grow extensively in Canada and, since the larch is of little value, it may not be possible to secure the active cooperation of Canadian officials in the efforts of this country to prevent infection of the western preserves.

Another difficulty lies in the fact that the disease is not readily diagnosed by the layman. Unless it is in a typical form, larch canker is not easily differentiated from other fungi, though an average boy, given one day's instruction, can recognize it in nine cases out of ten.

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