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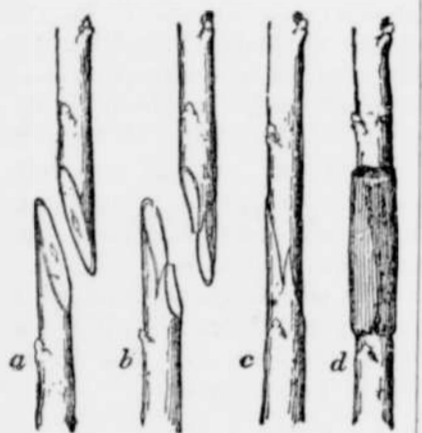
HOME COURSE IN FRUITS AND BERRIES

II. — GRAFTING APPLE TREES AND LOCATING AN ORCHARD.

By G. B. BRACKETT, Pomologist, Bureau of Plant Industry, United States Department of Agriculture.

APPLE grafting, unlike budding, is usually performed during the dormant period of growth. It is accomplished by carefully fitting a small dormant twig or scion of the variety we wish to propagate into a cut in a stock or seedling tree which we wish to change. There are several forms of grafting, but they differ more in method than in results. In fact, so far as the top of the tree is concerned, the results are the same in all cases whether we bud or graft. The object sought is to change an undesirable or uncertain tree into one which we know will produce a variety whose fruit will possess certain desirable characteristics.

Splice Grafting.
Splice grafting is a simple form and is used when the stock and scion are very nearly the same size. It consists



SUCCESSIVE STEPS OF STOCK GRAFTING. (a, splice graft; b, tongue graft, parts separated; c, tongue graft, parts united; d, waxed wrapper applied.)

In splicing or lapping the scion on the stock by scarfing each at the same angle. When a close joint is secured the parts are held in place by means of some kind of wrapping material.

Tongue grafting differs from splice grafting in that both scion and stock are split at corresponding points on the scarf with a thin bladed knife so as to form tongues. The object of this is to unite more firmly the two portions and present a larger surface for the effusion of cell tissue and to promote the caulousing process. This is the method commonly practiced by nurserymen under the name of root grafting.

In root grafting thrifty one-year-old stocks grown from seed are taken up in the fall and stored in a cellar or buried in the soil, where they will keep fresh and be accessible at any time in winter when wanted. The scions having been secured in the fall, the work of grafting may be performed at any time during the winter. The roots only are used in this method, and they may be cut in two or more sections according to their size and length or the desire of the propagator. But the larger or stronger roots, as a rule, may be relied upon for the most satisfactory results.

Foreign Methods.
In the foregoing methods of grafting, but especially in the first, the parts must be held together by some kind of bandage or tie. This may be made of thin cotton cloth or tough manilla paper spread with melted grafting wax and when cool cut or torn in narrow strips of convenient width for wrapping. But the most common method now practiced is to employ cotton yarn drawn through melted wax and wound upon a spool, from which it is used when wanted.

These root grafts, after having been tied in bundles with each variety separately labeled, may be packed away in moist earth or loam and left in a cellar free from frost until spring, when they should be planted in nursery rows in the open ground and cultivated for one, two or three years, when they are ready to be transplanted to the orchard site.

Thorough cultivation in the nursery rows should be given and some attention should be paid to training or shaping the young trees, so as to insure the best results when transplanted in the orchard.

Cleft Grafting.

Cleft grafting is generally done when the stock is considerably larger than the scion and where the operation is to be performed above ground. The stock is split downward, after it has been cut off at the point where the scion is to be inserted, by using a fine tooth saw. The bark should be cut through first to avoid being torn and so that the sides of the cleft will be smooth. A wedge is put in to keep the cleft open for the insertion of the scion, which is cut wedge shape, with a long slope, one edge being a little

thicker than the other. The object of this is to have the pressure of the cleft greatest upon the outer side where the union is to be effected.

If the stock is large enough a graft may be inserted on each side of the cleft but if both grow one should eventually be cut off. After the scion has been properly inserted the wedge should be carefully withdrawn, leaving the scion in place, so that the inner bark of the scion and the stock shall coincide. If the pressure of the cleft is not sufficient to hold the scion in place it must be wrapped with cloth or strings before waxing.

Air Tight Joints.

The stock and scion are now ready for the grafting wax, which may be applied either in liquid form with a brush or in plastic condition after having been worked with the hands, or they may be wrapped with strips of muslin or manilla paper previously spread with wax, as heretofore mentioned. Great care should be taken to make every joint air tight or the operation will be a failure.

Regrafting Bearing Trees.

Regrafting is sometimes very desirable when it is found after trees have come into bearing that their fruit is worthless. When the trees are not too old and are in a healthy condition the change can be made with good results. But when the trees have attained a considerable age and have lost their vitality to a considerable extent it would be a waste of time and expense to attempt to change them. Better plant new trees. If, however, in the case of healthy, vigorous trees it is considered advisable to regraft tops it is not best to do this all at one time. Only about one-third of the tree should be grafted the first year, selecting branches in the center and top of the tree. The next year another third may be grafted and the remainder the following year.

Grafting Wax.

Here are formulas for grafting wax: Formula No. 1 (for outdoor work).—Resin, four or five parts; beeswax, one and one-half to two parts; linseed oil, one to one and one-half parts. This is melted in a mass, and when cool enough it may be drawn out into thin strips and applied by wrapping it firmly around the stock where the scion is inserted, or a more convenient mode of using this wax is to spread it while melted upon thin muslin or strong manilla paper and when cool cut or tear in strips of convenient width for wrapping around the grafted stock.

Formula No. 2 (for indoor and outdoor work).—Resin, six pounds; beeswax, a pound; linseed oil, a pint. Melt together and when at the temperature of 180 degrees F. apply directly to the joints with a small bristle brush. In order to keep it at the proper consistency the vessel containing the wax may be placed in another vessel containing boiling water.

Locating an Orchard.

The selection of an orchard site is not governed by any arbitrary rule. It is unfortunate that some farms do not afford the best soils and exposures for orchards. But the owners of such should not allow this fact to deter them from planting trees and caring for them afterward.

Some kinds of soils and surface presentations are preferable to others, as they are better adapted to this fruit and require less expense in preparation and in the after care and treatment of the orchard. The most intelligent and experienced orchardists differ as to the best location and exposure of an orchard, some preferring a northern slope, others an eastern, and yet others recommend a southern or even a western slope as best. It is believed that the advantages preponderate in favor of a gentle eastern or northeastern slope, as orchards located on such sites suffer less in both soil and tree from the effects of heat and drought. An orchard with such an exposure will maintain its vigor and longevity better than if inclined to the west or southwest. This is especially true in states south of the New England group, where the summers are long, hot and dry and where it is probable that the greatest injury to trees results from these causes. But, as before stated, all farms do not afford these most favorable sites, especially near the home, which is the most desirable location for the family orchard. Thus the planter will often be forced to forego such a location and take his chances where the natural conditions are not so favorable. If possible the site should be elevated above its immediate surroundings, thus giving a free circulation of air, while such an elevation will also be of great aid in guarding against late spring frosts, so fatal to young fruit at the blooming season.

Soils.

Apple trees will thrive and do well on almost any soil which is well prepared, but the different kinds of soil may require different treatment and after care.

A loamy soil is naturally rich in plant food; hence it will need little, if any, manuring in its preparation.

A clay soil is the most difficult to prepare and often requires manuring, as well as thorough plowing, replotting and subsoiling. Sandy soils are generally lacking in the necessary plant food. The wood growth on loamy soils will be strong and vigorous, but may not be sufficiently mature to withstand the freezing of the more rigorous winters. Freezing of the soil apt to produce such vigorous growth, and orchard trees on such lands will be harder as to winter killing than on most other soils. Timberlands or lands on which forests have formerly grown, if having the proper exposure and drainage, are preferable for orchard sites. Fruit grown on such lands will rank first class in size, quantity and appearance.

A HOTEL THIEF

By LUCY K. WYNKOOP

When mother and I went to the city we always stopped at the Arlington hotel. It was in a quiet part of town and a hotel suitable for women.

We had finished one of these sojourns in the city, during which we had done considerable shopping. I had packed my trunk and gone into mother's room to pack hers. Then I went back to my room. I found the door ajar, which surprised me, for I had closed it when I left the room, and in the center of the room saw a man standing, looking rather dazed. I stood stock still, looking at him, when he said to me: "Pardon me; I must have entered the wrong room."

He was a very gentlemanlike young fellow and withal very handsome—nothing at all like a thief—and I was about to say something to make him feel more comfortable when I noticed that my trunk, which I had left closed, stood open and the articles I had laid in it carefully were much disarranged. I ran to it and found certain articles—parcels recently purchased—missing. Then I was convinced that I had caught a thief in my room who pretended that he was there by mistake. I went to the electric button and was about to press it when he seized my wrist and said:

"For heaven's sake, what are you going to do?"

"Summon assistance." I didn't feel afraid of him. Why I don't know, unless it was his manner, which was very deferential.

"You don't need assistance. And if you and I are caught here together in your bedroom the consequences will be unfortunate, to say the least. I assure you that I have got into the wrong room."

"Who has robbed me?"

"Robbed you?"

"Yes; articles are missing from that trunk."

He at once turned his pockets inside out to show me that he did not have my property. Indeed, the lost articles were too bulky to be on his person, besides being quite valueless. I was puzzled.

"I don't understand it," I said.

"Nor I. But I'm not going to remain here to hunt for an explanation. Believe me, if I am found here it would reflect upon you, a woman, far more than on me, a man."

"Go," I cried. "It is had enough to be robbed without any additional misfortune."

He slipped out of the door and left me standing over my trunk, bewildered. My brain was filled with conflicting conjectures concerning him. He bore the stamp of a gentleman, and yet surely he was a thief and by some trick had got away with my property.

However, there was nothing for me to do, so far as I could see, but pocket my loss and say nothing about it. This course commended itself to me, because if the man were innocent I did not wish to accuse him. The articles lost were not of sufficient value to make it worth while to appear against him in court, even if I could find him, which was not probable. Besides, if he were what he pretended to be it might make trouble for me.

Some months later I made another trip to the city and with me was my mother, and while walking along the street met the man I had found in my room in company with a lady, whose appearance was as refined as that of the man. I remarked to myself that if he were a thief he certainly had very aristocratic looking associates. He saw me, recognized me and turned pale. But as we were face to face but a moment I could not see how lasting was his emotion.

One day when I was at home I saw in a paper an item headed "Capture of a Noted Hotel Thief." The article went on to say that a thief whose assurance was unlimited and who was master of all sorts of subterfuges had been caught in a certain hotel and had confessed, turning over plunder that he had had a long time accumulating. The description fitted the man I had found in my room at the Arlington. I gave up all idea of his innocence. It gave me something of a pang to do so, and yet why I could not tell.

A few days later I received a note from the proprietor of the Arlington, repeating what I had read in the newspaper and saying that packages bearing my name had been recovered. Should he send them to me or would I call for them? The latter course was advised. I went immediately to the city and to his hotel.

I identified some property as belonging to me, and it was returned. I was anxious to see the thief, but could not get sight of him without going to jail, which I would not do. Before I left the landlord sent up to my room to know if I would meet him in the ladies' parlor. I went down, and there beside the proprietor was the man I had found in my room.

"This is Mr. Brainard," said the proprietor, "who desires to offer you an apology for something that occurred in this house some time ago. Mr. Brainard is a patron of my house and a gentleman of the best social standing."

"I am exonerated," said Mr. Brainard, "and a mystery is explained. This hotel thief who has been captured was in your room intentionally before I got into it by mistake."

In Mr. Brainard I found a friend who has now been such many years.

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