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## The Apple Scab--How the Fungus Spreads\*

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**A**PPLE scab, or Fungus as it is sometimes called, is by far the most destructive apple disease found in Ontario. It occurs in every part of the province where the apple grows. It is not the same disease as the Pear Scab, so common on Flemish Beauty and some other varieties of pears, but is very closely related. Its presence is of course most familiar to us in the form of the black spots on the fruit, the skin of the apple always being destroyed beneath these spots.

It attacks the leaves just about as readily as the fruit. This fact is perhaps not so well known to fruit growers. On the leaves it causes at first small nearly circular areas about one-fourth of an inch in diameter, and of an olive color. After a while the affected parts often become somewhat elevated making the surface of the leaf irregular or more or less crinkled. Before long these spots die. Sometimes there are numerous spots on the leaves. I have seen leaves of crab apple trees so badly attacked on blade and petiole or stem that most of them fall off by about the first of July.

\*Extract from an address delivered at the recent annual convention of the Ontario Fruit Growers' Association.

A fresh set soon took their place. Occasionally but not ordinarily the tender twigs themselves are attacked.

### LOSS CAUSED BY THE DISEASE

Loss comes in the following ways:

First: Scabby fruit must be rejected, as culls at any rate can never go as number one.

Second: In moist warm autumns the scabby areas on apples in a barrel will soon become attacked by a whitish or pinkish mould, known as pink rot. This makes the apple not only unsightly but unmarketable. Greenings are especially subject to the rot. Even apart from this disease scabby apples will not keep so well as clean apples.

Third: The scab fungus commonly attacks the stems of the fruit while it is still small and causes large numbers to fall. Sometimes it is evidently in a large degree responsible for the failure of a crop.

Fourth: By attacking the leaves and killing areas on these it not only interferes with the power of a tree to manufacture food (the food of a tree is manufactured chiefly in the green leaves) but also permits spray injury around the areas where the protecting skin has

been destroyed. Consequently the vigor of a tree may be greatly lessened by these combined injuries to the leaves. The following year the chances of a good crop are, therefore, greatly lessened through the failure of a tree to form fruit buds. This is one of the reasons why well sprayed orchards regularly yield larger crops than unsprayed and are healthier unless injured by over cultivation or over fertilizing and consequent winter injury.

### LIFE HISTORY OF THE FUNGUS

The fungus which causes apple scab is a very small microscopic plant which unlike green plants cannot manufacture its own food but feeds entirely upon other plants, or in other words is a parasite. It passes the winter almost entirely upon the old diseased dead leaves on the ground beneath the tree or wherever they may be blown by the wind. Occasionally it may also winter on the twigs. In the spring, about the time the leaves are expanding, the diseased spots on the dead leaves by a peculiar device begin to shoot out into the air in moist weather tiny little spores which are carried by the wind especially to the lower leaves.

These spores correspond to seeds, and



A Portion of an Eighty-Acre Orchard in the Trenton District of Ontario

The possibilities of the North Shore of Lake Ontario as an apple producing section are only beginning to become recognized. This orchard, owned by W. A. Fraser, Trenton, Ont., contains 4,200 trees, the oldest of which were planted four years ago. In time this will be one of the great apple districts of the continent.