

Grafting.

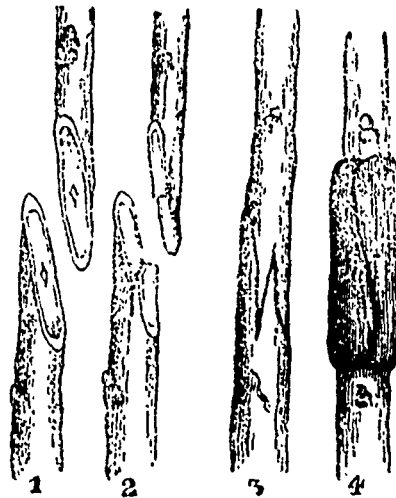
Inquiries on the method of grafting have been so frequently repeated lately, that although an article and illustrations on the subject were given in the last volume of the CANADA FARMER, there is no doubt that the following directions, which, together with the accompanying figures, are taken from the *Rural World*, will be acceptable to many of our readers.

In the early settlement of the country, fruit trees were generally propagated from seed. But trees propagated in this way, from kinds however good, gave no assurance that the seedling trees would produce fruit with the good qualities possessed by the parent. New varieties are thus produced, but generally, where one seedling tree produced fruit equal or superior to its parent, many would prove inferior, and frequently they are so degenerated that they are worthless. In order to obviate this difficulty, and to propagate those kinds only that are worthy of cultivation, grafting and budding are resorted to. Grafting was understood by the ancients. It is a more different method was practised by the Romans. But since the demand for fruit trees in this country calls for them by thousands, but two different modes of grafting are generally practised, and these are such as can be performed with the greatest facility.

The most common method of grafting apple trees now practised by extensive nurserymen is to sow the apple seed either in the fall or spring. The seedling, on good land and properly cultivated, will, by fall, be large enough to graft. These are taken up and packed in the cellar, and the business of grafting is carried on through the winter. The grafts are packed in boxes, mixed and covered with moss, pulverized rotten wood or light earth, and placed in the cellar until the season of setting out arrives in the spring. Roots grafted in this way, are cut into two or more pieces, according to their size and length, each piece forming a root for an individual tree.

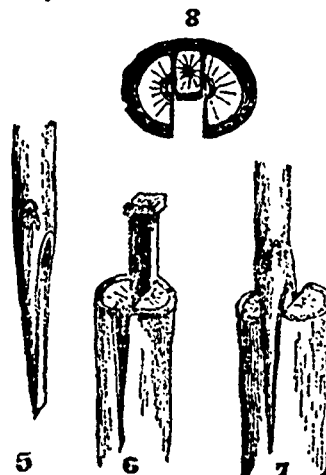
If the graft is set in the stock or root, so that the sap may flow upwards without interruption, and that which is elaborated by the swelling bud and leaves may flow freely downward through the inner bark, the union is surely and readily formed. In order to secure this, certain requisites are to be regarded, the first of which is, that the operation be performed with a sharp knife, so that the parts may be cut smoothly, without mutilating the pores or sap vessels, and the two parts be brought into immediate and even contact. Secondly, that the parts be so brought together that a permanent and considerable pressure be applied to keep the parts in their proper places. Thirdly, that the union of the inner bark and the wood, both of the graft and the root, be brought together, so as to exactly correspond. Where the graft and the stock are not of the same

size this union must be secured on one side. With a correct knowledge of the requisites for grafting, a little practice will soon make one perfect in the operation.



Formerly, the stocks at one year old were set in the nursery rows and cultivated one year, and then grafted at the surface of the ground. It is contended by some that trees propagated in this way are better and longer lived than those that are root grafted. Our experience does not enable us to answer this question. The last is a more tedious and expensive operation, and can only be done in the spring, when other operations are pressing. In some nurseries stocks are set in the way we have mentioned, and budded in the fall at a comparatively more leisure time.

Another method of grafting is extensively practised in seedling orchards, by removing the large limbs and inserting grafts in their stumps, or where it is desirable to have specimen fruit. A great variety of apples or pears may be inserted in the same tree.



The figures we give above will illustrate the various methods now generally practised in grafting fruit trees. Figs. 1 to 4 represent the successive stages of what is termed whip or tongue grafting, from the sloping cut of the graft and stock or root to the completion of the operation by binding. In practising

this method of grafting, with one clean cut we make the proper slope, and, by reversing the knife, one cut downwards completes the tongue. In making the tongue, the cut downwards should be deeper than is represented in figures 2 and 3; it should be at least three-quarters to one inch deep. This increased depth adds greatly to the strength of the parts united. Figures 5, 6, 7 and 8 represent the respective parts of what is termed cleft-grafting, such as is usually employed in stocks planted in the ground, and in renewing the heads of old trees. Figure 6 represents the stock, opened with a wedge, ready to receive the graft. Figure 5 represents the wedge shape of the graft to be inserted, and figure 7 illustrates the graft in its place after the wedge has been withdrawn. It is only large stocks that require to be opened by a wedge. Nursery stocks are always grafted while they are so small that the graft itself will open the cleft. Figure 8 shows a cross section of the cleft graft. It will be seen that the graft is cut thicker on the outside than on the inside, in order that the points of union at the bark may fit the more firmly.

In figure 4 the band is represented. Our method of binding is somewhat different, and may be performed with great expedition.

Take a piece of board with a planed surface, a yard long and nine or ten inches wide; draw a line with a pencil the entire length four inches from one edge, and draw another four inches from the first. These indicate the length of the bands. Along the edge of the board and along each line lay on with a brush a strip of grafting wax one inch wide. For making the bands provide common cotton cambric, worth 25 cents per yard. Draw the end of the cloth even with the second line made on the board, and stretch the cloth and press it on to the wax, so that it will adhere, and cut off the piece with a knife, even with the edge of the board. Then apply a coat of grafting wax one inch wide along the two edges of the cloth, and one inch wide on each side of the middle line. Then, with a sharp knife, across the board, cut the cloth into strips half an inch wide, and then draw the knife lengthwise over the middle pencil mark, cutting the bands into two lengths of four inches each. By a gentle fire the wax is kept at a proper temper, and the bands may be taken from the board as the binding proceeds, and applied to the grafts with the greatest facility.

When the stocks were of good size and the grafting well performed, we never found any great benefit from binding.

Grafting wax may be made by melting together about equal parts of beeswax, tallow and rosin; or the proportion of wax may be reduced for the sake of economy, and the rosin and tallow supplied in proportions that will give the proper temper to work readily and adhere well.