Horticulture.

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THE ORCHARD.

Planting Fruit Trees.

Having obtained young, healthy trees, well supplied with an abundance of fine fibrous roots; those too that are stout-bodied, not lank and slender, for the diameter of the trunk of a young tree is of much greater importance than its height; the planter will be ready to proceed to set them out. And first of all we will observe that it is of great importance to keep the roots as much as possible from exposure to the sun and wind, during the operation of planting. a , rable. It is very common for planters to take a bundle of trees, from twelve to twenty, and carry them along with them, planting a tree at a time until all are planted, meanwhile leaving the roots exposed to a bright sun or a warm drying wind, so that before the trees are all planted many of them will have their roots well dried. This is very bad practice. The planter should provide himself with a bit of old carpet, canvass, or sacking, and wrapping this about the roots of his parcel of trees, keep them well protected while he is planting, taking out only one at a time. If he have more than such a parcel, the roots should be protected by placing them in a trench and covering with earth. This is what nurserymen and gardeners term *heeling in* or *laying in by the heel*.

Before planting, the roots should be examined and any bruised or mutilated portions cut smooth with a sharp knife. A smooth wound heals over more quickly than a rough one. If the quantity of roots lost in taking the tree up seems to have been considerable, the side shoots and a part of the top of the tree should be cut back or shortened in, so as to restore the proportion between the root and the top. If the foliage, when the tree comes out in leaf, be so abundant that the roots can not supply the moisture that is exhaled from them, the tree will perish; but if the branches have been judiciously shortened in, so as to lessen the foliage to the quantity that the roots can supply with moisture, a steady and healthy growth will ensue. It is better to cut-back the side branches at this time, leaving three or four buds at the base, than to cut them off close to the body of the tree. The circulation in the trunk will be kept up by the foliage thrown out from these spurs, but if the branches be cut off close, the exposed wood seasons back into the trunk, and if there be a large number of these wounds along the body, so great is the drying out sometimes as very seriously to affect the growth of the tree. For the same reason we advise that all the small spurs and leaf buds, that may be upon the trunk, be allowed to remain, as they very materially aid in keeping the body fresh and sound and the sap in free and healthy circulation. After the tree has become well established these may be cut away smooth with the trunk, and then the slight wound will rapidly heal over.

In planting an orchard it is very desirable to have the rows straight, and so as to range in every direction. If the field be a square it is very easy to do it, but when the boundaries of the field form different angles it is more troublesome. The following plan will assist in understanding the manner of proceeding to stake out the ground for planting an orchard. It is much better and more expeditious to stake it out first, and then plant the trees where the stakes stand, than to try to plant the trees as it is laid out.

We will suppose that the boundaries of the field run in the directions indicated by the lines A B and A C At the desired distance from the fence, stretch two lines, perfectly straight, along the two boundaries above indicated, and fasten them tight. If it be intended to plant the trees say thirty feet apart each way, take two other lines, each thirty feet long, and beginning at A, mark in the directions A B and A C, along the lines, point thirty feet apart, and at each point set a stake. When this has been done there will be a row of stakes along two sides of the field, each row starting from A and the stakes in the rows exactly thirty feet apart from each other. Now let one end of one of the thirty feet lines be placed at the stake at I, and one end of the other line of the same length be held at the stake at D, while another person brings the other ends of these two lines together They will meet at N where another stake should be set. The person holding the end of the line at I should now proceed to N and hold it there, the person holding the end of the other line at D should now proceed to E and hold it there, while the person holding the other ends of the two lines will bring them together at O and set a stake there. In this way the party will proceed across the field towards B, and when they have finished planting the second row of stakes on that side, will proceed to the other side of the field and holding the end of one line at K and of the other at N will bring the other ends together at Q, and having set a stake there, will proceed along the side of the field towards C, planting stakes at T W, &c. When the field has been covered with stakes in this manner, if the work has been accurately done, they will be found to range in every direction, not only in the directions A B and A C, but also along the dotted lines A X, A Y, and A Z; M H, M S, and M R. By first setting the ground with stakes any inaccuracies in the measurements can be detected and remedied, so that when the trees are planted the rows will be perfect.

In planting trees it is necessary to pay some attention to the condition of the soil. In clayey soils it is very undesirable to plant trees when it is wet. The ground should be in a friable state, no matter what may be the character of the soil, though the evils resulting from planting in a sandy soil when it is somewhat too wet are not usually as great as when clay is the predominant feature. Again, if the soil be thin, and the subsoil of a cold, tenacious or hard nature, it is better not to make the holes deep, not even deep enough to receive all the roots, but to make them shallow and cover the roots by throwing the surface soil upon them. The writer advised a friend who was planting a young orchard on a thin clay soil, with a hard, tough clay subsoil, not to make any holes at all, but simply to spread out the roots on the pulverized surface, and holding the tree in position by tying it to a stake, to cover the roots with some of the mellow surface soil, thus making a flat hill over them. He followed the advice, and his fine, thrifty trees, now some years in bearing, attest the soundness of the advice given.

Where the soil is deeper, a broad hole should be made, of sufficient diameter to receive the entire length of the roots without bending them, and deep enough, if it can be done without going into the subsoil, to admit of the tree standing, when the soil has become settled, at the same depth at which it was growing when taken up. It is a very common error to plant trees too deep. We recently received a letter from a gardener residing in the county of Bruce stating that he had been called to inspect some trees which had been planted a couple of years but had made no growth, and which the owner wished were back again in the hands of the nurseryman from whom he got them. The gardener at once saw that the reason why they did not make better growth was that they had been too deeply planted. He at once took them up, set them out again at a proper depth, and now the trees are in a flourishing state.

Having made the hole large enough to receive the roots in their natural positions, make the bottom of it mellow and loose, place the tree in position and spread out the roots, then cover them gradually with mellow surface soil, working it in among the roots with the hands, and gently pressing it down with the foot so as to bring the soil into close contact with every root and fibre. When the earth is all placed over the roots, the surface should not be packed down but left loose. In this condition the moisture that may be received in rain and dew will be more readily absorbed, and evaporation will be retarded. But in addition to this, in our climate where the heat of the sun in summer is often so fierce, and the drought so protracted, it is very important that some loose material, such as coarse barn-yard litter, old chip manure, or even sawdust, be thrown upon the surface, over the roots to the depth of four or five inches, so as to keep the ground during the first season cool and moist.

This is called *mulching*, and the loose material thrown upon the ground is termed a *mulch*. Great importance is attached to the use of this mulch by all persons familiar with the transplanting of trees, and we feel confident that would our farmers and others, when they are planting, at once apply such a mulch before they think their work is done, many hundreds and thousands, not to say hundreds of thousands, of trees that now perish would live and thrive. The value of this mulch to newly transplanted trees, as a protection to the roots from the heats of summer and the frosts of winter has not been sufficiently appreciated. It is fully as important for winter protection in our climate as for summer. If the ground is covered to a sufficient depth to keep the earth from freezing about the roots, enough moisture can be readily absorbed by them to supply the evaporation taking place through the bark of the branches, which are constantly swept by the drying, frost-laden winds; but if their supply be seriously checked by the hard freezing of the earth, the tree, enfeebled by the late removal, has not sufficient vitality to thaw out the earth about its roots, so as to obtain the needed moisture with sufficient rapidity, and the tree is more or less lessened by the frosty winds, so that it puts forth feebly the next spring, if indeed it puts forth at all.

Effect of the Stock on the Bud or Graft.

Prof. S. B. Buckley, of Texas, furnishes the following communication to the *Rural Alabamian* on this subject:—

Although it has long been known that the stock has more or less influence upon the graft, modifying to a greater or less degree the quality of the fruit, yet in practice it is not recognized or thought of by most fruit-growers. First, a large class of nurserymen bud and graft upon seedlings, paying no regard whatever to their origin or quality—the only item of consideration being to have the bud or graft true to name. This is one cause of the variation of different kinds of fruit, even in the same orchard, and in trees growing near each other in the same variety of soil and subject to similar influences. We noticed this particularly in our peach orchard the past season. Some trees of the Hale's Early growing near each other differed in the time of ripening their fruit at least two weeks, besides, the size of the fruit varied and even its quality had a sensible difference. All this occurred in the same row of trees, and in similar soil. This can be accounted for only from the influence of the stock upon the bud. The late ripening fruit was on trees the roots of which were from seedlings of late ripening fruit, etc. The same modification in time of ripening, and also in size and quality of fruit, were noticed in several other kinds of peaches.

A striking instance of the influence of the stock upon the bud was lately told us by Mr. Rutledge, of Pond Spring, Williamson County, Texas. He budded Hale's Early upon the wild plum, *Prunus umbellata*, which is quite common in the woods of this portion of the State. Its fruit is also generally very sour and unpalatable. The bud grew and bore fruit, but the peaches were more than a month later in their time of ripening, and also smaller and of inferior quality—not fit for men to eat, and only good for hungry hogs, or perhaps for cooking.

The lessons taught by such instances are full of valuable suggestions to all fruit growers.

Directions for Treating Tree Seeds.

Mr. A. Bryant, Jr., says most deciduous tree seeds should be mixed with twice their bulk of sand or earth, as soon as received, and kept where they will be cool, and moist (not wet) until season for sowing. Freezing will not hurt them, if kept frozen until time for planting. If very dry, soak the seeds two or three days before putting up.

Exceptions to above are ailantus, catalpa, the birches, etc., which should be sown dry.

Honey, locust, coffee tree, and red bud will germinate sooner if soaked in warm water two or three days before planting.

Evergreens and larch seeds should be sown in beds under lath or brush screens, and covered lightly with fine earth.

Fruit seeds are usually soaked from two to six days, according to dryness, and then mixed with moist sand or earth, and kept frozen until time for sowing. Our Morello cherry, however, being kept fresh, will not need soaking. We recommend to the inexperienced that they shade all young plants the first season.—*Farmer's Union.*

Heeling-in.—This term, or "laying in by the heels," is used by gardeners to designate a kind of temporary planting. The plants are laid closely together, and the roots covered with earth. This operation checks growth, and yet keeps the plants alive. It is often very convenient when one wishes to remove plants from a piece of ground, and the place where they are to go is not yet ready, to heel them in. Trees are often heeled in for the winter, they being taken up in autumn, and laid in trenches at an angle of 45 deg., taking care to fill in the earth so completely as to leave no spaces among the roots.—*Exchange.*