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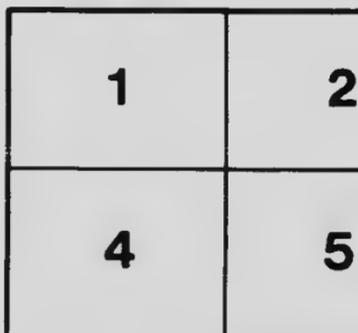
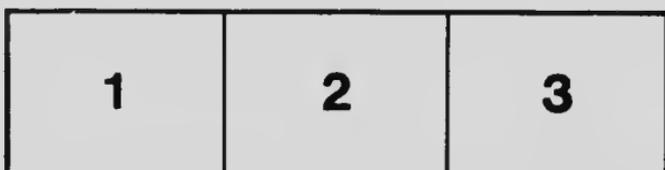
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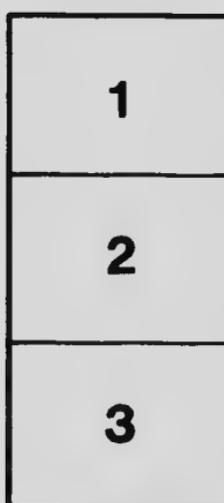
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Circular No. 27



Pruning Trees for a Cold Climate



Manitoba Agricultural College

Winnipeg, Canada

Published by the authority of
Hon. Geo. Lawrence, Minister of Agriculture and Immigration

AGRICULTURAL COLLEGE,

Winnipeg, Man.

October 23rd. 1914.

**Hon. George Lawrence¹
Minister of Agriculture,
Winnipeg.**

Sir:

This circular is a reprint of a paper delivered by Mr. D. W. Buchanan, late director, Buchanan Nurseries Co., St. Charles, Man., before an Annual Meeting of the Manitoba Horticultural and Forestry Association, at the Agricultural College. As it contains much information of value to the farmers of Manitoba I recommend its publication.

**W. J. BLACK,
President.**

Pruning Trees for a Cold Climate

There are perhaps few questions upon which there is a greater divergence of opinion among horticulturists than is the case in this matter of pruning. We find all sorts of theories regarding pruning. One man is quite sure that it should be done in the fall, while another will advocate the spring. Others will declare that winter is the correct time to prune; and still others will advocate summer pruning. Then there are a good many who think that it makes little difference at what season of the year the work is done. This has given rise to the saying that the time to prune is when the knife is sharp, meaning that it can be done any time. Now, there is a good deal of wisdom in saying that the time to prune is when the knife is sharp, for a good, sharp knife is by all odds the best pruning instrument. It makes a clean cut that will heal over readily and does not injure the bark around the cut. Pruning shears usually bruise or loosen the bark around the cut, thus retarding the healing over of the wound. Moreover, if all pruning were done with a knife, it would not matter greatly what time of year the work is done, for such light pruning as can be done with a knife may be done with safety at almost any time.

There is, however, a proper time to prune, I believe, and that time is when the tree, shrub or plant really stands in need of the application of the knife. When there is something in the condition of the plant itself that calls for pruning. While I believe it is important to know what is the best time of year to prune, it is also of even greater importance to know whether or not the plant under consideration really will be the better of pruning. Pruning should not be done at any time, unless there is some intelligent and definite object in view in undertaking the operation. Who would undertake to perform a surgical operation upon a human being without some good reason? Then why undertake an operation upon a tree without knowing why you are doing it and what you expect to gain thereby. Some people imagine that they must prune occasionally, and at certain irregular intervals, when the spell comes on they gather together saw, knife and shears and proceed to butcher up the defenceless trees in wholesale fashion. Such rough and tumble pruning is usually more injurious to the subject operated upon than otherwise. In our severe climate

many species and varieties of trees will not stand liberal pruning. With the apple, for instance, pruning must be done with great care and never to excess.

In order to prune intelligently, the operator should understand something about the nature of plants in general, and of the varieties which he proposes to operate on in particular. If he does not know the why and wherefore of his proposed pruning, he had better put his implements away and give the plant the benefit of the doubt. Great harm is often done by indiscriminate pruning by persons who do not understand the habit and requirements of the plant they are operating upon. Ornamental shrubs are not infrequently prevented from blooming by mistakes in pruning. Different species of plants require quite different treatment. The rose and the Hydrangea, which bloom on the new growth of the current season, may and should be cut back quite severely in the fall or early spring. The cutting back while the plant is dormant, encourages a strong growth of new wood, upon which the bloom will be produced. The same treatment with the Hiac and many spireas would deprive the plant of all its blossom buds and no bloom would be the result. The same principle applies to pruning for fruit. Black currants produce fruit most abundantly on wood in the second and third season of its growth, while red currants produce best on wood one year older. Knowledge of these facts as applied to the different plants, gives the key to the proper pruning of the plants generally. With the currant, for instance, cut away the wood older than three years, so as to provide for a continuous supply of wood of the best fruiting age, for by cutting away the wood that has passed its day of usefulness, you make room for and encourage the growth of new wood. By cutting away a little of the oldest wood every year, in the fall or early spring, you will always have new wood of fruiting age coming on to take its place.

The apple, I have said, should be pruned with great care and moderation in this climate. Severe pruning is very liable to injure, or perhaps destroy the trees. In our dry and severe climate, trees generally will not stand as much pruning as they would in a moist and mild climate. I have known even our native maple to be badly damaged by reckless pruning. A tree butcher, who had gained his knowledge of pruning in a soft and mild climate, would be a dangerous man to turn loose with pruning implements in a Manitoba apple orchard. Might almost as well give such a man an axe at once and let him start

on the trunk of the tree. The young apple tree should be cut back severely when it is first planted out, but after that give very little pruning, beyond keeping down suckers and water sprouts, which should be cut out when they are quite small. Limbs which will rub or interfere with others should of course be cut out, but with care and watchfulness this can be done while the branch is quite small. If trees are given reasonable attention, there will seldom be occasion for cutting large limbs. It will be found possible to do about all the pruning that is necessary when the limbs are so small that they can be cut out with a sharp knife, or even rubbed off with the hand.

Plums will stand rather more pruning than the apple, but the same plan of cutting out branches when they are small should be followed. In training the plum the object should be to form a rather close and compact head and prevent the formation of weak crotches. Trees are sometimes destroyed by this splitting down from the crotches. Where a tendency to split is noticed, no time should be lost in bolting up the tree. For this purpose an ordinary carriage bolt, with washers, may be used.

Now, in regard to the best time to prune, I have said that light pruning, such as can be done with a knife, may be done at almost any season. There are certain conditions however, which should be taken into account in considering the best time of year to prune, considering the question in a general sense. In the early spring the trees are full of sap passing upwards, and if the trees are freshly cut at this time, severe bleeding will result with some species. Pruning at this season some times results in decay, setting in about the wound, or what might be called a dying back. Later the sap is worked over in the leaves and goes to the cambium layer. At this season the healing process is very rapid. Pruning done now, when the tree is in its most vigorous state and is building up new tissue rapidly, will soon heal over. It is for this reason that we prefer to look over our trees in June and do such pruning as is considered necessary. Nature is then in her most vigorous state and is better able to heal over the wounds and bring about a speedy recovery from any injury that may have been caused by the surgery performed on the tree.

We are beginning to find out that trees and plants are very much like animals. Nature seems to be working very much along the same lines in the vegetable as in the animal kingdom. That mystery which we call life, has its inception, development and decay under wonderfully similar conditions in the animal

and the plant. The human animal, even, is no exception. If we had to perform a surgical operation upon a human being, we would endeavor by every possible means to bring the party to be operated upon into as vigorous a state of health as possible. So we think that when the tree is in its most vigorous state is the best time to prune.

I have just referred to the resemblance between the animal and vegetable kingdom, and while this idea is before us we may make further like comparisons. In pruning trees, care should be taken to protect the wounds. Trees and plants are subject to attacks of fungi and bacteria. The microbe which causes lock jaw in the human animal, is quite harmless when only sound, healthy epidermis is presented to it, but scratch the skin and lock jaw will be the result. Hence in modern surgery the greatest care is taken to prevent the introduction of germs. Cuts and wounds on trees likewise require to be protected to prevent the introduction of disease germs. All cuts should be immediately painted with a heavy paint. If the presence of disease is feared in any tree pruned, the implements used should be disinfected before operating on another tree, for disease may be carried from one tree to another, or even from a diseased to a healthy limb on the same tree. We carry a can of lamp oil, into which the knife or shears can be dipped.

Pruning a tree while it is dormant, stimulates new growth. Pruning heavily while in leaf, might give the tree a severe check, by removing so much of the leaf surface, for it must be remembered that the leaves are the stomach and lungs of the tree. If severe pruning must be done, it might be better to leave some of it until fall, taking care to paint all cuts well, so as to protect them from the weather and germs, until the healing over can start the following spring.

Pruning, we have said, should be done with a definite object in view. With fruit trees and plants, the main object is to secure more and better fruit, and at the same time control the form of the plant. We have seen, as shown in the reference to the currant, how the quantity of the fruit can be greatly increased by proper pruning. The size and quality of the fruit is also improved. Trees can also be kept in more symmetrical form, and in such shape that they will withstand the action of wind, or at least be less liable to damage from storms. With shrubs the main object is to keep them in good form and secure abundance of bloom. The best form of a plant depends

to a considerable extent upon the species or variety. The carving of trees and shrubs into various absurd and fanciful forms, is often to give them a hideous appearance, in my opinion. The form which the plant naturally takes, is usually the best form for that particular plant. In pruning we should study and assist nature. For an avenue or street tree the best form is a straight central trunk, with the branches radiating therefrom in symmetrical order. Pruning at the right time is of great service in giving good form to such trees. Species or varieties that do not lend themselves readily to this form, should be avoided for avenue purposes.

We go into the forest and observe the trees all about us, tall, straight and majestic, all as if were vying with each other to reach up to the sunlight. But here and there we observe a puny, stunted specimen, that instead of reaching straight up to the light, has grown off in an oblique direction. It has now been far outdistanced by its neighbors and is doomed to slow and early decay. It is being robbed of light and air by its more prosperous fellows. These are the failures in the forest of tree life. When but a tender sprout it met with some obstruction in its upward course. Perhaps a leaf of the forest settled upon the tiny seedling and turned it from its straight upward course. And here again how close the resemblance to human experience. Speaking figuratively, the woods are full of the human derelicts, who by bad influences, or the formation of bad habits in early life, have doomed themselves to lives of wretchedness and misfortune.

Trees growing in a block in the forest, support and assist each other in taking on a straight, upright form. When grown in the nursery or under cultivation, they require the care of the skillful gardener to watch over and care for them, and assist them in taking on a desirable form. They must be given special attention while young. Strong side branches may form, which threaten to outgrow the main central stem, and which would leave the tree badly balanced, unsymmetrical, and perhaps in a weak condition, subject or liable to break down in the storm. These bad habits in the tree must be corrected at once. The longer they are left the more difficult it will be to secure a beautiful, symmetrical tree. If left too long, there will come a time in the life of the tree when it will be too late to overcome the bad habit. The tree must remain deformed or badly balanced through life. The bad formation may even lead to early destruction, through the splitting or breaking down

of the tree when the storm comes. In the hands of the skillful gardner, a little correction here, by cutting back an overreaching branch, and a little cutting out there, and the tree is kept in strong and symmetrical form, well able to resist the storm. As the tree grows older, it will require very little attention from the gardner. Its habit has become fixed and it will remain, a straight, strong, compact, symmetrical tree. A thing of beauty. The delight of all.



