

Garden and Orchard.

Orchard Cultivation.

BY T. C. ROBINSON.

To cultivate or not to cultivate,—is a great question concerning our fruit trees. And it is a question that in spite of prejudices on either side, must not be answered at once by a mere yes or no—at any rate, if the trees are of several years growth. There is so much difference in the richness and texture of soils, and in the relative vigor of the trees, and the depth below the surface of the roots, that a knowledge of the particular nature and conditions of soil and growth—as well as climate—should be fairly considered before deciding. It is true that without any special knowledge or thought, one man with heavy, rich loam, will let his trees go to grass, just not too soon to prevent them from getting well established in the soil, and just soon enough to send the sap into fruit buds, instead of too large and watery growth; that he will keep the cattle out long enough to let the trees grow too large to kill by browsing, and turn in the hogs just in time to keep down the "codlin moth" by consuming wormy windfalls. It is true also that another man may be impelled to grow vegetables among his trees on sandy or gravelly soils, and by the abundance of manure necessary to vegetable culture, further supply the conditions essential to success. And so without much merit of the kind, both may literally tumble into crops of fruit, choice and abundant enough to excite the admiration of all beholders. No wonder each man praises the method, or lack thereof, which brought him success, and that opposite schools of horticulture have resulted! But the positive conditions of success in such extremely opposite cases are not far to seek; and they should be sought; for the rule of chance which may bring two such men success, may prove but a rule of blunder to ten of their neighbors, who happening to choose similar courses under dissimilar conditions, inevitably land themselves in failure.

Rich, moderately heavy loam is doubtless excellent orchard land—if water does not lie near the surface, and if the winters are moderate. The careful cultivator who plants therein will doubtless witness with satisfaction the vigorous growth and green foliage of his trees. But as the rolling seasons bring them to bearing size, he may still find to gladden his eyes nothing but leaves; and it is well if the sappy redundant growth does not burst and blight after even moderate winters. Now if he could only do on a large scale, as the careful gardener often treats a few choice bushes—if he could pinch or clip the ends of all the vigorous twigs in midsummer, the growth thus checked might be diverted into fruit buds, and would result next season in larger crops and finer specimens than could be produced by any mere treatment of the soil.

But farmers have not time to go to the trouble of twiggling every branch. Yet I ask special attention to this point as marking a principle that seems to me of great importance. I state it thus: fruiting as well as healthfulness is decidedly benefited by the utmost amount of sap that can be secured by the roots in rich, deep, moist well-cultivated soil—provided this sap is properly matured by coming in contact with air in the leaves. But as the farmer cannot take time to force the general supply of sap to enter the leaves by "pinching" the new growth, he may accomplish nearly the same thing by seeding the orchard down, and ceasing to cultivate; the new growth is then checked by the grass roots taking up nearly all the supply of moisture at midsummer, before it can reach the roots, and the sap resulting from fall rains consequently is attracted into the leaves, and thence develops fruit buds as soon as it returns down the leaf-stems.

Yet the tree cannot bear fruit for years continuously without a fairly vigorous wood-growth in all its parts. What is to be done when ton after ton of luscious Apples and Pears, taken to grace our tables, reduce our doctor's bills and swell our purses—shall have so far exhausted the original orchard soil and exceeded the yearly fertilization of rains, snows, decaying leaves, and inherent chemical action, as to leave us with sickly foliage, feeble growth and fruits so small and "runty" as to shame our pride and kill our profits? Just here again is where the texture of the soil must guide us, and

where many an ugly but really noble old orchard has been sacrificed through lack of a little observation and reflection. If the texture of the soil is stiff: if it is shallow and underlain by anything like "hard pan," then the roots are probably all near the surface, and the shallowest plowing will cut, and tear and render useless all the sap-gatherers, and the melancholy slow growth of the trees will fail for years to improve, or will even be succeeded by a more melancholy dead stop! Yet, we hear of cases where whole wagon-loads of roots have been taken out of an orchard, to the consequent benefit of the crop. How is this? Simply doubtless because some soils are so deep and mellow, and yet so moist and well drained, that multitudes of roots spread all through it—deep as well as shallow—and the removal of the top layers still leave the trees with plenty to depend on below, until those cut can send out new fibres. Now, if your soil is like this, go ahead; tear it up and keep it in cultivation, to the great increase of vigor and renewed productiveness of your trees; provided always that enough roots remain below the plow to keep the sap moving. But, as previously stated, no such treatment will answer with soils whose shallowness and hardness have kept the roots near the surface. Only one word conveys the remedy for such a case, that is MULCH. If good manure, or poor manure, or unleached ashes, or even straw or sawdust, can be thrown on as far as the roots extend, in such quantities as to kill the grass, and keep the surface loose, the benefits of returning health and fruitfulness must result, to a degree, and with a rapidity probably proportioned to the richness of the material used, and the completeness with which the grass is kept down. The mulch should be renewed as often as the grass tries to start; or the harrow and cultivator may be run through after the grass roots decay, if the ground is not too hard.

The case in which the soil is very light seems to demand a very different course—constant cultivation and frequent manuring. Doubtless mulching would be of some use; but grass roots have a vigor and persistency on such soils that will show little discouragement in the face of treatment that would utterly kill them on heavy land. Don't coax wire-grass with top-dressing; plow it down: when it is down keep it down with the cultivator, and put your manure under or on top as you feel inclined; but you must manure and you must cultivate to secure best results on such land.

A good rule for all orchards seems to be: Never plow twice when once will do. Some people grow other crops in their orchard—I do; but crops that can get along with the use of only such implements as run no deeper than the cultivator, will naturally result in least injury to the roots. Another plain rule for orchard culture naturally occurs here: Grow no crop near the roots except what can be both cultivated and manured.

In this connection there is manifestly a great difference in different kinds of fruits to be taken into consideration.

The plum has a greater tendency to fruitfulness than seed fruits, and may be planted freely on the richest and heaviest soils on which it will stand the winter. If it lives it will bear, no doubt—curculio and black-knot not interfering. The peach has, with equal tendency to productiveness, a greater tendency to form too tender growth on rich land; it may be put on poorer, lighter soils than the others.

But even in the same class of fruits we find varieties like the Northern Spy that come soon into bearing on light land, and slowly on clay; and others like Wagner and Duchess of Oldenburg, that bear early and persistently anywhere; the latter being benefited by cultivation on medium soils, and the former hindered from bearing; so that the problem of cultivation must be decided with some regard to the varieties planted.

Nothing has been said in this article about pruning, after the orchard is out of bearing, as this seems to be required in about the same way and degree on all soils, and may therefore be treated as a distinct branch of horticulture.

As a rule large apples do not keep as long as small ones of the same variety. On the other hand, the well-formed but very small and unripe apples often found in the centre of a thick top are not desirable, as they are never good eating, and they often wither and fail to keep well. Overgrown apples, even though they are first-class in other respects, should usually be put with the number twos.

Winter Protection.

BY HORTUS.

The most trying months in the year on plants and trees are November and March, and the open weather we occasionally have in January and February. During these periods the prevailing weather is hard, frosty nights, followed by sunny days with an extreme heat at noon. From fifteen or twenty degrees of freezing temperature at midnight, to sixty or seventy degrees of heat at noon-day is quite a severe contrast and a trying ordeal for exposed plants and trees to pass through. As a general fact these extremes cause all the injury done to our gardens, so little care is paid as a rule to guard against this weather, and all this time do we so often see plants which have been dearly bought and much time and labor spent over, exposed without the slightest protection. The finest litter or mulching for protection purposes is the fallen leaves, "nature's own covering." Though all leaves are suitable, still the best are the largest kinds, such as the Maple and Chestnut. These are generally plenty to be had either around yards or lanes, or in convenient woods, and a very pleasing and not laborious occupation it is to gather them. For covering strawberry beds, and all low growing perennial and biennial plants, they are invaluable. Clean, with no noxious seeds to sow the ground, they remain till spring, when they can be raked off and mixed with manure for fertilizing. It will be necessary to spread a few branches on them to hold them from being blown about by winds. Pine branches make a capital protection for large plantings, are easily procured, laid down and taken away. In lieu of either leaves or brush long straw manure answers capably.

Low growing shrubs, like Roses, Hydrangeas, Dentzias, &c. require the tops bending down and covered with straw litter. Grape vines, Clematis and other half hardy climbing plants should be carefully taken down, the necessary trimming done and then be neatly straightened into shape, tied together near as convenient without breaking, bent to the ground if possible, and covered. When it is not convenient to have any mulching, covering over with soil is as good a plan as any, and is always handy. Banking up, keeping banking up, over the tips of the raspberry canes and around the trunks of the trees and bushes. You cannot do too much of this work. It is also a good protection against mice, who commit the most damage in winters that have the most snow. A very little will protect almost anything and a common practice amongst many good gardeners, is simply to bend the tips of canes and stems down to the ground, holding them there in place by a spadeful of earth. Of course, when we have snow that is the best protection of all, but as we have already said, it is the time before snowfall, during thaws and when "winter lingers in the lap of spring," that causes the most damage; and another necessary protection is proper drainage—both under-drains and surface-drains should be looked after and made. Low places, and particularly walks, should have surface drains made from them to carry off the rain and snow-water, that otherwise would remain and cause winter killing, as it too often does. Twisting loose ropes of straw around the trunks of young trees is a good plan to protect them. It will be found profitable to thus protect and cover everything, as we do not know of anything causing more disappointment to the farmer than winter-killing or upheaval. Clayey soils must have protection to prevent upheaval. If the annual loss of stuff by being winter-killed could be calculated at its fair value, it would make a gross amount that would be alarming, and this leads us to the most important feature in winter protection, which is shelter belts and wind breaks. Therefore plantations of trees should be made at once, when they are not, for very little reflection on the part of an observer will convince him of the great value trees are to the country, in ameliorating the rigors of severe winters, by arresting winds and giving shelter, but this is too large a subject to enter upon now. I will sum up by repeating: Gather the leaves in. Mulch everything. Manure plantations of currants and raspberries. Top dress aparagus and rhubarb beds. Under drain and surface-drain. Don't put off anything to the spring that you can do this fall—"a word to the wise is sufficient."