

# The Canadian Horticulturist

Vol. XXXV

JANUARY, 1912

No. 1

## Peach Diseases in Ontario\*

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EVERY peach grower is familiar with the leaf curl disease, and knows that it attacks the leaves early in the spring and causes the mat first to become thickened, curled and distorted and of a pale whitish or often reddish color, and later on to become brown and dead and fall off. It is, next to Yellows and Little Peach, the most destructive disease that growers have to combat. The loss takes the following forms: First, In seasons of severe attack many young nursery trees are killed the first year they are set out and before they have had a chance to get over the shock of transplanting; second, there is a great drain on the vitality of older trees from the loss often of a large part of their foliage early in the season and the necessity of producing a new crop of leaves. Such trees are frequently not properly matured for winter and are sometimes killed by the cold. Trees severely attacked two or three years in succession not infrequently die, or at least lose a number of their branches; third, the fruit is dwarfed and often in bad cases drops off. This is to be expected from the fact that the substances that make the fruit are largely manufactured in the leaves; hence this source of supply is cut off for a considerable period by the disease;

\*Extract from a paper read at the recent annual convention of the Ontario Fruit Growers' Association, held in Toronto.

fourth, the disease often attacks young shoots or twigs and kills these.

### FAVORABLE CONDITIONS

Leaf Curl is well known not to be so severe some years as others. Experience has shown that it is favored by damp late springs, while it is almost completely kept in check by dry sunny weather around the time of blooming, and while the leaves are still quite small. In 1910 the spring was very late, cold and wet, and so the disease was exceptionally severe. Last year, 1911, the spring was early and we had beautiful, hot, sunny, dry weather, with the result that there was no Leaf Curl or almost none. This fact has led some to believe that Leaf Curl is not a disease, but is merely the result of unfavorable weather conditions. Such, however, is not the case, as anyone can easily prove who takes a glance through a microscope at one of the dead leaves from an affected tree and sees the millions of spores on the surface. These spores act like seeds and are carried by the wind from tree to tree and orchard to orchard, but so far as we know do not germinate until the next year. For their germination and growth plenty of moisture is necessary, hence the wet seasons favor their growth; moreover, cold does not interfere with their development, while it retards the vigor of the leaves.

A number of years ago we were told that spraying would not control the disease because it was then believed that it passed the winter only in diseased twigs, but we now know from thousands of experimenters that even in the most favorable seasons for the disease we can keep it under thorough control by a single application.

### MEANS OF CONTROL

Spray with lime-sulphur of the ordinary strength as for San Jose Scale (one gallon commercial wash diluted to about ten with water). This application must be made early in the spring and before the buds have begun to swell. The disease begins with the growing bud, so to prevent its getting a start we must spray early before the spores around the buds can germinate. Most of the failures to control the Leaf Curl are due to spraying too late and not taking sufficient pains to see that every bud is thoroughly covered. Bordeaux would also control the disease, but is not recommended because in most peach districts San Jose Scale is either present or likely to be introduced and the lime-sulphur will keep it in check, while Bordeaux will not.

### MILDEW

The Powdery Mildew (*Sphaerotheca pannosa*, Wallr.) disease is found chiefly on young trees not yet in bearing, but



Some of the High Grade Fruit Grown in the Province of Quebec as shown at recent Annual Convention of the Provincial Fruit Growers' Association, held at Macdonald College