

## CULTURE OF FRUIT.

## GRAFTING.

*From the Albany Cultivator.*

One of the most important operations in the culture of fruit trees, is the propagation of varieties by *budding and grafting*. By means of these we exchange the unpalatable fruit of the wilding for the most delicious productions which art and nature combined have been able to furnish. And there are few gardens or orchards which might not be greatly improved by the introduction of the best varieties, the cultivation and care of which cost no more than that of the most worthless.

Budding and grafting have their respective advantages and disadvantages. Budding, requires less skill and care, but needs the subsequent attention of removing the ligatures, and heading down the stocks. Grafting does not need this subsequent care, but more skill is requisite in the operation. The peach and nectarine can rarely if ever be propagated by grafting; and budding cannot be performed on large and unthrifty stocks, which may often be successfully grafted.

Books on gardening describe many different modes of grafting; but the multiplicity of these often more bewilder the learner than instruct him. By understanding the *essential* requisites the operation is at once simplified, and it may be varied at pleasure without danger of failure. The two chief points are, *that the sap flowing upward through the stock pass freely into the graft, and that it returns without interruption from the inner bark of the stock*. To secure these both the wood and bark in the stock and graft, must be so cut as to admit of being placed in close contact, and when so placed, the line of separation between the bark and wood should, on one side at least, exactly coincide in both.

The most common and useful modes are the *whip and cleft grafting*. Whip grafting is adopted where the stock and graft are of nearly equal size. To perform it, the stock and graft are cut off obliquely with an equal degree of slope, so as to leave two smooth straight surfaces which may be brought into close contact. A transverse cleft with the knife is to be made near the middle of each of these surfaces about one-third of an inch deep, so that when they are pressed together, the tongue and slit thus made in each, may mutually and firmly interlock. It is then usual to bind them to their place with bass or corn husk; but it is better to have the jaws of the cleft in each so firmly pressed together as to render this unnecessary. The whole is then to be closely wrapped in a grafting plaster.

Where the stock is more than half an inch in diameter, cleft grafting is preferable. The stock is first cut off horizontally, and a split made in it at the middle of the cut surface an inch or two in depth; in this the graft, cut wedge-like, is inserted. To do it properly, it is requisite that the graft be so cut, as to fit the split as nearly as possible, which is to be opened by a wedge on the side opposite from the place for the graft, and that the jaws of the stock be strong enough to press the sides firmly and closely. After this, the plaster is applied.

It is convenient, in grafting, to have two knives, one chiefly for cutting, and the other very sharp, for smoothing the surfaces for contact.

All the branches and buds on the stock, must be carefully removed, that the sap may all go to the nourishment of the graft. Failure is often caused by a want of this care.

In heading down old trees, it is a common practice to graft into the large branches; it would be much better to cut off those branches, and to graft or bud into the young shoots which spring up in their places.

The practice of using clay to cover the wounds, is now nearly superseded by the far neater and better mode of applying plasters of Grafting Wax. These are made the most readily and cheaply by spreading the warmed wax over a sheet of unsized paper with a knife, or with a brush when melted, and afterwards cutting up into plasters of the requisite size. The best and cheapest wax is made by melting together one part of beeswax, two parts of tallow and four of rosin.

As grafting early in spring is generally preferable, (more especially for the *cherry*;) it becomes necessary in cool weather to soften the wax by artificial heat. A kettle of coals, or a lamp, may be used for this purpose.

## BUDDING.

Budding is always to be performed when the bark peels freely, which takes place when the stocks are in a rapidly growing state. Cherries and plums should always be budded by the middle of summer; apples and pears often continue growing rapidly a month later, and peaches may be done even as late as the commencement of autumn.

It is indispensable to successful budding, that the stock be thrifty, and the shoot in which the bud is inserted not more than a year or two old. No skill can succeed in old or stunted stocks. For the *cambium* or mucilaginous substance between the bark and wood, which hardens into the new wood, and which cements the bud to the stock, exists only in sufficient quantities for this purpose in fast growing branches.

Every bud is an embryo plant, and the object is to transfer this from one tree to another. To effect this, it is only necessary that the bud be cut smoothly from the shoot with a very small portion of wood with it, and inserted under the raised bark of the stock in close contact with the cambium. Provided the stock is thrifty and growing; the bud smoothly cut off, and closely and evenly applied to the stock; the cambium uninjured by removing the barks; and the bud be kept to its place a few days by a ligature of moderate pressure; it is of little consequence how the operation is performed, and there can be little danger of failure.

The common way of cutting the bark to remove it, is to make a transverse cut and longitudinal slit, just through it, like the letter T. The bud is then slid downwards under the bark, in the middle of the slit. The whole operation should be performed with as little delay as possible.

Whatever mode is adopted, the bark should always be *lifted* by placing the knife at the edge, and not by running it *under*, as this always injures the cambium.

After the bud is inserted, the whole should be covered, except the bud itself, with a ligature of moistened bass, corn-husk, tow, or other soft substance, bound round it with just sufficient force to press the bud closely on the stock.

In about two weeks, or as soon as the ligature begins to cut into the stock, it must be removed. Early the following spring, the stock is to be cut off a quarter of an inch above the bud, and in a direction sloping towards it, and all the branches and other buds carefully removed that the whole nourishment may go to its growth. Sometimes (as in the apricot,) it is best to leave two or three inches of the stock above the bud, to tie the young shoot to, that it be not broken down by the wind.

Disappointment very often arises in budding the peach and apricot from the buds, though well set, being winter killed. This may be generally avoided by observing on the trees whence the buds are taken, on what part of

the shoots the buds have withstood the preceding winter, and selecting accordingly. These will commonly be found to be the earliest formed buds on the thickest shoots.

Shoots cut for budding should always have the leaves removed as soon as they are taken from the tree, about a quarter of an inch above the bud. They may then, if needed, be preserved several days in damp moss or cloth.

J. J. T.

Macedon, Wayne Co., N. Y.

## SELECTING SEEDS.

Great improvement may be made by a judicious selection of seeds. In most all crops, some plants will be found more early, or in some respects superior to others. From such, seeds should be carefully selected.

If a cultivator desires to have any production earlier than usual, after procuring an early kind, let the first seeds that ripen, on a well grown and productive plant, be secured, and so proceed year after year, and in this way a variety will be obtained that will excel in earliness.

Every variety of vegetable may be rendered more productive, by selecting, every year, the seeds of the most productive and well formed plants. And this method of improvement will be found the cheapest that can be pursued, as the difference in the cost of good and poor seed is a mere trifle.

Select peas for seed that grow in long, full pods, on vines that bear abundantly, and if you would have them earlier, take those which ripen first. Choose beans in the same way. Select seed corn from stocks that bear two or more good ears, and take the largest and best formed ears. Choose from stocks that are large at the bottom, and run off to a small top, not very high.

If you would have early onions and few scallions, select for seed a few that ripen first, and have a good form. Select the handsomest turnips for seed, having just the form you would choose, if you would have fine crops for the market; and by this selection for years, you will get a variety that may be relied on.

Follow the same rule in every thing. Like produces like, is a general law of nature; the same in the vegetable and animal kingdom: there are some exceptions, but not enough to affect materially the general crop of production, and by these exceptions we may profit; for when the exceptions are an improvement, we may follow them out, and in a short time establish a new race or variety; but when the exceptions are inferior, we can reject them.

These objections to general rules offer great advantages, and a wide field for improvement, while the disadvantage is a mere trifle. As a spark will kindle a great fire, so from a single seed of superior excellence, large crops of this superior production may be raised, and widely disseminated for the benefit of thousands.

There is no subject of improvement so much neglected as this, it is within the means of all, and yet few give attention to it. Too many are content to plod on in the old way, and while they spend much in manure and cultivation, they neglect a much cheaper way of improvement, or to avail themselves of those made by others in this way, when at less expense they could accomplish it, and perhaps more effectually.

We selected seed from the first pumpkin that ripened, in a variety which we cultivated for several years, and last year some were ripe in two months and five days from the time of planting. Numerous instances could be cited of the above remarks, but it is so clear to every common observer, that no evidence is necessary; but it is important that they be reminded of a subject so much neglected, and with so much loss.—*Southern Ag.*