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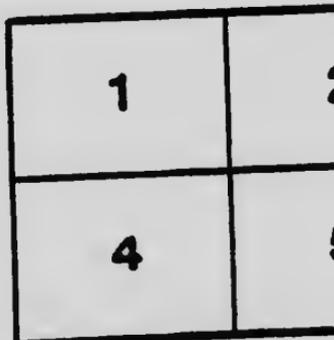
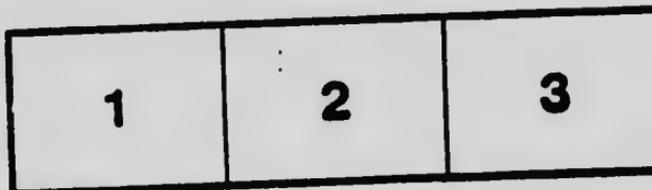
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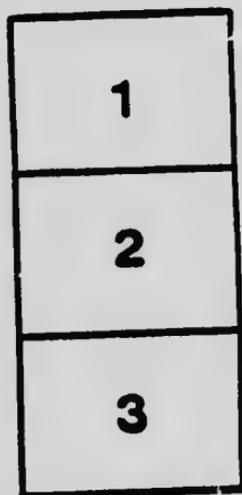
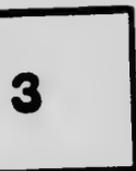
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EXHIBITION CIRCULAR No. 17.**DOMINION OF CANADA.****DEPARTMENT OF AGRICULTURE.****EXPERIMENTAL FARMS.****J. H. GRISDALE, B. Agr.**
Director.**W. T. MACOUN,**
Dominion Horticulturist.**DIVISION OF HORTICULTURE**

PROTECTION OF FRUIT TREES FROM MICE AND RABBITS
AND
CARE OF INJURED TREES.**BY****W. T. MACOUN.**

Every year thousands of trees are injured in Canada by mice, and, in the newer districts, a large number by rabbits also. There could be nothing more discouraging to a fruit grower, or would-be fruit grower, than to see his orchard which he had cared for, perhaps, for five or six years, ruined by mice; and yet this frequently happens. All this could be prevented if the farmer or fruit grower would use the information available and protect his trees from mice. Some years there is less injury than others, and this fact leads to carelessness, and when a bad year comes the trees are unprotected.

While the depredations from mice and rabbits in winter vary from one year to another, depending on the scarcity or abundance of food, the number of mice which are in the vicinity and the character of the winter, the injury is always greatest when the orchard is in sod, and when there is rubbish lying about; hence the latter should be removed before the winter sets in. In most cases it is not necessary nor advisable to have the orchard in sod, particularly when the trees are young, although it is highly important to have a cover crop, which also may sometimes become a harbour for mice. As mice may be expected in greater or less numbers every winter, young trees should be regularly protected against their ravages. Mice usually begin working on the ground under the snow, and when they come to a tree they will begin to gnaw it if it is not protected. A small mound of soil from eight to twelve inches in height raised about the base of the tree will often prevent their injuring the tree, and even snow tramped about the tree has been quite effectual, but the cheapest and surest practice is to wrap the tree with ordinary building paper, the price of which is merely nominal. Tar paper is also effectual, but trees have been injured by using it, and it is well to guard against this when building paper will do as well. After the paper is wrapped

around the tree and tied, a little earth should be put about the lower end to prevent the mice from beginning to work there, as if they get a start the paper will not stand in their way. It may be stated, however, that although several thousand young trees have been wrapped with building paper for years at the Experimental Farm at Ottawa, there have been practically no instances where the mice have gnawed through the paper to get at the tree. The use of a wire protector, or one made of tin or galvanized iron, is economical in the end, as they are durable.

There are a number of washes and poisons recommended for the protection of fruit trees and the destruction of the mice and rabbits, but none of these is very satisfactory, as if the mice or rabbits are numerous the poison has not sufficient effect upon them to prevent injury altogether. The following method of poisoning has been found fairly successful for mice, but rabbits are very difficult to deal with.

Make a mixture of one part by weight of arsenic with three parts of corn meal. Nail two pieces of board each six feet long and six inches wide together so as to make a trough. Invert this near the trees to be protected and place about a tablespoonful of the poison on a shingle and put it near the middle of the run, renewing the poison as often as is necessary.

TREATMENT OF INJURED TREES.

If a tree is badly girdled by mice or rabbits it usually dies. If, as soon as the wound is noticed, it is cleaned and covered with grafting wax or some paste, such as sulphur, cowdung and clay, and wrapped with cloth to exclude air and prevent the wood from drying out, there is a possibility of saving the tree if the girdle is a small one, as the sap which rises through the wood will continue to do so, and returning through the inner bark in an elaborated condition will cause growth to be made all around the upper part of the wound, and if the latter be not too large there is a chance of its healing over. If, however, the wood becomes dry before the bandage is put on, the tree will almost certainly die, although it may continue to grow throughout the season. When the wax and bandage are applied the tree should be headed back considerably to lessen the amount of transpiration of moisture, as there will not be as much sap rise as if the tree were uninjured, and the wood will thus dry out sooner than if it were headed back. If the girdle is near the ground, in addition to covering the injured part with wax or cowdung and clay, it is advisable to mound up the soil about the tree to cover the wound and thus help to prevent the wood from drying out.

Girdled trees are frequently saved, and more surely saved than by the above method, by connecting the upper and lower edges of the girdle with scions, which are inserted about an inch apart all around the trunk. This is known as bridge grafting. The more scions that are used the quicker they will grow together and form a new trunk, but two or three scions successfully grafted on a small tree will carry enough sap to keep the tree alive. A slanting cut is made at each end of the wound in the uninjured wood in which the ends of the scions are to be inserted. Strong, plump scions of the previous season's growth—not necessarily from the same tree, nor even the same variety—cut a little longer than the distance between the slanting cuts, are made wedge-shaped at each end. They are made a little longer than the distance between the cuts in order that when inserting the ends into the cuts it will be necessary to bend them, and thus have them under pressure, which helps to keep them in position. After inserting, some of the inside bark of the stock should remain in contact with the inside bark of the scion, as it is here or at the cambium layer where union takes place. As soon as the scions are all placed the wound, especially about the ends of the scion where inserted in the stock, is covered with grafting wax. The ends are also at the same time bandaged with a piece of sacking around the trunk to aid in

keeping the scions in place and to exclude the air. The tree should then be well headed back. The scions, if properly made and inserted, should soon unite with the stock and then carry the sap to the top of the tree.

Another method of bridging is to cut back the uninjured bark evenly all round the trunk and insert the wedge-shaped scions underneath the bark at the upper and lower ends of the wound. There are other methods also employed, such as using a scion bevelled at each end. Also, boring holes with an auger at each end in the uninjured bark and shaping the scion at each end so that it will fit into it.

One of the most satisfactory methods of utilizing the girdled tree is to cut it off close to the ground and insert a scion of some good variety. This graft should grow at least three feet in height the first season and make a nice young tree.

A tree may sometimes be saved when the girdling is well above the graft by cutting the tree back so as to remove all of the injured part. Under such conditions young trees will usually start fresh growth and the strongest shoot may be selected to form a new trunk and top for the tree.

Information in regard to the culture and varieties of Fruits, Vegetables, Ornamental Trees, Shrubs and Herbaceous Plants will be furnished, as far as practicable, free of charge, by the Dominion Horticulturist, Central Experimental Farm, Ottawa, Ont. No postage is required.

Published by authority of Hon. MARTIN BURRELL, Minister of Agriculture, Ottawa, Ont.



