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## APPLE GROWING NORTH OF LAKE ONTARIO

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**The Opportunities are Excellent—Suggestions for Bettering the Industry Based on Prevailing Conditions and Bad Practices.**

THE counties from Halton to Hastings, bordering on Lake Ontario, are particularly well situated for the growing of winter apples. The business has been very profitable for a number of years, and many new orchards are being planted. Indeed, it is doubtful whether any other district of equal size has so many young orchards.

Unfortunately, with the multiplication of orchards has come the increase in orchard pests. Insects that were unknown, or that did little damage a few years ago, have become a serious menace to apple growing. The older orchards have given such good returns, and with so little labor, that apparently the owners did not need in former years to take much pains to combat these enemies. At the present time, at least fifteen per cent. of the older trees are dead or dying from causes which appear somewhat mysterious to the owners. Even the young orchard are defoliated, and are, therefore, stunted, with little attempt on the part of the owners to improve conditions. I visited many of these orchards recently, and found conditions exceedingly serious. The death of the older trees may be attributed to three or four causes, usually working in combination,



An "Old Timer" at Wicklow, Ont.

Trees forty feet apart, many of them forty feet high, and interlacing between rows. The difficulties of spraying such an orchard are apparent.

chief of which are winter killing, imperfect drainage, oyster-shell bark-louse, collar rot, and other forms of canker.

### WINTER KILLING

Winter killing was quite common. Many of the older men said this was impossible, as they remembered winters much colder than any we have had lately, and the trees stood it all right; nevertheless, winter killing is doing a great deal

of damage among the orchards of this district.

That it should be more prevalent now than formerly must be attributed, in part to the adoption of clean culture, which is only one feature of what is really a much improved system of orchard practice. Formerly it was extremely rare to see an orchard not in sod. Recently cultivation has become the fashion, and the sod has been turned down in many an old orchard. The result is to be seen in the large number of winter-killed trees. The sod checked the growth early in the season, and thoroughly protected the roots, and thus prevent winter-killing. The clean culture not only exposed the roots, but induced a late and succulent growth of tissue in root and stem, that was more tender than that grown in sod. These orchardists made no mistake in cultivating their orchards. Most of them, however, have made a mistake in beginning the cultivation too late in the season. Many of them did not begin until the first and second week in June to plow their orchards, and these orchards were kept well cultivated throughout the summer. What should have been done was to work the orchards as early in the spring as possible, and cultivation should be stopped by the end of June, or not later than the middle of July, except in special cases. The protection which had been furnished to the roots by sod should be given in the form of a cover crop. Indeed, the two things, clean culture and cover crop, should invariably go together. Even without the cover crop, and making due allowance for winter-killing, clean culture has been a very great advantage. But all the advantages of the sod protection, and the increased vigor induced by cultivation, are secured by uniting the two, clean culture and cover crop.

### UNDER-DRAINAGE

In the management of the soil of the orchard it is regrettable that so little under-draining is done. Many orchards are suffering severely for want of drainage, and it is noticeable that an undue proportion of the dead trees are to be found in the lowest portions of the orchard. It will take a great deal of missionary work to persuade many of the farmers that the best investment that they can make in their orchards is tile draining, except it may be a spray pump.

### SPRAYING

Many of the farmers have made a commencement of spraying, but very few of them perform the operation intelligently. In the younger orchards there are two insects which cause very serious damage, namely, the bud moth and the cigar case bearer. I did not see a single young orchard that had been sprayed so as to destroy these two insects. The poisoned Bordeaux mixture should have been applied as soon as the leaf buds had begun to swell, and show the slightest portion of green, or even before this. In no part of Canada that I have visited did I

find the cigar case bearer and the bud moth worse than here. Many of the orchardists were only giving their first spraying on the 18th of June. It is needless to say that these men will be disappointed in their results. It will, indeed, do some good, but the injury from insects and



An Old Orchard in Colborne, Ont.

Picturesque, but not profitable. Many orchards of this nature are to be found in Ontario. They should be pruned close to the ground.

fungous diseases will usually be so great that many of the orchardists will be inclined to think that spraying is scarcely worth the trouble.

### OYSTER-SHELL BARK-LOUSE

The oyster-shell bark-louse is responsible for the death of some of the trees, at least. Nevertheless, it is noticeable that the bark-louse is worse upon trees, the vitality of which has been lowered by other causes, such as want of drainage, winter injuries or canker. It is asserted by many that the lime treatment alone is not effective. Others have tried a solution of concentrated lye. In no case has it appeared that these treatments are sufficient alone. A few have sprayed with kerosene emulsion while the insects were running; but even this has not proved successful. Many have been experimenting with patent miscible oils, also without success. None, however, as far as I can learn, have tried the lime and sulphur mixture, and apparently this is the last resort.

### MISTAKES IN PRUNING

A large number of the old orchards in this district are rapidly degenerating. Many, as the result of too little pruning, have grown long and straggling, interlacing at the tips, and with no bearing wood towards the centre of the tree. Having this form it is impossible to spray economically, not only on account of the height of the bearing wood, but because the interlacing branches prevent the spraying apparatus from passing easily from tree to tree.

### RENOVATING OLD ORCHARDS

The question is frequently asked whether these old orchards can be renovated. In many cases