

the bark, as various kinds of stocks may differ by a week or more in the time required to reach the correct stage.

Operation of Grafting

It is advisable to prepare the scions before beginning to graft, but only enough for about 1 hour's work should be cut at a time; a small box to keep this quantity clean and shaded from the sun will be found useful. The wood should be taken from the trench where it has been stored, a few inches of both tip and base of each shoot should be discarded, and the remainder cut into scions with three or four buds on each. The cut at the top of each scion is made immediately above, and sloping away from, a bud (see illustrations on this page).

The base of the scion is prepared by making a slanting cut, about 2in. long, on the side opposite the lowest bud, as shown in the illustration at right. The base is then split by another cut (see illustration) to form a tongue; this cut is made parallel to the bark from nearer the pointed end of the slanting cut rather than up the centre.

At a height of about 12in. similar cuts are made on the stock and the two pieces are fitted together (as in the illustration at right) so that they are held firm by the tongues.

To ensure a good union between stock and scion the cambium of one must be in contact with that of the other to the greatest extent possible. (The cambium is the layer of actively dividing cells between the wood and the bark.) If the scion is of the same diameter as the stock, and the two barks are of equal thickness, the main precaution necessary in fitting them together is to see that the cut surfaces of stock and scion are in contact. If the scion has a smaller diameter than the stock, it should be placed toward one side, so that the cambium layers on that side are in close contact.

When the scion is in its correct position the join is bound firmly with

raffia and sealed. The method of binding is similar to that described for budding trees. The material used for sealing should make a pliable, airtight, waterproof film over the union. There are many recipes for grafting wax, and many need to be applied hot. Some bitumastic compounds are suitable, and green crude petrolatum is often used successfully. It is essential that the join be covered completely, particularly all exposed cut surfaces; the top of the scion should also be sealed to prevent drying out.

Two workers can do grafting much more satisfactorily than one; the more

skillful should do the cutting and fitting of the grafts and the other the tying and sealing.

If only one person is doing the complete operation, extreme care is required to see that the hands are cleaned thoroughly each time the sealing compound is handled, as the slightest trace of foreign material on the cut surfaces of stock and scion that are in contact may cause failure of the union.

Within a few weeks of the buds being grafted the scion should begin to grow, and both scion and stock will swell. As soon as this occurs the raffia should be cut with a sharp knife, but not removed, care being taken not to damage the union.

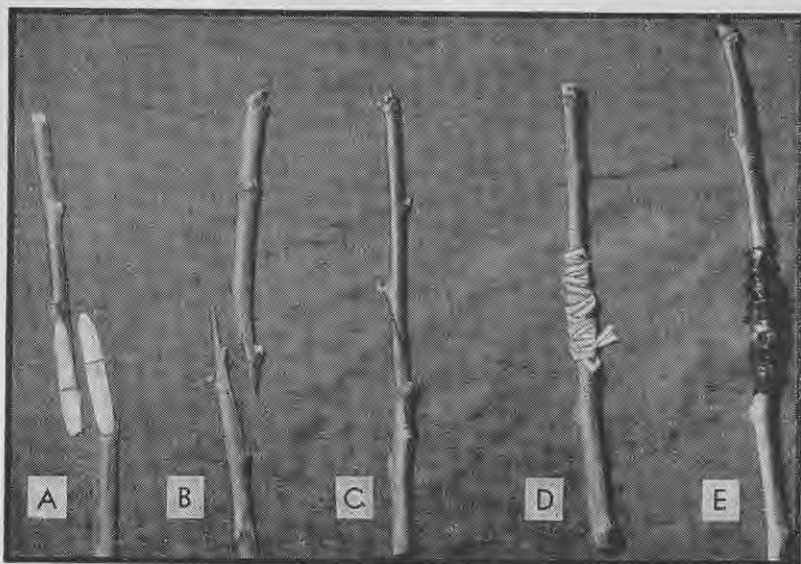
Buds on the stock may also start growing. These shoots should be rubbed off from time to time, preferably before they have grown more than an inch or so. Rubbing off is better than cutting, as it reduces the chances of the shoots growing again.

During the first growing season after grafting the trees should develop at least three good shoots. Provided these are well spaced, all three should be allowed to grow until the following winter, when they should be headed back to about one-quarter to one-third of their original length and any other shoots removed. If fewer than three shoots come away, the tree should be reduced to a single rod, which should be headed back in the winter to form a head in the following season.

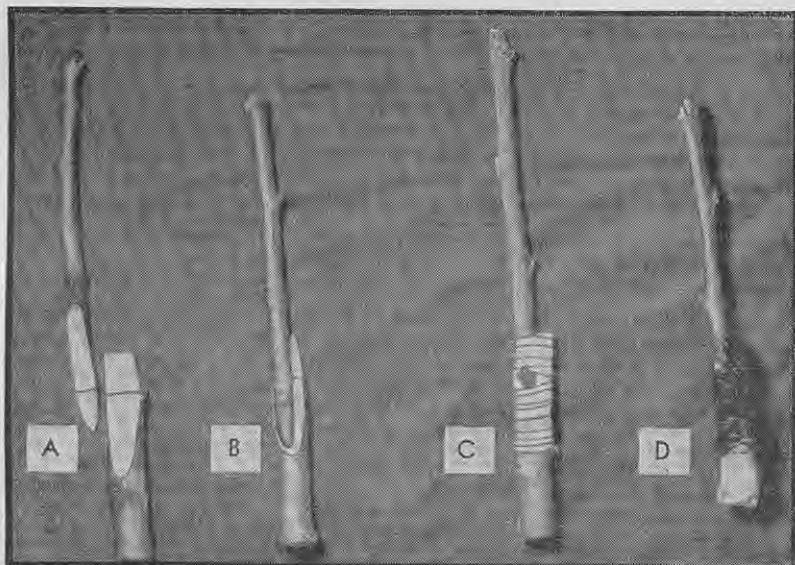
In the late summer preceding transplanting to the orchard the trees should be wrenched when the soil is in a suitable condition. Wrenching assists in forming a more compact rooting system, which enables the tree to recover from transplanting more readily.

Reference

"Fruit Tree Raising: Rootstocks and Propagation", Bulletin No. 135, Ministry of Agriculture and Fisheries, England.



Whip grafting when the stock and scion are the same thickness. A—Cuts made on stock and scion. B—Side view of stock and scion. C—Scion placed in position. D—Scion bound in position. E—Graft sealed and completed.



Whip grafting when the stock is larger than the scion. A—Stock and scion prepared for fitting together. B—Scion fitted to stock (note how the scion is fitted to one side so that the cambium layers meet). C—Scion tied in position. D—Graft sealed and completed.