

for this operation are a budding knife, grafting knife, saw, shears, a large knife for splitting and a mallet. Root grafting is always done during the winter season. The roots are lifted in the fall and stored away in a root-house or cellar. See the illustration showing at the left scions and stock separated and at the right, the operation completed, the point of union being wrapped with waxed string. Most of the nurserymen only tie the grafts with waxed string. We find at the Central Experimental Farm that, by waxing them over, we get a larger percentage to grow.

In the crown graft, the stock is left in the ground undisturbed and the work is done the latter end of April and the early part of May. To have a success in cherries, this should be done as soon as the snow is gone in the spring.

The operation of top grafting is nearly the same as crown grafting only it is done on branches of trees and sometimes on trunks, if they are not too large, at the height desired. In top grafting it is better not to cut off too many branches in one year as it will weaken the tree too much and the tree is apt to die. It generally

caused by the beetles or not. Whenever such is the case a round about the gum has been in the bark when the object of the beetle in attacking the tree seems to be to kill them.

The object of the beetle in attacking healthy trees seems to be to kill them because it is only in dead or dying trees that they can lay their eggs and produce offspring. This fact gives the clue to an easy and practicable remedy, especially when we know that they pass the winter chiefly in the girdles, under the bark of the dead such quarters and do not move from April comes.

THE REMEDY

Cut down and burn before April all dead and dying fruit trees of every kind and prune off dead branches. It is all important that these should not be left in the old brush heaps because the beetles will still continue to breed in them. If this suggestion is acted upon by the fruit-growers as a body, so many insects will be destroyed that all danger to orchards from this pest will be removed. Each fruit-grower look after his own orchard but do his best to get his neighbor to do likewise, because the insects fly for a considerable distance from one orchard to another.

Trees with gum masses on them caused by beetles need not be cut down unless they are so badly weakened that they are likely to die. The beetles do not seem to be able to breed where the gum is exuding because this substance drives them out. Such trees, however, should be pruned severely this spring and manured to help them recover quickly. If they are greatly weakened, they should of course be cut down and burned.

Growing Tomatoes for Cannery

Louis P. Hubbs, Prince Edward Co., Ont.

Whether tomatoes are to be grown for home use or for the canning factory it is desirable that they commence to ripen their fruit early in the season, to avoid the early frosts which we so often have in this country. The first thing necessary to the production of a large crop is the securing of large well-grown plants at the proper time for transplanting, which in this locality is the last three or four days of May or the first three or four days in June. To secure these plants the March in a hothed that is well protected from the cold winds.

Too much care cannot be exercised in the selection of good seed. Sow the seed in drills about four inches apart, firm the soil well on top. As soon as the plants begin to break ground they should be carefully watched to see that the bed is kept at the right temperature. It should not go below 50 degrees at night or fall below 80 in the day. Too high a temperature induces a tender slender growth which is to be avoided at all times if possible.

MOVE TO COLD FRAMES

About five weeks from the time of sowing the seed the plants should be ready to transplant to the cold frames. These cold frames are best prepared by placing about four inches of coarse horse manure in the bottom of the frame. Put on this at least five inches of good garden soil. Have this soil made very fine in the bed and be careful to place the soil at an even depth to get the plants of a uniform size. The plants should be set about four inches apart each way.

If the transplanting has been well done the plants should show signs of new growth in five or six days. As soon as the new growth is noticed, a liberal amount of fresh air is not only advisable but absolutely necessary, and at the end of two weeks from the time of transplanting the cotton should be

taken off at least part of the day. Give plenty of water when necessary but do not water too often.

As it gets near the time to transplant to the field the plants should be left uncovered a longer time each day, and finally leaving them uncovered at night and day if the weather does not get too cold. The water supply should be diminished a few days before transplanting in order that the plants may make a slow, stocky growth. The ideal plant is about four to five inches high and nearly as thick as a lead pencil and of a good dark color. If handled this way the plants should start growth very quickly in the field.

TRANSPLANTING

Great care should be taken in removing the plants from the cold frame in order to not break the roots nor to injure the plants in removing them to the field. The earlier the plants can be set in the field without the risk of losing them by the frost, the earlier the crop will be and more money made by getting the crop all ripe and delivered to the factory at a time when they are all wanted.

CULTIVATION

Cultivation should begin as soon as the plants are set. The early cultivation should be deep and close to the plants, but later it should be shallow in order not to injure the roots. The later the cultivation can be continued the longer the picking season will last. When plants are set with the plant setter they will need to be well hilled up with a hoe, but if set in rows both ways, very little hoeing need be done after the plants get a good start.

In getting the land ready for tomatoes it should be rich and well plowed in the fall. In the spring as soon as the land is dry enough to cultivate well, it should be cultivated and kept well stirred until it is time to set the

plants in the field. In this way the land will be bound to be loose and moist and the continuous cultivating during the summer will keep the land moist. Early cultivation will also have a tendency to prevent the grubs from destroying the growing plants.

A Hedge in One Year

T. McVittie, York Co., Ont.

It is easy to have a hedge from seed in one year. The mock cypress (*Kochia scoperia*) is the plant that will do it. It is a half-hardy annual and, of course, will have to be renewed every year. It will grow two or three feet in height and, if the plants are grown individually, four or five feet in circumference, forming compact bushes. It makes an effective and ornamental hedge. The small feathery light-green foliage changes in the summer advances to a deep green, and to a crimson hue in the fall. The beauty of the *Kochia* is very often destroyed by overcrowding soil planting.

To grow for pot culture, the seed may be sown in March, giving the same treatment as for balsam or other similar annuals. They should be given good drainage, if intended for pots, as they are sometimes very slow in germinating.

For outdoor culture the seed may be sown in April and the seedlings planted out about three feet apart by the end of May, taking care to keep well watered until established in the ground where they are to remain for the summer. The seed may be purchased from seedsmen that advertise in Farm and Dairy.

The article referred to on the front cover of this issue of Farm and Dairy may be found on page 11, at top of first column.



An Example of Cleft Grafting

takes from three to four years to get a new top on a fairly good sized tree. In top grafting the cleft graft is used. (See the illustration).

The following recipe is used for making grafting wax: Rosin, 4 parts; beeswax, 2 parts; tallow, 1 part; by weight. A little more tallow will not hurt. Another was recommended is: $2\frac{1}{2}$ lbs. of rosin; $\frac{1}{2}$ lb. of beeswax; 10 oz. of boiled paint oil. This is the better wax for outdoors.

A Dangerous Pest

L. Caesar, Ontario Agricultural College, Guelph.

During this coming season fruit-growers of the Niagara district from Hamilton to Niagara-on-the-Lake are threatened with serious injury to their cherry, plum and peach trees through the attacks of a very small black beetle about one twelfth of an inch long, commonly known as the Shot-hole Borer, Fruit Bark Beetle, or Pin Borer. Under normal conditions it confines its attacks to dead or dying trees. When it becomes excessively numerous, however, it has the dangerous habit of attacking perfectly healthy trees.

When healthy trees are attacked by the beetles, gum masses soon form over the holes bored by the insects through the bark. Very similar gum exudations are caused by fungous diseases, such as Brown Rot. It is easy, however, to tell whether the gum has been

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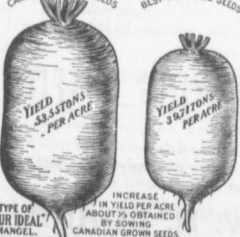
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