

southern nurseries and secure just as good results from them as from stock from the home nursery

DISADVANTAGES

Some of the disadvantages of growing nursery stock at home and in colder districts include the following: There is a temptation at home to grow nursery stock in rather rich soil in order to get a strong growth and a strong tree. If you plant your trees on a clay soil or a heavy soil there will come certain years when the fall is favorable to late growth when you will lose a large proportion of fine, hardy varieties such as McIntosh Red and Fameuse. So if one wants to have home-grown stock one must grow it on soil which is not too rich. If your soil is well drained and warm your stock should be thoroughly ripened before the winter sets in.

Another disadvantage of growing trees at home is that one loses one year very often in the growth of trees if one wants to get good stock, because no matter whether you grow your trees on light

soil or heavy soil, we have found in some winters in a cold climate the trees become what is known as "black hearted." This is due to the fact that the trees have made too late a growth, notwithstanding the greatest care. It may be also that trees have ripened their wood all right and a very severe winter follows while the trees are quite young, and the result is the pith and wood of the trees are damaged, but the cambium being alive the tree goes on growing next year, and unless one treats the tree the way I have described one is liable to have black-hearted trees. While black-heart may not be a very serious injury to a tree in its early history, just as soon as they begin to lose the branches disease will begin to work on the trees, and eventually the tree will decay and break down. After a very severe winter, we have found that black heart occurs in trees set out in the orchard three or four years. As a rule, I think I am safe in saying it occurs in the nursery. We want to avoid this black heart in trees.

Nova Scotia, a few months after I took up my duties there. No doubt every reader is familiar with the silvery foliage of some of our native willows and poplars. From a distance these trees may be easily recognized on account of the bluish white appearance of their foliage. If you bear in mind the appearance of this color when examining your orchards if you find that it is not due to any milky film of sprays, there exists the probability of the presence of this "Silver Leaf" disease. I again solicit samples of foliage, for we cannot be too careful in taking every possible step to prevent this disease from becoming a source of real danger to one of the country's most important industries.

NATURE OF THE DISEASE

The "Silver Leaf" is injurious to the life of the trees that have been enumerated. The trees may at first show only one limb affected, gradually another falls a victim, until the whole tree becomes involved. The disease works slowly, and it may take from three to five years before the disease has involved a whole tree. This depends naturally upon the size of the tree. During the first few years the affected branches bear some fruit, but bearing soon becomes a thing of the past and the tree dies limb after limb. It may be said that a tree once attacked nearly always dies. It is our experience that it bears little or no fruit previous. Protection practically amounts to immediate destruction of the trees which show this disease.

WARNING TO GROWERS

The "Silver Leaf" disease has been recorded and has been personally observed in the following provinces: Ontario (Ottawa only), Nova Scotia (several records), New Brunswick, British Columbia, and in the experimental orchards in Manitoba. No case has yet been received from Quebec, the Niagara district, or from any of the other provinces where fruit is grown. This must not be taken as an indication of its non-existence. I have reason to believe that the disease is very widely spread. The disease is very serious. Growers in this country are advised to examine their trees very carefully and give the disease no chance of establishing itself firmly all over the country. The fruit industry is in real danger. Without wishing to be an alarmist we cannot afford to neglect the lessons taught us by this disease in other countries, and every fruit grower should unite with the government in the efforts which are being made to arrest and control the spread of "Silver Leaf."

Stereum purpureum, the fungus which causes "Silver Leaf," is a wound parasite. The fungus is liable to gain entrance through any wound in the bark or root. It produces its fructification on

The Silver Leaf Disease of Fruit Trees

Dr. H. T. Gussow, Dominion Botanist, Ottawa

I desire to make an appeal to the fruit growers of Canada for cooperation in preventing the spreading of this alarming disease, the "Silver Leaf" of fruit trees. Already this disease has been located in several provinces.

As the name indicates, this disease may be recognized by a silvery or milky gloss on the upper surface of the leaves of apples, plums, peaches, cherries, currants and gooseberries. In Canada authentic cases have occurred only on apples and plums, but in Europe this disease has often been found in the other kinds of fruits. It is somewhat difficult to recognize the silvery appearance of the leaves, which, however, may become so pronounced as to completely whiten with a kind of bluish white tinge, the foliage of one or more limbs, or often the whole tree.

The use of sprays like Bordeaux or lime-sulphur results in the covering of the leaves with a bluish or yellowish white film. This may give the tree an appearance not unlike "silver leaf" but on wiping the leaves, this covering is of course easily removed, while in the real "Silver Leaf" the color will remain. Hence, it is important to distinguish carefully between these two facts. In order to be sure of the disease specimens will gladly be examined and reported upon by the Division of Botany, Central Experimental Farm, Ottawa.

Growers should try to become familiar with the appearance of this disease which is by no means a new trouble in this country, but which has unfortunately es-

aped detection until the discovery of undoubted cases of "Silver Leaf" in



Silver Leaf Disease in Apples

The top branch shows the silvery appearance of leaves when compared with the healthy twig below. The twigs towards the right show the fructification of the causal fungus.