

RESURVEY FOR EUROPEAN LARCH CANCKER  
IN THE UNITED STATES

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A resurvey for European larch canker was initiated in September 1952, with funds provided by the Forest Pest Control Act. This survey is being conducted to determine the effectiveness of previous attempts to eradicate the introduced European larch canker, and to serve as a guide to the continuation of an eradication program. In the present survey it has been established that a few cankers were not found in the earlier surveys and that a few new cankers have developed in the intervening years.

The first discovery in America of European larch canker, caused by the fungus Dasyscypha willkommii, was made in 1927 in Essex County, Massachusetts, on European larch trees (5). In this area many cankers were found on European larch (Larix decidua) and a few were found on Japanese larch (L. leptolepis). These larches had been imported as nursery stock from Great Britain early in the present century. This forest-tree disease has been well known in Europe for many years. It produces destructive trunk and branch cankers and is prevalent in larch plantations in the lowlands of western Europe.

Incipient infections appear as slight depressions in the bark of the stem or branch. On the trunk these depressions may develop until they take the form of a bowl-like cavity. The bark at the edge of cankers frequently cracks and often there is a copious resin flow from the area. The bark falls away on older cankers, exposing the wood. The cup-shaped, whitish fruiting bodies of the fungus commonly develop near the edge of the cankers. These are most conspicuous in wet weather when they expand into saucer-shaped structures of about 1/8 to 1/4 inch in diameter (1).

Following the discovery of European larch canker in Massachusetts in 1927, a search for the disease was made in many exotic larch plantations as far west as the Lake States, but no other infection areas were located. The last of these earlier surveys for European larch canker terminated in 1938, by which time more than 3700 diseased introduced and planted larch in the Massachusetts area had been removed and destroyed by burning. The disease was not found on our native American larch or tamarack (L. laricina) in the area of infection, which is in the border line of the range of this species.

Previous to the discovery of the introduction of Dasyscypha willkommii into the United States, closely related Dasyscyphae were known to be distributed throughout North America as harmless saprophytes. Accordingly it became imperative that the introduced canker pathogen be differentiated from our native fungi. An intensive laboratory investigation carried on at the time at the New Haven, Connecticut, field laboratory of the Division of Forest Pathology, demonstrated that the parasitic D. willkommii was morphologically and physiologically distinct from all other related Dasyscyphae in our northern hemisphere and that from a pathological standpoint the latter were unimportant. These investigations, which supplemented the survey and eradication program, also clarified the exact distribution of the European canker organism in this country (2, 3, 4).

In the present surveys, following a 14-year period in which no surveys were made, abundant fructifications of the foreign parasite have been found on old and new cankers on a very few European larch that had escaped the early eradication program. New infections of D. willkommii were also found on small branches of three additional European larch. The infected trees were promptly cut and destroyed. All cankers collected by the survey crew were submitted for identification to the laboratory at New Haven where they were cultured and determined by Dr. G. G. Hahn.

Our native western larch (L. occidentalis) is reported to be very susceptible to European larch canker when planted in Europe. There the principal damage to larch in plantations is caused by the distortion and weakening of cankered branches and trunks, predisposing them to snow- or wind-break. Control of the disease on European larch in Europe is a silvicultural problem, for larch planted on favorable sites not subject to recurring frost damage maintain their vigor and are not seriously injured by this disease. Native larch in the United States, both in the East and West, often occur on sites considered below the optimum for best growth.

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There is accordingly the probability that these may be severely affected should the larch-canker organism become established in our native larch stands.

Surveying for larch canker is a difficult and tedious task. Incipient cankers are not only small but may occur on the upper side of branches of large trees, and it is impossible to detect them from below. To make sure that cankers of this type are not present, it is necessary to climb trees and scrutinize all branches carefully. Such a survey is now under way in Essex County, Massachusetts. European larch plantations in other sections of the State and in other States, as well as tamarack in the canker-introduction area, must also be inspected to insure complete eradication.

The presence of *Dasyscypha willkommii* on only three newly infected European larch among thousands recently inspected in the Massachusetts area, indicates a high degree of success in previous attempts to arrest the spread of this foreign disease. This fact lends encouragement to the belief that European larch canker may be prevented from spreading to our planted and native larch stands.

#### Literature Cited

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