



Young Trees Girdled by Rabbits

Photo by R. S. Duncan, B.S.A., Port Hope, Ont.
like seeds they cannot germinate unless they get an abundance of moisture; hence if the days are bright and sunny they will not grow but if rain falls and does not dry off for about twelve or eighteen hours they will germinate, and begin to enter the leaves. Once the germ tube has worked through the skin of the leaf it grows rapidly and forms many little threads or rootlets as we may call them. From these in a few days a host of little threads burst up through the skin and keep producing on their tips crops of countless spores. These are constantly being blown by the wind from leaf to leaf and everywhere throughout the orchard, and get also on the stems of the young fruits, and on the fruits themselves. Here, again, if given sufficient moisture, they will germinate and produce scabby areas on all these places.

It is while the fruit and leaves are still small that the fungus spreads most. Once the fruit is three quarters of an inch in size it is not nearly so subject to attack. This is probably due to two reasons: First, the skin has been growing thicker and so is more difficult for the fungus to penetrate. Second, the weather is warmer and brighter, the nights are shorter and so there is seldom a sufficiently prolonged period of moisture for the spores to germinate. As to the time necessary for this, I have had them in the laboratory at a temperature of about sixty degrees F. germinate in between twelve and eighteen hours; at about fifty degrees they were a little longer, and outside at a temperature varying from a

little below freezing to forty degrees F. they had just begun to germinate in forty-eight hours.

It is probable that the germ tube soon enters the apple after beginning to grow. Once it enters it cannot be killed by any spray, hence spraying is to cover leaves and fruit and prevent spores from germinating. From about the middle or end of June until the last week in August there is seldom any noticeable increase in the amount of scab, but with the return of longer nights and lower temperatures, if there is an abundance of continuous wet or foggy weather, as happened in the fall of 1912, we may look for a fresh outbreak of the disease, and should spray to prevent it. The inky spot or sooty fungus of the fruit is also favored by this kind of weather. Leaves are apparently even more subject to this late attack than the fruit and hence there are always plenty of these diseased to carry the fungus through the winter.

Methods of Cultivation

E. S. Archibald, Wolfville, N. S.

My experience with a part of my orchard for six or seven years in sod is that it gave returns both in quantity and quality equal to any other parts of the orchard of same variety of trees (Gravensteins.) I applied the same kinds and quantities of fertilizers as to the part of the orchard that was cultivated, and whatever grew on the ground I mowed and left as a mulch. I am strongly inclined to put one-half of the older orchard under this treatment from now on and test it as against that of annual cultivation and cover crop.

My feeling is that with heavy clay land not well drained it would not be good but with dry, gravelly or sandy land it might be better than our present method. The mowing of grass or weeds and application of fertilizer will keep a mulch that seems to suit the trees all right. I am not writing as an authority on this matter but have noted for many years trees that have no cultivation (in orchards not my own) and found them doing as well and sometimes better than where cultivation was thorough. Of course fertilizers of some kinds were annually applied.

I would not dare recommend sod culture as a general practice throughout the Annapolis Valley, for many farmers would rake up the grass mown and haul it to the barn for winter feed without putting anything back for mulch. I notice an up-to-date neighbor orchardist is treating his old orchard by alternate plowing and clover. That is, one side of the trees growing clover and the other side cultivated and clover sown for the next year's growth. It means half the orchard cultivated one year and the other half the next. This will enrich the



A Young Tree in Mr. G. W. Noble's Orchard Wrapped with Tar Paper to Prevent Injury by Rabbits

Photo by R. S. Duncan, B.S.A., Port Hope, Ont.
ground, but is probably hard on the feeding roots to be cut off the second year.

When to Prune

When is the best season to prune fruit trees?—W.L.K.

A heavy pruning of either young or old trees is conducive to wood growth, rather than fruit bearing, no matter at what season of the year the pruning is done. A pinching back of the growing shoots during the summer months is conducive to fruit bearing. Care should be taken not to pinch back too severely as severe heading in is equivalent to pruning and stimulates wood growth. If trees are making from twelve to eighteen inches of terminal growth, one-quarter or one-third of this may be taken off. This heading in tends to produce short twigs or branches in the centre of the top and with all fruits which bear from spurs this is the first requisite to fruitfulness. As a rule we should not expect results from pruning during the season when it is done, but the following year at the earliest. The German practice of bending the end of the shoot back and twisting it around the main branch lower down is probably better than pinching, as it checks the growth without removing the leaves.

To induce fruitfulness in mature