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R. J. BALDWIN, Director

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ORCHARD GRAFTING

Time. Grafting should be done with dormant cions. The tree in which the cions are set need not be dormant; in fact grafts set up to the time of blossoming should grow, provided the cions are dormant. The best time for top-working is just before the bark slips; bridge-grafting should not be undertaken until the bark does slip.

Material. Cions should be cut from wood of the past season's growth. If longer cions are necessary in bridge grafting than can be found in water sprouts, older wood may be used. They may be taken at any time from mid-November until the buds start to swell, but preferably before severe freezing weather. Cions cut at any time before grafting is done may be buried in a well drained spot on the north side of a building.

Cleft Graft. For topworking trees that have been set more than two or three years the cleft graft is the best type. It should not be attempted on stubs over two inches in diameter. Figure 1 shows how the cions should

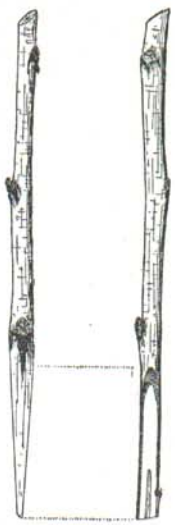

Fig. 1.—Cions trimmed for cleft graft.

be trimmed. Figure 2 shows how they should be set. Cions should be a little wider on the side that is to face outward. They should be set so that the inner side of the bark of stock and coin make one continuous layer.

Two cions should be set in each stub. All cut surfaces should be covered with grafting wax.

Both cions should be allowed to grow for one to three years, depending on the size of the stub and the growth the cions make. One cion on each stub should be kept small by heavy pruning back each year; eventually this smaller cion is to be removed.

To secure protection from sunscald, only the northeast half of the tree should be grafted the first year. Watersprouts that come out on grafted limbs in positions where they shade the limbs should be retained for a year or two, though they should be cut back heavily. The rest of the trees may be grafted in the second year. Protection against sunscald is less important in this part of the tree.

Bridge Grafting. Killing of the bark on any considerable area, regardless of the cause, should be repaired, whether or not the tree or limb is com-

Fig. 2.—Cleft graft complete except for waxing. Note correct position of lowest bud on the cion.

pletely girdled. This is done by bridge grafting. The general nature of the operations involved is indicated in Figure 3. This work should not be attempted until the bark slips. There are several ways of uniting the cions to the tree. The L-shaped cut shown in the figure is perhaps the easiest to make under ordinary circumstances; the inlay is useful in trees with very thick bark.

Grafting Wax. The best results are secured with a wax applied warm with a brush. The ingredients are:

Resin, 5 lbs.
Beeswax, 1 lb.
Raw linseed oil, ¼ pint.
Lamp black, ½ lb.

The grafts should be examined from time to time and rewaxing done as needed, especially to keep the end of the stubs sealed.

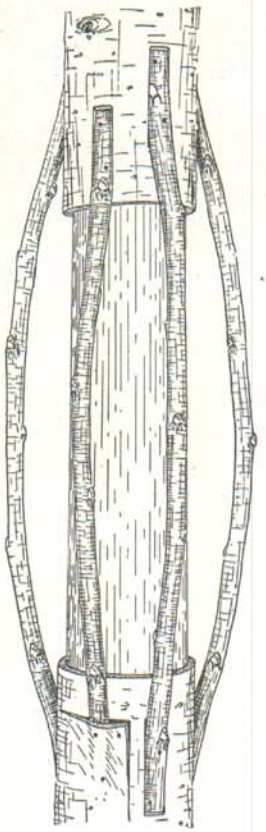

Fig. 3.—Bridge graft, showing some of the many methods of setting cions. Note the spring on the cions. This is particularly important in young trees, which sway most.

This bulletin presents in more condensed form the more important points covered in detail in Special Bulletin No. 143 of the Michigan Agricultural experiment Station. A copy may be had upon request.