Horticulture.

THE ORCHARD.

Grafting and How To Do It.

The proper time to graft is in the early spring, just when the buds of the trees which are to be grafted are swelling, in an average season, say from the middle of April to the beginning of May. The operation may be successfully performed later, even when the foliage is put forth if the scions have been kept in a dormant state. But it is best to have it done early. The scions should have been cut in the fall and packed carefully away in moist sand, damp moss, or sawdust. They should then be put away in some place, a cellar for instance, where they will not be frozen, and will not be subjected to alternations of temperature. They must not be allowed to get dry, or they will become shrivelled. If not provided in the fall, they can be cut in the spring at a time when the wood is not frozen, and packed away in the cellar. Scions of stone fruits should be secured before the sap begins to run. Apples and pears can be cut afterward. Be careful not to select blossom buds. Cut wood of one year's growth.

On small trees not exceeding an inch in diameter, whip-grafting is practised. This is done by making on the stock an oblique upward cut, smooth and sloping. In the centre of this cut make another cut downward, so as to form a slit or receptacle for the scion. Cut the scion, which should be of two or three buds, one bud being near the point of union, obliquely downward, and form a tongue on it to fit exactly into the notch in the cut on the stock. Now place them together, and be careful—this is the essential point—that the inner bark of the scion and of the stock are in contact somewhere. To insure this contact, slightly cross the scion and the stock. If the scion is much smaller than the stock, lay the inner barks together on one side. Having placed them together, cover the place of union with grafting wax, of which more hereafter; or wrap with yarn which has been saturated with melted grafting wax, and then cover with the wax.

With trees and branches more than an inch in diameter, cleft-grafting is the proper mode to pursue. The tree or limb should be sawn squarely off at a place where a clean split can be made. With a thin chisel, or some such tool, split open the stock neatly. Have ready some soft wood wedges, narrower than the stock to be grafted. Drive one of them in the split till it is open a little wider than will receive the scions. Two scions should have been cut to a true wedge shape, leaving the sides which are to be inside slightly thinner than the sides which will be in line with the bark of the stock. This is to insure that the contact will be on the side of the scion where the union will take place. Place one scion on each side of your soft wood wedge which is holding open the cleft. Put the scions in line with the grain of the stock, and then cross slightly to insure contact. Now withdraw the wedge slowly till the scions are held firmly, but not so tightly as to injure them. Then break off the wedge, cover the end and every wound carefully with grafting wax, and the thing is done. Breaking off the soft-wood wedge is more useful on large limbs. In smaller limbs where the squeeze is not great, it can be withdrawn altogether.

In splitting the stock, a tool should be used which will cut the bark as fast as the wood is split, so that a smooth place is made to receive the cutting. The scion should have a bud at the point where it will form a junction with the stock.

If a large tree is to be grafted, take care that the top will be made of the right shape, and be careful that it is not made lop-sided. It is best to graft only one side of a tree in a year, leaving the limbs on the other side to produce foliage to sustain the tree and to elaborate the sap during the first year. About the last of July, cut off the young sap-shorts from the grafted limb. The scions will then be able to take all the sap. Then, the next spring, graft the remaining limbs of the tree and cut off sap-shorts as before.

Graft side limbs horizontally. If the cleft is made perpendicularly the upper graft will shade the other. If both grow, and are too close, cut one away.

Have your tools sharp and in perfect order, so that clean, smooth cuts can be made. With a little practice and the exercise of care and common sense, any person can do his own grafting. By carefully observing the directions we have given, at least three-quarters of the grafts should grow.

Do not graft a tree that is unsound. It is trouble lost to graft a tree that, when cut, is discolored or rotten. A homely-looking tree may be made a thing of beauty and a joy for many years by a judicious sawing off of unbalanced limbs, and grafting. In three years, a worthless variety can be changed for a desirable one.

First class grafting wax can be made as follows:—Take two pounds of resin; half a pint of linseed oil; three quarters of a pound of beeswax. Melt all together, pour into cold water, and work with the hands as you would if it were molasses candy, till it will draw white. This is good for use on apples and pears. For the stone fruits, melt the wax and apply while warm with a brush or small paddle.

Other preparations for grafting wax may be made with the following ingredients: three parts resin, two tallow, two beeswax; another, a pound and a half of resin, a quarter of a pound of beeswax, and a quarter of a pound of linseed oil.

Apples for Carleton County.

EDITOR CANADA FARMER:—I would like if you or some of your correspondents would give the names of some of the hardiest sort of apple trees. The country here has been flooded with agents, but none of their trees have stood the climate except the Crab tree. I intend planting an orchard in the spring, of about four acres.

County of Carleton, Ont. SUBSCRIBER.

In the county of Carleton, remote as it is from the influence of the great Lakes, only the hardiest apples will flourish. The following varieties will do well:—Early Harvest, Red Astrachan, Duchess of Oldenburg, Tetofsky, Golden Russet, St. Lawrence, Alexander, Tolman Sweet. Messrs. Leslie & Son, to whom we submitted a list, recommend also:—Fameuse, Swayzie Pomme Gris, Northern Spy, King of Tompkins County, Ribstone Pippin. Pewaukee, Wallbridge and Haas, are spoken of as being very hardy and productive, but we do not know whether they would be precisely suited to Carleton county.

Ontario Fruit-Growers' Association.

The annual meeting of the Ontario Fruit-growers' Association opened at Hamilton, on Feb. 11, with a large attendance. After formal business, the subject of "How to maintain the fertility of large orchards" was taken up. President Burnet was in favor of stirring the soil and manuring young trees, and to older trees applying ashes. It would be well to thin the blossoms. Dr. Cross thought scraping the bark, thinning out old limbs, and applying carbonaceous manures, as chip-manure and sawdust, were beneficial. Mr. Moyer said black muck was good, as a mulch. Mr. Bowslaugh ploughs strong manure under; his soil is very sandy. Mr. Leslie ploughed annually to keep down weeds, sprinkled with lime and ashes, and scrapes the trees. Mr Culham was in favor of scraping and washing the limbs with soft soap. Mr. Newton uses leached ashes and keeps the soil stirred. Mr. Cornell used ashes, but did not like scraping. Mr. Caldwell said pruning at the commencement was the most important thing. Trees should be scraped and kept clean. He applies ashes and muck. American trees, he said, are not suited to Canadian climate. Mr. McKay applies barn-yard manure. Mr. Burt thought the scraping should be done after rain. Mr. Wolverton said the presence of moss showed an unhealthy state. He had trees 75 years old and vigorous. He keeps them well thinned. He believed in ashes. Rev. Dr. Read thought pruning too early was a mistake. Turning in pigs helped to destroy insects. Mr. Jones said unfermented manures were not necessary for fruit trees. His idea of pruning was to commence young; prune in winter for wood, in summer for fruit. Compost should be applied in the fall. Mr. Saunders applies gas-lime to the soil, crops with clover and buckwheat and turns it in. Mr. Lee puts a stone under his trees to keep them from sending down tap-roots; takes out the subsoil and replaces it with top-soil. Don't allow people with hard boots on to climb into his trees. Mr. Anderson thought a neglected orchard should not be pruned too severely. Mr. Arnold puts large pieces of soap in the crotches of his trees. The soap melts and runs over the trunk and keeps off insects. Mr. Murray approved of early pruning and keeping trees small. He kept apple-trees low and flat. Mr. Graham said the secret of success was, to keep the trees clean and free from lice.

Rev. Mr. Burnet spoke of the blight on apple-trees last summer. He had noticed that, if trees were not scraped, there was no blight on them. Mr. Cornell thought the blight was not caused by insects, but by atmospheric changes.

The subject, "Are hardy grapes profitable?" was taken up. Mr. Holton thought the Concord the most profitable, and spoke favorably of Roger's Nos. 4, 9 and 19, also of the Salem, as being early and productive. The Delaware was good for family use. Some seedlings, both red and black, grown by Mr. W. H. Mills, promised excellently. Roger's No. 15 was uncertain in ripening; Roger's No. 43 had hardy vines; but he could not give an opinion as to the wine-yielding qualities of these grapes. The great point here was to get grapes that ripen well. Mr. Caldwell said that the Concord was the favorite, north. Mr. McCallum said the Delaware would hold its own. The Crevelling was his favorite. Mr. Woodley thought the Crevelling earlier and better than Concord. Mr. Lee thought the Concord ahead. Tokollen was the best keeper. In early grapes, he preferred Adirondark and Hartford prolific. Preferred Concord to Roger's kinds. Thought the culture of other fruit preferable to grape-growing. Mr. Hoskins said the market was over-stocked. Mr. Fearman's favorite was Roger's No. 3; No. 4 is very black and hardy; No. 15 is late and brings a good price. Isabella was killed every winter. Allan Hybrid was good, but should be laid down. He used sulphur against mildew. Mr. Jones grows three acres of Hartford, Delaware and Concord; got three cents a pound and made a profit of $300 an acre. The earliest grape he knew was the Champion or Tolman's seedling. It was ten days earlier than Concord. He found Hartford and Delaware most profitable. The President had found the Tolman seedling the earliest. Col. McGill said that at Oshawa the Salem was good and sold at 10 cents a pound. Roger's No. 3, 4, 9, 15 did well; so did Concord. Isabellas did not ripen well. Mr. Biggar, Wenona, had found great profit in Isabella. Delaware did well, but wanted care. Did not think the market over-stocked. Thought grapes were sent to market carelessly, which was a great mistake. The consumption of grapes was increasing. Not many years ago a gentleman at Grimsby had taken ten days to sell a basket of grapes, and now he sends, during the season, two teams daily to Hamilton with grapes. One acre had yielded him 365 baskets last year, weighing 7,295 lbs, and fetching $437 50. Mr. Bell thought Hartford most profitable, then Concord, next Delaware. He got 600 pounds of grapes from a piece of ground 100 by 50 feet. Mr. Woodley grew the Rumelan, but Salem was his favorite. He spoke well of Roger's 4, 15, 19. Mr. Lister found 4 kept well, and 15 tolerably hardy.

The subject of the legal size of the apple barrel was discussed by Messrs. Smith, Hoskins, Jones and others. A resolution was passed appointing the President to call upon the Secretary of State, and explain that the Association wanted to have the legal size made to correspond with the Western New York barrel, which contains one hundred "streaked" quarts, or less by a peck than the common flour barrel.

A special committee was appointed to secure co-operation in the destruction of the codling moth.

WANTED, A PLUM.—A correspondent wants some CANADA FARMER reader to state whether there is any plum in Canada perfectly hardy, a good and early bearer, and curculio-proof.

AGE OF DECLINE IN ORCHARDS.—A member of the Illinois Horticultural Society, at a late meeting, said he had given much attention to the condition of the older apple orchards, and had come to the conclusion that beyond thirty years of age, the average apple orchard in that region ceased to be profitable. From other sources at the west we had adopted the opinion that forty years was the longest general average. In New York we have found that apple orchards begin visibly to decline at sixty, some as early as fifty, while a few trees on the borders of gardens, where they receive manure and cultivation, attain an age sometimes of seventy years or even more.

HARDY APPLES.—The Minnesota Horticultural Society recommends, through a committee, the following three apples as worthy of general cultivation, the result of many observations on their endurance of the coldest winters, namely, Duchess of Oldenburgh (although killed in some localities), Tetofsky, and Stewart's Sweet (very hardy), while the variety known as the Wealthy, with some objection, was recommended for trial. The following were next in hardiness, namely, Fameuse, a general favorite; Wallbridge, approved as far as known; St. Lawrence, and Tallman Sweet. Pears were badly injured, and none were recommended.