

# THE CANADIAN HORTICULTURIST

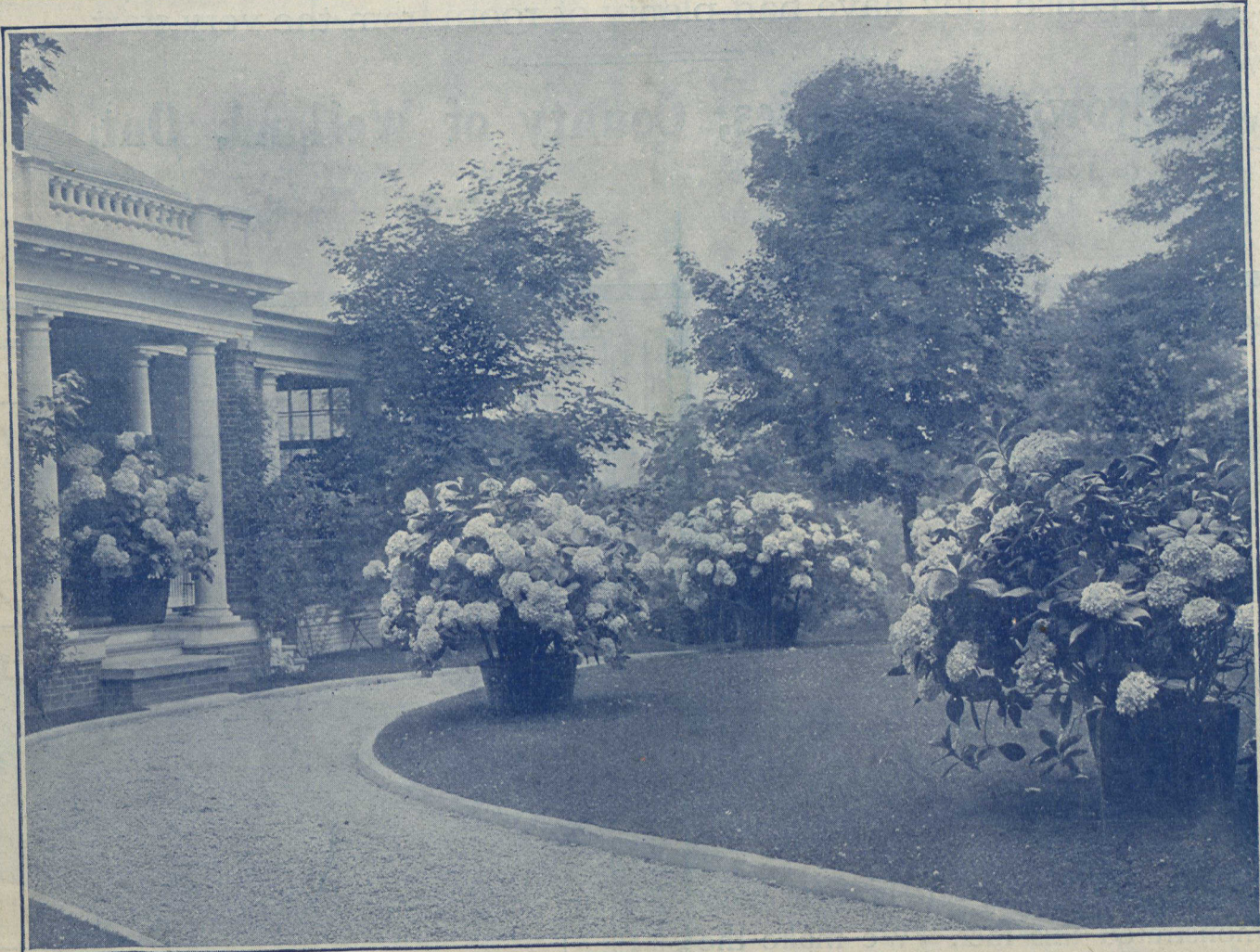
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JULY - - 1912  
Vol. 36 No. 7

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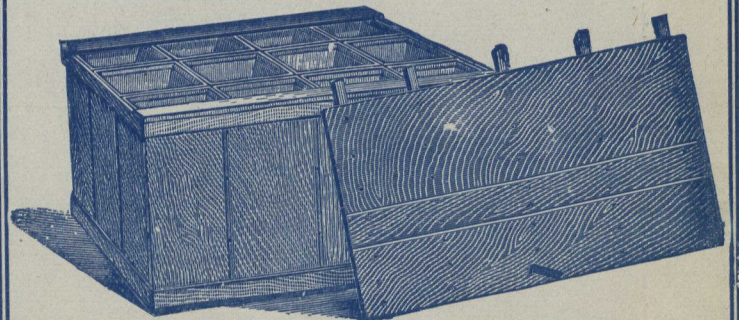
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# The Canadian Horticulturist

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Driveway, Home of J. G. Moore, St. Catharines *Cover*  
 Photo by H. C. Goodman, St. Catharines

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# Cultivation and Cover Crops

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**O**RCHARD CULTIVATION should commence early in May. Use the plow first turning the furrows away from the trees. Do not plow more than six or seven inches deep. From then on cultivate often enough to maintain a good mulch of loose soil and to keep down all weeds. About the middle or end of July plow again, this time towards the trees, so as to form a ridge to run water away from the trees during the winter. Cultivate the surface well and you are ready for your cover crop.

**T**HE ADVANTAGES of a cover crop in the orchard are many. It serves to keep down weeds during the busy months of late summer and fall when cultivation might be neglected. It forms the cheapest method of adding humus to the soil. It assists in checking excessive and late growth, thus maturing the wood and preventing the danger of winter killing. It stores up the plant food in the soil which might otherwise be lost by leaching. It prevents washing of the soil in spring and winter and helps to hold the snow during the winter, forming a natural protection to the trees.

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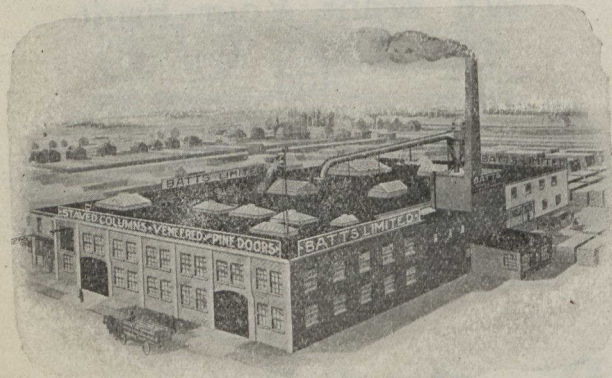
Watch this page for further Information on Orchard Care and Management

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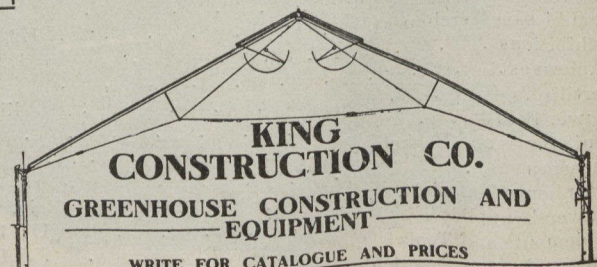
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# The Canadian Horticulturist

Vol. XXXV

JULY, 1912

No. 7

## The Thinning of Fruit

R. M. Winslow, Provincial Horticulturist, Victoria, B. C.

It is only a few years ago that any of us first understood at all definitely what was meant by "thinning fruit." Now practically all commercial growers instinctively think of the removal of some of the fruits at an early stage in their growth, to permit of the greater perfection of the rest.

What was unheard of a few years ago becomes widely talked of to-day, and is the common practice of to-morrow. This has been the history of spraying throughout the apple districts, while pruning has gone through a similar evolution, though in a more irregular fashion.

Thinning as a feature of orchard practice on a large scale was probably first adopted in California, and was soon after applied to apples and pears in the producing districts of the Pacific Slope. It is in these districts that high freight rates and a long haul to markets has made essential the production of the greatest possible percentage of high-class fruit.

Only good fruit can be sold at a profit in western packages and under transcontinental freight rates, but the valuable lesson was learned that care in all features of production results, not in a minimum of profit, but in a maximum of profit; in other words the high expenditure per acre involved by intensive methods produces not a lower profit per box of fruit, but a higher one. The west has taken this lesson to heart and the changing market conditions are bringing it home to the east as well.

The British Columbia grower never asks himself if thinning pays any more than he asks whether pruning or cultivation produces a profit. About spraying, especially in those districts where San Jose Scale and the Codling Moth are unknown, and where Apple Scab and similar fungous diseases have never been seen by the average orchardist, he does raise a question, but the cost of pruning, cultivation and thinning he does not question any more than he questions the box package or the wrapping of high-class fruit.

Until varieties of peaches, apples and pears are produced that reach the commercial standard of perfection without pruning and thinning (and such varieties are a long way off as yet), these practices, which go hand in hand, will continue to be two of the most important in the orchardists' calendar.

In the east a similar view of the matter will in the near future obtain. Progressive growers will experiment and their results will shortly lead to the adoption of thinning as a part of orthodox orchard practice as it is now in the west.

### HOW MUCH FRUIT TO A TREE

In discussing the question of thinning we admit that a tree may set more fruit than it can possibly bring to perfection, as the fruit grower understands perfection. Nature cares nothing for the fruit except as an aid to produce seed; the orchardist cares nothing for seeds except as they are necessary to the production of fruit. We wish each tree to

carry all the fruit it can bring to commercial perfection, and no more. At the same time the tree must make new vegetative growth consistent with its age and the variety. The third requisite is that it should also form enough fruit spurs for a similar crop in the following year.

When a tree is fulfilling these three requirements, it is performing its maximum duty to the owner. If it falls short in any of them he is not getting his maximum of profit, either immediate or prospective, from it. This ideal is the foundation of our orchard practice.

### HOW DOES THINNING HELP?

The removal of some of the fruit at an early stage in its growth helps materially towards securing the maximum duty of the tree in certain definite ways:

First, the average size of the fruit left on the trees is increased; this is the most obvious result of thinning. Trees overburdened with fruit produce a greater percentage of number two apples. The increase in size of the remainder, after the first or second pickings of Bartlett pears is made, is a striking instance of the increase in size when the number of fruits is reduced.

Second, the fruit borne is more uniform in size and shape. On the overloaded tree there is much variation in size, and especially where two or more fruits remain on a spur they are variable in shape as well. The fruits from the side blossoms of the cluster are in many varieties much different from those from the centre blossom, usually being flatter



The Unveiling of a Monument at Dundela, Ont., Dundas County, in Honor of The Original McIntosh Red Apple Tree

A unique but noteworthy function took place at Dundela, Ont., during June, when prominent farmers, government officials and public men met to unveil the monument shown in the illustration in honor of the original McIntosh Red Apple Tree. The plate on the monument bears this inscription: "The Original McIntosh Red Apple Tree stood about 20 Rods North of This Spot. It Was One of a Number of Seedlings Taken from the Border of the Clearance and Transplanted by John McIntosh in the year 1746. Erected by Popular Subscription 1912." The occasion was marked by a basket picnic followed by addresses by speakers, who emphasized the importance to the country of the discovery of new varieties of grain or fruit of such recognized merit as the McIntosh Red Apple Tree.

in shape and having a considerably longer stem. Uniformity in size and shape is an important essential of commercial perfection.

Third, the color is materially bettered, more uniform, and comes earlier. The remarkable increase in color which occurs when a first picking is made from heavily bearing trees of even the winter varieties such as Jonathan and Wagener, furnishes a striking confirmation of this point. While color seems largely related to sunshine, it is a well-known fact that on a heavily loaded tree the fruit has less color less evenly distributed, and more slowly acquired.

Fourth, thinning improves the quality. This is especially the case when the soil is deficient in moisture or plant food.

Fifth, the fruit is freer of diseases and insect pests because wormy apples, limb-bruised or diseased fruit of any kind can be removed at thinning time. On plums and peaches in moist regions, fruits thinned so that no two touch when fully grown, are much freer of brown rot.

Sixth, the removal of misshapen fruit lower the percentage of low grade fruit.

Seventh, thinning prevents premature dropping. A familiar instance is that of the McIntosh Red, which is especially liable to drop where two fruits are left on one spur. Premature dropping is quite largely due to the inability of the tree to supply moisture to an excessive crop.

Eighth, the load of fruit is more evenly distributed, and this is a very important feature in preventing the breaking down of trees.

Ninth, the cost of picking is reduced considerably, and the labor of packing is divided more evenly over the season. This is an important advantage where the supply of labor is deficient in picking time. The costs of grading and packing are also much lessened.

Tenth, less fertility is removed from the soil; a ton of apples takes out approximately 1.2 pounds of nitrogen, 1.6 pounds of potash, and .6 pounds of phosphoric acid. A ton of pears removes the same amount of nitrogen and about twice as much of the other elements. The seeds take the great bulk of these amounts, the pulp of the fruit taking but a small portion. As the number of seeds is roughly in proportion to the number of apples, and not to their size, the removal of fruits leaves a much greater supply of plant food for the balance of the crop, for the growth of the tree, and in the soil.

Eleventh, the tree is less liable to winter injury. The extensive injury suffered throughout Ontario by the hard winter of 1903-4 fell mainly on the trees which had borne an overload the previous season. This is a natural result because the ripening of the crop drains the vitality of the tree, so leaving it in poor shape

to withstand the winter. Trees bearing moderate crops for which there is an adequate supply of plant food, and an adequate supply of moisture, have sufficient vitality to ripen the crop, and to ripen the fruit buds and new shoots as well.

Twelfth, one of the most important results of thinning is that the trees will bear a larger and more uniform crop the following year. The tendency towards biennial bearing is materially reduced, much depending in this, however, on the variety.

For various reasons, then, thinning helps materially to secure the maximum duty from the tree.

#### WHEN TO THIN

As soon as the crop can be determined and the supply of labor permits, thinning should be commenced. Start with those varieties which are most advanced. Generally, apples, pears, and peaches are thinned when about the size of a hickory nut, and the thinning should be completed before they are more than double that size. On the various plums the work should be commenced as soon as possible after the dropping, familiarly known as "the June drop," is over.

Apricots, cherries, and crab apples are not usually thinned by hand, because the crop which they are to bear is a reasonably certain quantity, and can be controlled to a greater extent than in the larger fruits by proper pruning. The Italian prune and the Peach Plum are not usually thinned because normally the set of fruit of these varieties is not great enough to necessitate the expenditure.

#### HOW TO THIN

To set rules for thinning is even more difficult than to set rules for pruning. The fruit grower must determine for himself just how much crop the tree will be able to carry. Much depends on the variety, the age of the tree, its vitality, the soil, cultivation, climate, and district. Under equal conditions the Winesap may be thinned to say five inches, where the Jonathan would be thinned to six or seven, and the Northern Spy to eight. In climates such as that of Vancouver Island, where no irrigation is available, and the rainfall averages about half an inch per month during the growing season, or one-fifth that of the average Ontario district, all varieties are thinned to a greater distance than in districts of greater rainfall or where irrigation is available. In this district it is advisable to thin many crops, the whole of which could be carried to advantage under other conditions. Unhealthy or diseased trees should not be expected to grow as great a load as those in perfect health, while trees making extensive growth may very well be allowed to carry much more than average trees under the same conditions.

By one rule which is practised to some extent, the grower sizes up all the con-

ditions and determines how many boxes of fruit the tree should carry. It is a small matter then to determine how many fruits there should be left on the tree. The results at first are likely to be considerably off the estimate, but this is very largely a matter of practice and variation of seasons.

Another rule which might be taken in conjunction with the previous one, is to thin plums to about two, two and a half, or three inches, peaches four to eight, depending on the earliness of the variety; pears and apples, five to seven inches apart. In thinning pears and apples, it is only with early varieties that more than one should be left on any fruit spur, and with these early varieties part of the crop may be removed in one picking, and the balance later.

With winter varieties of apples it is a good rule to leave fruit only on each alternative spur, to encourage annual bear-

(Concluded on page 180)

### Dynamite in the Orchard

A. D. Harkness Supt. Experimental Sta., Jordan Harbor

Early in May several tests were made at the Experiment Station with dynamite as a means of loosening the subsoil for the planting of nursery stock and for the purpose of subsoiling in a mature orchard. In our mature apple orchard, we took a row of eight trees and put in twenty-five charges of dynamite. They were put in in quarter pound charges midway between the trees about thirty inches deep and a charge at each side of the trees at about ten feet from it. The subsoil in this orchard is quite hard. The explosion loosened the soil from three to three and a half feet deep and about three feet in diameter. The soil could be easily shovelled without blowing it out of the hole. In shovelling out the loosened soil, cracks could be seen, showing that the explosion had shattered the soil for a considerable distance. We will note the results, if any, in the crops of apples on these trees.

We also used it to loosen the soil for planting trees in eighteen holes, six plum, six pear and six apple trees, using the same amount of dynamite with the same result in the soil. In this test the soil was much heavier and harder than in the apple orchard. In this test we have trees from the same nursery, of the same age, and from the same part of the nursery, planted in the autumn in dug holes, planted in the spring in dug holes, and planted in exploded holes. I am making photographs of these trees as planted, and will make a record of their growth by photographs as well as notes.

The explosion loosens up a large hole in the ground, and it is necessary to see that the loosened ground is settled back again before the tree is planted. It enables one to take out the subsoil and fill



A Cover Crop of Clover in the Orchard of S. Carruthers, Oakville, Ont.

in with surface earth, and when the soil is hard with a hardpan. I think that a person would be well repaid for the extra expense in planting.

The holes are made with an augur made for the purpose or with a well sharpened crowbar. A hole can be put

down thirty inches in a very few minutes. The dynamite that is used for this purpose costs thirteen cents a pound and one-quarter of a pound is sufficient for one hole. Caps cost one cent and fuse about one cent, making a total cost of about six cents a tree.

## Cover Crops for the Orchard

Prof. C. A. Zavitz, O. A. C., Guelph, Ont

**D**URING the past twenty years, a large amount of experimental work has been conducted in the different uses of farm crops. This is particularly true in the uses which have been made of farm crops other than the production of grain or of fodder in the regular way. The terms "cover crop," "green manure crop," and "catch crop," have become quite familiar in our regular agricultural operations. The term "green manure" is used when a crop is plowed under for the object of enriching the soil. That of "catch crop" is used when a crop is grown between the regular periods of two ordinary crops so as to make the best possible use of the land, and the term "cover crop" is used to apply to those crops which are sown in mid-summer to cover the land during the latter part of summer and the autumn, and frequently during the winter and the early spring.

### LOSS OF PLANT FOOD

A few years ago the use of the bare summer fallow was general throughout Ontario. It was thought by many farmers that the bare fallow was absolutely necessary in order to kill the weeds, to liberate plant food in the soil, to preserve soil moisture, and to thus furnish a proper seed bed to the following crop, especially winter wheat. Investigations carried on at our Agricultural College at Guelph and at other institutions show that there is a danger of a considerable loss of soluble plant food by means of

the drainage water from the bare summer fallow.

The writer made determinations at the Ontario Agricultural College several years ago, in which the drainage water was collected, measured, and analysed monthly from each of six different soils in each of three or four years. The soils were divided into three groups, each group consisting of three samples. In one group, the soils were sand, clay, and loam, which were cropped continually. In the other group, the soils were all loam, one being cropped constantly and the other two were bare fallow and winter wheat alternately. Careful determinations were made of the amount of rainfall each month and of the drainage water passing through the different soils.

### THE RESULTS

It was found that the loam soil which was used as a bare summer fallow furnished a greater amount of drainage water than the combined amount produced by the other five lots of soil. It was also found that the drainage water from the summer fallow was richer in soluble plant food than the drainage water from any of the other soils. It was found, moreover, that the percentage of plant food in the drainage water from the bare summer fallow increased from month to month during the summer and the autumn, or in fact until the ground became frozen.

These results were both interesting and suggestive. The present practice of

Ontario farmers in discarding, to a great extent, bare summer fallow and instead cultivating the land in the early part of the season, and sowing a cover crop in the middle of summer, has many advantages on the ordinary farm, and especially on the fruit farm.

### COVER CROPS FOR THE ORCHARD

It has become the practice by a number of our best growers to cultivate the soil during the early part of the season and to sow a cover crop in the orchard about the middle of summer, usually in the month of July. This system has many advantages. From what has already been said, it will be seen that there is likely to be very much less waste in soluble plant food especially the nitrates in leaching through the soils and being wasted in the drainage water.

If leguminous crops are used, the soil is likely to be considerably enriched in nitrogen through the influence of the nitrogen gathering plants. These advantages would prove almost equally true, whether in connection with ordinary farming or with fruit growing. In connection with fruit farming, however, there are several other advantages, such as the checking of the growth of the trees so that the wood can become ripened and somewhat hardened before the winter season, the protection of the roots of the trees during the winter, and the better control of soil moisture.

By means of the cover crops, the amount of humus in the soil is considerably increased, which not only increases the amount of the plant food in the soil, but also greatly increases the power of the land to retain moisture and makes the soil more friable and less liable to bake and form cracks on the surface in the hot, dry weather. The humus content of the soil has also a marked influence in giving the proper environment for bacterial development and in the promotion of nitrification. It might safely be stated that the proper use of cover crops improves the chemical, the bacterial, and the physical properties of the soil, each of which has its own value.

### KINDS OF COVER CROPS

No cover crops will prove the best under all circumstances. The kinds which are selected for the best results on any farm will depend considerably on the particular requirements, and on the local conditions.

In some instances, it may be desirable to have a cover crop which can be sown in July and which can be plowed under in the autumn. In such cases, buckwheat, rape, common field peas, or soy beans might be mentioned as likely to be amongst the best. Of these, the peas and the soy beans are leguminous crops and would be of the most value in enriching the soil. In an experiment which was conducted at Guelph on four differ-



The Three Year Old Peach Orchard of A. Baker, Niagara Peninsula  
(Note how low these trees are headed).

ent occasions, in comparing field peas and buckwheat as green manures, it was found that the former surpassed the latter by twenty-two per cent. as shown by the crops which followed.

In many instances, fruit growers desire to sow their cover crops in the middle of summer and to leave the crops on the land until the following spring. In that way, greater advantages are usually obtained. If suitable crops are used, there is frequently a good growth in the early spring, which can be plowed under and incorporated in the soil. For this purpose, such crops as the Hairy Vetches, Common Red clover, Mammoth Red clover, Alfalfa, and Winter rye form a list from which a selection can be made. These are all leguminous crops with the exception of Winter rye.

About ten years ago, the writer suggested the use of the Hairy Vetches as a cover crop for orchards in the fruit-growing district in the Niagara peninsula. Seed of the Hairy Vetches was furnished by the College for the purpose of experimenting. A number of the fruit men have used the Hairy Vetches with a good deal of satisfaction. They usually form an excellent matting over the ground in the autumn which, in nearly all cases, survive the winter and the growth in the following spring is fairly rapid.

There is probably no crop which adds a larger amount of rich vegetable matter to the soil than the Hairy Vetches. Unfortunately, the seed being mostly imported from Europe is rather expensive. As the seed is now grown in Ontario, however, to a limited extent, this difficulty will be partly overcome through a supply of seed which might be obtained at a less cost per bushel.

Alfalfa usually makes a good growth when sown on well cultivated land about the middle of July. It is a rich leguminous crop, but does not obtain its full growth until the third year; hence, when plowed in the following spring after it

has been sown, both the tops and the roots are rather slender and there is not apt to be as large an amount of vegetable growth as is obtained from the Hairy Vetches.

As the Alfalfa is a very deeply rooted plant, it would not be wise to allow it to grow in the orchard much beyond the following spring after it has been sown, as there would be a danger of the Alfalfa roots taking the moisture from the soil, which should be available to the trees. The Common Red and the Mammoth clovers are well known in Ontario, and both have given good satisfaction as cover crops. These and the Hairy Vetches fill in an important place where hardy leguminous plants are required as cover crops.

### Handling the Berry Crop

Grant S. Peart, Burlington, Ont.

If some berry growers were to make a thorough study as to what class of berry fruit was mostly demanded by the Ontario consumer, they would at once and forever be relieved of the old-fashioned idea, "that fruit being fruit, would sell as fruit, no matter what sort, or how it was packed." Now we admit that the consumer is sadly in need of further enlightenment with regard to selecting the better varieties from poorer ones, but he is wideawake when called upon to choose between poor and tastefully packed fruit. It is then an advantage to every shipper's reputation when their berries appear on the market looking fresh and attractive.

In order that berries may arrive on the market in prime condition, they should not be packed when wet with dew or rain. Many growers claim, however, that they cannot afford to discontinue picking until the dew is off in the morning. It is important, nevertheless, that dampness be avoided when handling the berry crop. Shippers in the Burlington and Oakville districts would probably take keen exception to postponing the

picking on account of dew, for it is an advantage to be proud of, that owing to direct train service, Toronto citizens are provided with morning picked strawberries and raspberries for breakfast.

A bruised berry will commence to decay very quickly. Consequently they should receive as careful handling as possible. Sometimes damage is done by overfilling the boxes. It is a good plan when packing each box to shake down gently and fill to approximately one-quarter inch above level. This prevents further settling in the boxes and also does away with crushing the berries.

The common and I believe the most practical way to pick gooseberries is with leather gloves. Strip the fruit and leaves into baskets and pass through a fanning mill. The berries are firm and will not suffer. It is also claimed that no harm is done to the bushes because the leaves have passed their usefulness to the bushes before picking commences.

### Summer Pruning

Prof. E. M. Streight, Macdonald College, Que.

Pinching or stopping is a method of summer pruning whereby robust shoots are checked at any desired height by removing their extreme points with a pinch between the finger and thumb. This process retards for a time the extension of such shoots and induces the more active growth of laterals. For the control of some plant diseases pruning is effective. Fire blight of apple trees may be controlled by cutting out diseased branches and cannot be done in any other way.

#### THE TOOLS TO USE

Only a few tools are necessary for pruning. A knife makes a nice smooth wound, which heals readily, but may be used only on very small limbs. A pair of pruning shears is a necessity for small branches, and a pair of lopping shears for larger branches is equally necessary. One or more saws, fine toothed and of such construction that they may be worked to advantage among the branches, will be found essential. The numerous pruning devices worked by compound levers which are found on the market, are failures for the most part. Better let them strictly alone.

Judicious pruning facilitates the work of cultivation and spraying and determines to a large extent the fruiting habit of the tree, by making annual bearers of trees which formerly bore once in two years. The grower has everything to gain and nothing to lose, yet he should become acquainted with the habit of growth of different varieties, so that he may work more intelligently. The upright varieties may be spread somewhat by pruning to the outside laterals, and the spreading kinds may be contracted by cutting to those which have an inward direction.



# Canadian Gardens---A London Prize Garden

A. J. Elliott, Aylmer, Ont.

## ARTICLE No. 7

**I**N a pretty situation, that of 29 Garfield Street, London, Ont., lives a most enthusiastic lover of flowers, Mr. Wm. Bartlett, an Englishman. Mr. Bartlett's prize record stamps him as a successful grower, while his enthusiasm would convince anyone that growing flowers properly is the highest form of enjoyment one can find.

Last year Mr. Bartlett received from the London Horticultural Society first prize for best lawn, first prize for verandah, first prize for kitchen garden, and second for asters at the Agricultural Show, and two seconds at the Western Fair. While Mr. Bartlett's grounds were pretty at the time of my visit they would have looked better some few weeks later, as he is an extensive aster grower; in fact, these are his forte, as the large bed of some twenty varieties give promise of future blessings that he is now anticipating in the form of first prizes. He grows his plants in his greenhouse, and gives good, clean culture with the best rotted manure. This he claims is sufficient for almost any annual.

### HOME-MADE GREENHOUSE

Mr. Bartlett is a great lover of petunias. The number of double and fringed varieties he possesses shows that his taste is refined and up-to-date. He has a greenhouse of his own construction. In it he raises his own plants, pots and pricks out his own stock, and, in fact, does all the work pertaining to such a useful building.

As you approach his home from the street you are pleased with the verandah, and do not wonder at his receiving a first prize, for the clematis covered building, in its several colours through the shades of white to the dark purples is simply fine, and it will, when its bank of asters planted in front of them are in blossom, be something worth seeing.

### THE LAWN

On a level with the rear of the house, a neat lattice fence cuts off the lawn from the garden. The intervening space is filled with a nice piece of lawn flanked on the side nearest the house with asters and on the left hand side with a fine perennial border filled to overflowing with some very choice peonies, perennial phloxes, larkspur of all shades, Columbines, mullen pinks, roses, and perennial glows, which carry the eye to the end of this space, where a fine bed of grand tuberous-rooted begonias is situated. He has the finest plants of these beautiful flowers seen this year. When asked as to their culture, so far as he gives it, he stated that in the fall he takes them up, places them in boxes of

sand, the bulbs just resting thereon, root side down, and stows them away in the house where they will not freeze. Towards spring he moistens the crown of the begonias with a very little water, and as the weather gets propitious, he plants them in pots and removes them to his greenhouse, which, by the way, is without heating apparatus, and shortly they take up the duties of life and develop into such grand plants as I saw.

### THE DRIVEWAY

On the other side of the house is a driveway, and as Mr. Bartlett is in business as a drayman and consequently uses this road very much, as it leads back to his barn, chicken houses, and other offices, one would think that it might be a rough affair. Nothing of the kind! The perennial borders on either side of the drive are clean and unmarred by the hard usage one might imagine would come from constant driving through them. Here in profusion are all the perennials imaginable, interlaced with wild clematis and crimson ramblers, which prevent any detractor from what might be easily conceived to be an eyesore to a pretty home.

### THE FLOWER GARDEN

We then pass through the lattice fence gate and find ourselves in his flower garden proper. The first thing that strikes one is a fine bed of roses nicely in bloom. Some grand specimens of the bedding varieties meet the eye. Although the past winter was very trying and hard on the wood these are bushed out finely and literally covered with buds and blossoms from the purest

white to the darkest crimson. The whole is flanked and bounded by rows of beautiful pansies and dianthus. Then follow in succession his beds of asters and petunias. Of the former there is a bed of eight hundred plants comprising the best species of the kind, Gregos, branchers in all colours and names, Vicks, Globe, Comet, and twenty other varieties. Here, you can see, is Mr. Bartlett's "long suit." And here I might pause to ask, Why is it that all our successful growers of this grand annual find that Dreer, Henderson, Vick, and others of the United States supply them with so much better seed than do our own Canadian growers? It should not be so, but it is true in my experience, and should not obtain.

### THE VEGETABLE GARDEN

Passing through another gateway we enter the vegetable garden. In it is found all that could well be expected in such a place. The wet spring rendered the clay soil backward in bringing the vegetables along, but Mr. Bartlett is sanguine that all is well here too.

One is struck with the absence of weeds, cut worm, and club root from the plants. Mr. Bartlett believes that it is due to the fact that as soon as practicable he lets his large flock of chickens loose, and he claims that they do wonders in keeping the crop of these nuisances down the following year. Lack of time made it impossible to obtain the photographs of this garden that should accompany this article. The garden, as we trust will be seen, is one that will afford delight to every true lover of flowers who may be privileged to visit it.



The Front Approach to Mr. Bartlett's Prize Winning Garden

## Summer Care of Sweet Peas

Ernest Heggs, Hamilton, Ont.

Much thought has been given with regard to the best method of supporting sweet peas. Wire netting is extensively used, but training the plants up the wire requires a lot of attention. High winds also dash the blooms against the wire, and cuts them. Hazel sticks are the best when they can be procured.

When you have planted the seedlings out, give them short twiggy sticks. The plants thus obtain a good start to climb. Give them their flowering sticks when they are about a foot high. These sticks should be from seven to eight feet high. Have two strong poles at each end of the row, and run a strong cord along the row, about half-way up, so as to keep the sticks in position. Train the plants to come up on the outside of the row, so as to allow the air and light to penetrate through the row.

### FEEDING THE PLANTS

Do not give the plants any liquid manure until they have been flowering for a little while, and then only once or twice a week. Soot water is excellent, if applied when of the colour of weak tea.

Strong doses of any kind of liquid manure are fatal to good results. A good plan is to spread some short manure, each side of the row, during July, which keeps the soil moist and cool. When the rains come it washes the goodness to the roots.

### CUTTING THE BLOOMS

Always cut the blooms with a pair of shears at the base of the stem. The best time to cut the blooms is in the early morning or the last thing at night. The blooms last longest in a cool room free from draughts.

It is a mistake to give the cut flowers fresh water every day. Instead, put a pinch of salt into the water, and fill up every day with more. Cutting a little of the stems off every day makes the blooms last twice as long as they otherwise would. This applies to all kinds of cut flowers.

## Culture of the Fuchsia

H. Gibson, Ottawa

The fuchsia likes a good deal of water, both at the roots and overhead. If the drainage is perfect and the soil light and porous it is difficult to give it too much. It must never be allowed to become dry at the roots or it will receive a check, and probably drop its leaves and buds.

As most varieties are of slender habit some support is needed. The use of racks or trellises is to be deprecated; they are heavy, unsightly affairs, and a plant trained on one is never very graceful. A very satisfactory support is a stout iron rod with holes punched five or six inches apart. Through the holes run a heavy wire, twisted in and out in such a manner that the loops in it project eight or ten inches on all sides of the rod. Do not attempt to make these regular; they will not be seen when the plant grows up, so it doesn't matter how they look when the frame is made. Tie the main stalk to the rod and let the branches dispose of themselves among the wires. Trained in this way a natural graceful specimen can be had, in contrast to the formal, prim, flat, rack-trained specimen.

Some varieties, like Little Beauty, are of a drooping habit and never look well trained in an upright position. Let them train themselves. A very good effect is produced when such a plant is

grown on a bracket half-way up a window.

There seems to be an idea prevalent among amateur gardeners that the fuchsia is, or ought to be, a winter bloomer. Many persons keep them in the window hoping to get flowers all the winter. This they generally fail to do, much to their disappointment. It is not a winter bloomer save with one exception, and the place for the plants in the winter is the cellar or other frost-proof place. There they should go by the end of November, and there they should remain until the beginning of March. Give little water; in fact, no harm will come if they are kept so dry that they shed their leaves.

## Garden Notes

Keep the hedges clipped.

Lawn clippings and green waste from the garden make good chicken feed.

Keep the cultivator and weeder going. They not only kill weeds, but conserve moisture.

Keep the sweet peas picked. It is better for the plants, and the house can be made more attractive by their use.

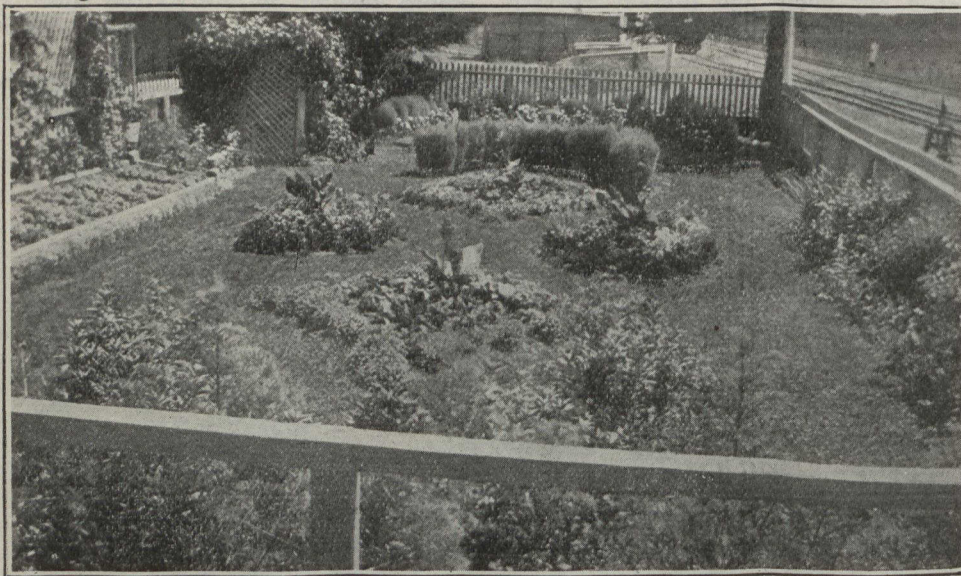
Thin the apples and plums if too heavily loaded.

Chicken wire makes a good trellis for tomatoes. A single stake will do or a barrel-hoop supported about two feet from the ground by three stakes is good.

Keep the new strawberry bed clean cultivated until the runners are matted too much to permit the cultivator to go through.

If the strawberry plants are vigorous, and the bed not too weedy, it may pay to renovate it for another year. Mow the plants close to the ground, rake off the foliage and burn it. Plow a furrow, cutting out all but about one foot of the row, and then go through and take out the weeds and diseased plants in this row. Fill the furrow with thoroughly rotted manure and cultivate the soil back. Keep up a thorough cultivation of the soil all the season.

Stalk borers are the worms which make holes in the stems of lilies, dahlias, golden glow, peonies, and other flowers, causing the stalks to fall over. They come originally from weeds, and the eggs are laid at the base of certain weed-stalks in the fall, and hatch the following spring. A garden adjoining a weedy, neglected lot is apt to be troubled. Sticky tanglefoot of medium thickness, which can be bought easily in large quantities, applied over a space of three inches wide on the outside of the base-board of a fence, or a board barrier placed for the purpose, has been found to be an effective preventive, since the worms cannot cross the sticky band. This should be done early in the season, and calls for more than one application, in order to keep the barrier sticky.



A First Prize Flower Garden on the Canadian Pacific Railway

The garden here illustrated, situated at the railway station, Markdale, Ontario, on the line of the Canadian Pacific Railway, won the grand prize offered last year for the Ontario division of this railway company. The garden was planted and looked after by the agent, Mr. John Caesar. The planting of flower beds of this nature at the stations of the great railway companies is a line of work that is meeting with increased favor on the part of the public. The flower bed on the left contains the name of the station, although the illustration does not show this very clearly.



Students Studying Floriculture at the Guelph Agricultural College

The Normal School teachers who gather each summer at the Guelph College take a course of lectures and demonstrations in floriculture. Some of the students are here shown in the rose garden.

## My Favorite Flower and How I Grow It\*

A. V. Main, Ottawa, Ont.

**T**HE summer treatment required by geraniums is light. Remove spent bloom, keep stirring the soil till the foliage prevents you and during an exceptionally dry spell give a good watering in the evening. In a rich soil and rotted manure geraniums will scarcely suffer even in a dry season.

In October, before the frost cuts them down too much, lift the plants, trim off long shoots and bad leaves, put them into large pots or boxes about six inches deep and pack soil around the roots. Place them in a basement or in a cool airy room where frost is kept out. Give water every three weeks. During January and February withhold it altogether.

The plants I bring successfully through the winter are adapted for boxes, vases and other receptacles that add to the beauty and environment of a well-kept house.

In April I cut the plants good and hard, leaving about only three inches of wood, which soon sends out new buds. After their second summer of blooming, I discard the plants without a grudge, as the roots get old and matted they lack vigor and deteriorate in every way.

As a cut flower geraniums stand well, and in the fall or after the first snowfall, a vase of scarlet geraniums, with their bronze foliage, is always appreciated.

### VARIETIES

Capital bedding varieties include the following: Double, John Doyle, scarlet;

S. A. Nutt, brilliant crimson; Captain Flavelle, scarlet; La Favorite, white; Mdm. Jaulin, pink, semi-double; Marquis de Castelain, light crimson. Single sorts include, Fiance, pink; Mdm. C. Braunt, salmon pink; Flamingo, red. The silver leafed Mdm. Salleroi makes a nice border to a scarlet bed. The cut leafed scented geranium is an old time gem, cherished so much by our grandparents. The bi-colors and tri-colors commend themselves for their fine foliage display. Thus the geranium is in no way limited for variety.

### POT PLANTS

Our favorite pot plants are specially treated for fall exhibition and winter blooming in the house. Prepare a good soil, equal parts rotted manure, loam, with sand added for porosity, also a six-inch pot of bone meal to a barrow load of the mixture. Do not sift the soil. Early in June repot the plants into six and seven inch pots instead of the flower bed. Plunge the pots in ashes in a sunny place. Keep them well watered all summer, remove every bud that shows, pinch back the growths and turn the plant once a week. The idea is to get a sturdy plant, having plenty of roots and with growths well matured.

Three weeks prior to the show I let the flowers come and continue feeding the plant twice a week with Clay's fertilizer and Peruvian guano alternately. At the approach of frost I place the plants in the sunniest window. If you do not over-water the geraniums the bloom will surprise you if the summer

treatment has been fulfilled. In March cut the shoots back to four inches and in May repot into a larger sized pot or top-dress.

Towards the end of May gradually harden them off for their flowering quarters outdoors. I use a sunny aspect. A rich soil, half soil and half rotted manure, about twelve inches deep, suits me, with a sprinkling of that lasting fertilizer, bonemeal. When planting, firm the soil and allow fifteen inches to a plant. For two weeks pick off all flowers and buds, and pinch back any straggling growth. This is a heart-break to the ladies, but a valuable assistance to the geraniums, to make roots and recovery for its long flowering period June to October.

### Window Boxes

H. Gibson, Fergus, Ont.

When the lady of the house has planted her window box she sees in her mind's eye a wealth of bloom and beauty the future has in store. But this anticipated beauty is in many many cases never realized, hence the poor woman is disappointed and wonders why she failed to attain success. She says, "I bought good plants, had good soil, and I watered them myself every day. What more could I do? In less than a month the plants began to look sick, their leaves turn yellow and fall off. They seem to try to grow but the young leaves go just the same, look as if stricken with blight. In six weeks they are almost all dead. Was the fault mine? If so what is wrong with my treatment?"

In nine times out of ten the failure results from lack of sufficient moisture at the roots. It must be borne in mind that a box of a foot or more wide, and nine or ten inches deep, and from three to four feet long, contains quite a large quantity of soil; to keep this moist requires liberal supplies of water in the summer. This many persons fail to realize and adopt the little and often method of watering, which only wets the surface soil, the soil beneath becoming in the meantime almost dust-dry. This explains why the plants flourish for a time and then begin to fade. They do well while the roots are in the moist stratum of soil, but as soon as they get through that they fail to find the moisture they need, and must have if development is to go on, and the result is failure.

To grow plants well in window boxes they should be thoroughly soaked through every morning during the hot weather, and it may require to be done twice daily when such hot weather is experienced as we had in Canada last summer. Make it part of your daily plan to water thoroughly every day, and above all never allow the moist appearance of the surface soil to deceive you.

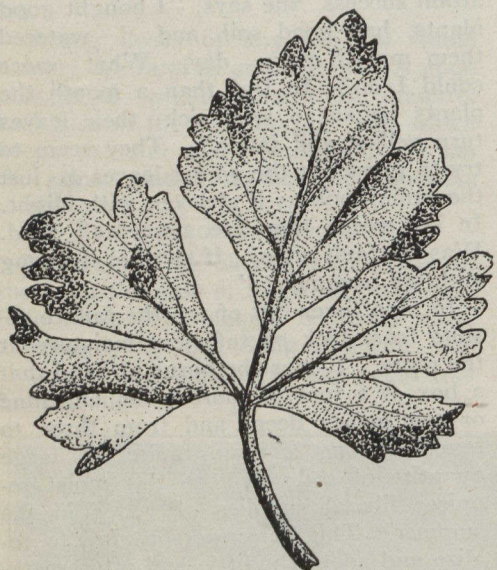
\*Part of the essay that won first prize in the competition held last year for prizes offered by Mr. R. B. Whyte, of Ottawa, and Mr. Hermann Simmers, of Toronto.

# The Celery Blights

Prof. E. M. Streight, Macdonald College, Que.

WHEN a farmer says "My potatoes have been struck by rust" or "My celery is going with the blight," what does he mean? When he speaks of controlling "blights" and "rusts," what does he hope to do? I find the greatest amount of misconception concerning the whole subject of plant disease, and when the expert explains the difficulty in the language of mycelium, conidiophore, uredospore, and teleutospore, he has not added much to the gardener's conception of the difficulty or the most approved method of combating the same.

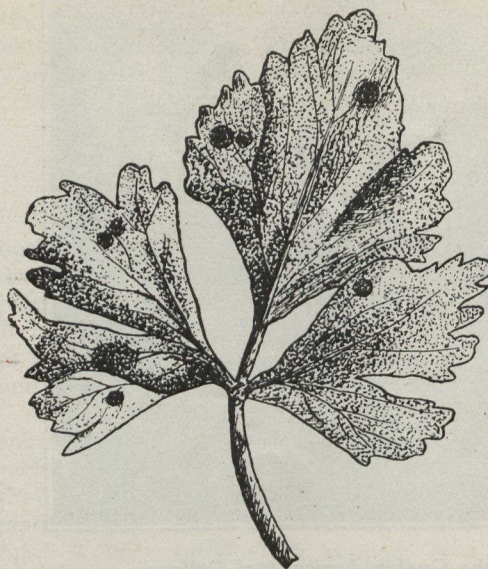
We shall have made much advance when all men realize that every plant disease is also a plant. True, these forms are low down, but just as truly plants as the potato, celery, or other plant which they attack. These plants are not so much unlike other plants as many suppose, except that they are very minute—so minute that they are seldom seen with the naked eye, unless very many are aggregated together.



Early Blight on Celery Leaf. Fig. 1

The plant body is a mass of threads, which wind themselves back and forth through the tissue of the host, either through the cells or between them, and constantly suck up the elaborated food which the host plant manufactured for its own use, and which the fungus had not the power of manufacturing for itself.

Very soon, usually, after the attack, the plant causing disease acquires the power of sending up little stalks. These little stalks bear spores, either singly or massed together. These spores, which correspond to seeds in the higher plants, are the common forms of reproduction. They are so light that they are easily blown by the wind from place to place, where they fall on other plants, germin-



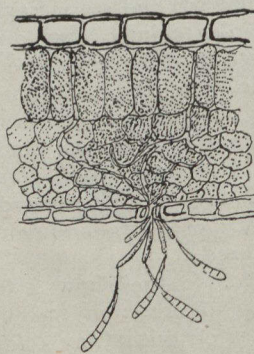
Late Blight on Celery Leaf. Fig. 2

ate, attack the plant, and the whole life history is gone over again.

### A MISCONCEPTION

We must get away from the idea that warm, moist weather causes rust and blights. Climatic conditions, moist and warm, are usually favorable to the germination and proper development of the fungus, but it would be just as reasonable to say that warm, moist weather caused the oat crop. The truth is that heat and moisture are usually as necessary for the germination of the spore as for the germination of celery seed, but in neither case does it cause the plant.

If a seed of one of the higher plants were put in kerosene oil it would not germinate. In just the same way, there are many substances in which the spores of plant diseases cannot grow. One of the best of these is Bordeaux mixture. If a fungus is already within the tissue it is evident that the application of a fungicide, such as Bordeaux mixture, is of little avail so far as curing the malady goes; but even then it may hinder the spread of the disease.



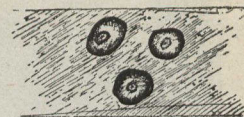
Section Through Leaf. Fig. 3

Early blight. (Section through fruiting bodies arising from stomate of leaf, bearing spores.)

Prevention is the watchword.

If the leaves of plants are covered with some substance in which spores cannot germinate, it matters little how much disease there may be in the locality, or how many spores alight on your

plants, so long as their armour is complete. True, the spores often work in between the joints of the armour. This necessitates careful and continuous spraying so that there may be protection for every part. Bordeaux mixture affords such protection.



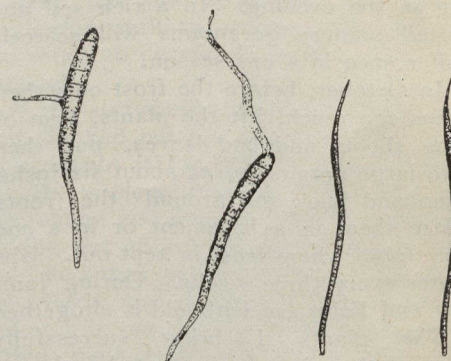
Sample Spots. Fig. 4

This shows an enlarged view of the spots of Late Blight of Celery, showing the pustules or pycnidia.

It is well in this connection to remember that bluestone is the important and essential thing, but because of its solubility, we dare not use it in a pure state, as it would kill the plants on which it was sprayed, along with the fungus which attacked it. The lime of Bordeaux is simply to bring the bluestone in such a condition that it is no longer soluble in water. In this condition it simply forms a coating on the leaves without injury to the host plant, and at the same time hinders the germination of the spores. With these preliminary considerations we shall proceed more particularly to Celery Blights and their control.

### TWO CELERY BLIGHTS

As with potatoes we have two blights of celery which are of great importance



Germinating Spores of Early Blight. Fig. 5

Spores of Late Blight on Celery. Fig. 6

—the Early and the Late. The one is often mistaken for the other. At certain seasons both are present at one time. As a rule the early blight is most destructive early in the season, and the late occurs in autumn. Its destructiveness does not end in the field, for the storage cellars often furnish conditions favourable for its rapid development, and the losses in many sections have been heavy.

The early blight begins on the outermost green leaves and rapidly spreads to the younger leaves as they unfold in freshness and vigour. It appears in spots more or less circular, greyish-green at first, and becoming brown and ashen. In the early stages of the disease there is a well defined spot with slightly raised



Celery Sprayed Nine Times with Bordeaux Mixture on the Left. Not Sprayed on the Right.

border; but when the spots become numerous on a leaf, the latter begins to turn yellow, and subsequently the fungus develops abundantly its fruiting growth in indefinite areas thus giving the characteristic ashen spots of indiscriminate form. This "early blight," *Cercospora Apii*, is seen on the leaf only, while "late blight" may occur on any part of the plant.

The "late blight" *Septoria Petroselini* Des, var. *Apii*, begins by attacking the lower outside leaves, where it is seen in small brown spots, which later turn black. These spots often form in clusters, but where the leaves are badly affected the clusters cover the entire leaf surface and these leaves soon fail to perform their natural function and die. In many cases, however, the blight does not confine its ravages to the leaves (leaf blades), but attacks the stalks (petioles) also. Here, again, it is seen in small black spots. The stalks soon turn brown, soften and finally shrivel up. Shortly after the appearance of the characteristic blight spots upon the leaves and stems, there may be seen small black pustules in the centre of the dead area. By referring to figures one and two an idea of the appearance of the two blights may be obtained.

#### THE SPOT

A minute study of the "spots" shows great differences. In the early blight, a section through the spot simply shows the threads of fungus ramifying through the tissue, the fertile filaments, or hyphae, protruding through the pores or stomates of the leaf. These fertile hyphae, as seen under the microscope, are illustrated in figure three. It will also be seen that these bear transparent reproductive bodies, or spores. In late blight pustules or pycnidia are found, and the spores are contained in these. These pustules are visible to the naked eye and appear as black specks. Under the microscope they appear as figure four.

The spores of early and late blight re-

semble each other. In both cases they are long and narrow, and may or may not be slightly curved. They are transparent (hyaline) and usually have cross partitions (Septae). Usually the spores of early blight are more club-shaped, and have not as many septae as in the late blight. These spores appear as threads. In both cases they are very light, are blown by the wind and under favourable conditions germinate quickly. Figures five and six show the spores, and also their manner of germination.

#### THE PLANTS

The character of the entire plant is also very different in the two diseases. In the early blight the plant may have a gnarled stunted appearance, but never loses its stability; while in *Septoria* the stalk becomes soft, wilted, and eventually dries up.

Considerable confusion exists regarding the nature of the season during which this early blight is most prevalent. It has been reported most abundant during hot dry periods, and also most injurious during warm "muggy" days. In my own experience the disease develops best during hot weather, and is not much dependent on moisture. The ordinary dews are quite sufficient for its rapid development. As autumn approaches with cooler rains, the fungus disappears to a great extent. At Macdonald College this disease was followed by the late blight. This latter malady was not serious in the field, but the fungus is still active in the cellar, and is causing considerable injury.

#### CONTROL

Despite the failure of Bordeaux mixture as a preventive in the field for *Cercospora Apii* in many localities, we are satisfied that, when faithfully applied, the disease may be controlled by Bordeaux. The accompanying photographs show plants from the field sprayed nine times with Bordeaux, and beside them some plants not sprayed at all. The results are striking. The unsprayed plants are useless.

The spores of the fungus have been found to germinate after passing the winter on the dead leaves of the previous growth. This will suggest the necessity of destroying all refuse matter and diseased material as far as possible. The same disease is said to grow on the wild parsnip, so it may be as well to rid the fence corners of this plant.

#### CONTROLLING LATE BLIGHT

The late blight can be controlled in the field by fungicides and without greater trouble than in the case of the other. A nozzle with a large opening and high pressure should be used, so that plenty of the spray mixture may be forced right into the centre of the plant. This spraying for *Septoria* is important if celery is to be stored, so that a minimum of disease will be carried to the cellar. Badly affected leaves should be stripped away before consigning to the storage. The temperature should be low, so as to hinder the rapid development of any remaining spores. Good ventilation seems to be an important preventive factor, and the best evidence of this is afforded by the observation that the blight is less injurious along the central gangways of the cellar.

The usual Bordeaux mixture four-four-forty was used here, and we believe it to be as good as any. It has been urged by someone that Bordeaux mixture should not be used on celery in view of the fact that the leaf stems are eaten. It has been shown that a man must needs eat from one hundred and sixty-six to one thousand three hundred and twenty-eight heads of celery at one time to get a tonic dose of copper, and sixty-six thousand four hundred and forty plants would be required to kill, so the danger is not great.

#### USE GOOD SEED

As before referred to, in late blight the pustules containing spores may occur on any aerial part of the plant including the seeds (seed coats) and the pedicels on which they are borne. To the naked eye they appear as black specks. It is believed that the introduction and rapid distribution of the disease in this country is due to the importation of infected seed. One thing we know, the fungus often appears on seedlings. Good seed with celery is as important as good seed in other garden crops. Celery seed on which the pycnidia can be seen ought, of course, to be rejected; but diseased seed cannot always be identified at a glance. We believe that the time is coming when gardeners will pay more attention to saving their own seed. When this is done and seed saved from healthy plants and the best possible, we shall have made a long step in advance. We need not blame the weather when we introduce disease into the field in the blemished infected seed. This is usually the beginning of the end.

# The Canadian Horticulturist

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## The Only Horticultural Magazine in the Dominion

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H. BRONSON COWAN, Managing Director

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### CIRCULATION STATEMENT

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January, 1911	8,082
February, 1911	8,260
March, 1911	8,523
April, 1911	9,469
May, 1911	9,783
June, 1911	10,178
July, 1911	10,062
August, 1911	10,043
September, 1911	9,973
October, 1911	9,991
November, 1911	9,988
December, 1911	10,137
Total	114,489

Average each issue in 1907,	6,627
" " " " 1908,	8,695
" " " " 1909,	8,970
" " " " 1910,	9,067
" " " " 1911,	9,541
June, 1912	12,112

Sworn detailed statements will be mailed upon application.

### OUR PROTECTIVE POLICY

We want the readers of The Canadian Horticulturist to feel that they can deal with our advertisers with our assurance of the advertisers' reliability. We try to admit to our columns only the most reliable advertisers. Should any subscriber, therefore, have good cause to be dissatisfied with the treatment he receives from any of our advertisers, we will look into the matter and investigate the circumstances fully. Should we find reason, even in the slightest degree, we will discontinue immediately the publication of their advertisements in The Horticulturist. Should the circumstances warrant we will expose them through the columns of the paper. Thus we will not only protect our readers, but our reputable advertisers as well. All that is necessary to entitle you to the benefit of this Protective Policy is that you include in all your letters to advertisers the words, "I saw your ad. in The Canadian Horticulturist." Complaints should be made to us as soon as possible after reason for dissatisfaction has been found.

Communications should be addressed  
THE CANADIAN HORTICULTURIST,  
PETERBORO, ONT.



## EDITORIAL

### MORE SWINDLERS

Year after year THE CANADIAN HORTICULTURIST has exposed swindle after swindle that was being perpetrated by so-called agents of nursery firms or other concerns that professed to have some new and wonderful discovery that was certain to enable those fruit growers who would take advantage to it, upon the agent's terms, to get rich more quickly than ordinary and proved methods allow. We have had wonderful varieties of potatoes and apples, compounds that if injected into the sap of fruit trees would prevent blights and other diseases, as well as innumerable other schemes, all of which have been fakes of the first order. In one instance THE CANADIAN HORTICULTURIST placed the provincial government on the track of a swindler, who was arrested and imprisoned.

Recently our attention has been called to the operations of agents of United States firms who are selling apples, cherries and other nursery stock at prices that such stock could not be grown for profitably. To facilitate their operations these agents are misleading the public by exhibiting specimen fruit in glass jars—without making allowance for the magnifying effect thereof—and assuring possible customers that under ordinary conditions the stock they are offering for sale will produce similar fruit. Promises are made that dead trees will be replaced for the next five years, although no reputable firm we have yet heard of has been able to make such an offer and continue in existence.

Were it not for the fact that a tress crop of suckers seems to be always awaiting the operations of such sharks, we would hardly think it worth while drawing attention to this matter. As it is, we would advise our readers to be on the watch for these parties and to expose them should opportunity allow.

### TRANSFORMING WASTE PLACES

Many towns and cities in Canada would do well to imitate the policy adopted by the city of Winnipeg this year in an attempt to utilize waste places and vacant building lots, and thereby beautify the city and establish more gardens. There has been established this year in Winnipeg an organization known as "The Winnipeg City Garden Club." Winnipeg, like all other municipalities, has many vacant building lots, a large number of which occupy most prominent corners. This is largely due to speculation in real estate. Immense bill-boards face these lots, or large wood piles are located on these spaces. To do away with this is the desire of this new organization.

For a fee of one dollar for membership the Garden Club offers to supply a vacant lot asked for by any applicant. They offer to plow, harrow and prepare the lot for planting; to furnish fifty cents' worth of seed free and to supply other seed at a cost less by twenty-five per cent than its list price; to give the member expert advice upon how to plant the land, and to supply expert inspection throughout the season. They also agree to furnish men to spade the home garden at cost to the club, and to assist in every possible way the planting of home gardens and vacant lots.

In Minneapolis and several other large cities in the United States the Garden Club has been in operation long enough to fully demonstrate its feasibility and its success. Results have been most gratifying. The garden plan was accepted in Minneapolis by some three hundred and sixty people the first year, and twenty-two thousand five hundred square feet of formerly waste land was placed under cultivation. The gardens were all marked with neat signs, and were so well taken care of that only two of the three hundred and sixty to whom vacant lots were assigned gave up their gardens, and these because the lots were sold. Forty thousand tomato plants and eighty thousand cabbage plants were distributed among the vacant lot gardeners of Minneapolis last year, and it is estimated that these plants produced crops to the value of seven thousand or eight thousand dollars.

The Garden Club of Winnipeg is affiliated with all the departments of civic authority, including the Trades and Labor Council, Industrial Bureau, Real Estate Exchange, Horticultural Society, Canadian Club, Winnipeg Advertising Club, and Cottage Gardening Society.

### THE DESERVING HONORED

The celebration that took place at Dundela during June, when a monument was unveiled in honor of the original McIntosh Red apple tree, is worthy of more than passing note. Hitherto it has been the custom to erect monuments mainly to great warriors and statesmen. The world has appeared to overlook the fact that reforms and improvements fraught with great importance to the human race are sometimes accomplished in the more humble walks of life by men whose names do not receive the recognition that their achievements deserve.

Of late years there has been a change in this respect. At last the public is developing a more just sense of values. Knightly honors and high degrees are being conferred on men who have promoted such humble callings as that of agriculture, as for example Mr. C. C. James, until recently Ontario's Deputy Minister of Agriculture. Even yet, however, it may cause a smile to some to know that a monument has been erected in Oxford County, Ont., in honor of the great Holstein cow Calamity Jane, an animal that did much by the great records she established to extend the practice of conducting official tests of the production of dairy cows.

In time we will come to recognize that men like the late Charles Arnold, of Paris, Ont., who originated the Ontario apple, and the late John McIntosh, to whom we are indebted for the McIntosh Red Apple, are deserving of the nation's thanks. It is encouraging, therefore, to know that this movement is progressing, as was shown by the erection of the monument at Dundela.

The fruit growers of Nova Scotia, and the local government of that province, deserve credit for the efforts they are putting forth to prevent the San Jose scale from becoming established in the east. Profiting by the experience of Ontario, which passed an Act for the eradication of this pest but made the mistake of leaving its enforcement in the hands of local inspectors, who in many cases were incompetent as well as afraid to antagonize their

friends, Nova Scotia has appointed provincial inspectors, from whom more efficient work may be expected. Vigilance and careful inspection of orchards and nursery stock may be expected to keep this pest from gaining a foothold in the east as they have in the west, and thereby save the Eastern growers hundreds of thousands of dollars.

The announcement that the Ontario Department of Agriculture will this year maintain a market commissioner in the prairie provinces, as was done last year by British Columbia, is a welcome one. Such action was long ago suggested by THE CANADIAN HORTICULTURIST, and later the proposal was endorsed by the Ontario Fruit Growers' Association. No time should be lost in placing a competent man at this work. His services should mean much this year to the fruit growers of Ontario.

It is gratifying to know that the grant of the Ontario Horticultural Exhibition will be materially increased this year. For years this exhibition suffered from lack of funds. Of late it has assumed such proportions that a more liberal government grant has been greatly needed. Now that this has been assured we may expect to see the exhibition attain still greater proportions and increase its usefulness to the fruit interests of the province.

It is to be regretted that Hon. Mr. Duff, Minister of Agriculture for Ontario, has not seen his way clear to divert a portion of Ontario's share of the Dominion Go-

vernment's grant for agricultural purposes to the Fruit Experiment Station at Jordan Harbor. This station is not accomplishing the work that it might because of lack of funds. It deserves and should receive more liberal treatment from the Ontario government.

## PUBLISHER'S DESK

No feature that we have added to THE CANADIAN HORTICULTURIST during recent years has been more appreciated by our readers than our series of articles describing Canadian gardens. These articles are proving so popular we are planning to continue them after the first of the year. We desire your help. You must know of some garden in your vicinity worthy of being described in this series of articles. Will you not draw it to our attention in order that we may arrange to obtain photographs of it during July and August when gardens are at their best? We are particularly anxious to obtain descriptions of gardens in Montreal and other eastern cities as well as in the cities of the west. Officers of horticultural societies are especially urged to give this matter their attention. We are willing to pay for illustrations and articles of this class that prove acceptable. Let us hear from you.

Have you noticed the gratifying increase in the circulation of THE CANADIAN HORTICULTURIST as reported from month to month in the first column of the opposite page? The fact that the circulation of THE CANADIAN HORTICULTURIST during June was some 2,000 greater than for the same month a year ago, although we anticipate a slight falling back during the month of July, demonstrates the increasing popularity of THE CANADIAN HORTICULTURIST. As the circulation continues to increase it is our intention to enlarge and otherwise improve the paper, and thereby keep abreast of the development that is taking place in our fruit and horticultural interests.

An excellent article by Mr. T. G. Bunting, of Ottawa, on systems of orchard irrigation that we had intended to publish in this issue had to be held over owing to lack of space. It will, however, appear with a number of other equally interesting articles in our August issue. A special feature of this issue will be a special article dealing with the picking and packing of peaches and written by Mr. Logsdail, of the Jordan Harbor Experiment Station. For the floral department we have been promised an article by Mr. J. McPherson Ross, of Toronto, entitled "Planning for Future Flowers," as well as an article on "Paeonies and Their Care," by Mr. John Cavers, the well-known specialist, of Oakville. Another description of a Canadian garden, freely illustrated, will also be a feature. The August issue will be a strong number.

Great preparations are being made for the Second Annual Packing Number of THE CANADIAN HORTICULTURIST that will appear the first of September. A number of Canada's leading authorities have promised to contribute, and some have already forwarded their articles. We expect that this year's issue will surpass last year's fine number.

## Items of Interest

Prof. W. S. Blair, of Macdonald College, Quebec, has been appointed superintendent of the fruit experiment station recently established at Kentville, N.S., by the Dominion Government. He has also been made Maritime Horticulturist. Prof. Blair is a native of Nova Scotia, and at one time held the position of horticulturist at the Experimental Farm at Nappan, N.S.

At a meeting of the fruit and vegetable growers of the Leamington district held during June the defunct Erie Fruit Company was revived. The object of the growers is cooperation in the matter of car-lot shipments. Shipments will be made to the prairie country. The following officers were elected: President, J. Atkins; secretary, Geo. Ross; business manager, E. E. Adams.

## SOCIETY NOTES

We invite the officers of Horticultural Societies to send in short, pithy reports of work that would interest members of other Horticultural Societies.

## Calgary's Good Work

In Calgary there is a horticultural society that is doing things. Its officers are men of resource, enterprise and public spirit. The city is being benefitted by their activities. Through the kindness of the president of the society, Mr. S. R. Houlton, THE CANADIAN HORTICULTURIST has received a copy of the prize list of the society for 1912. This year it will hold its fifth annual exhibition on August 14 and 15, when one thousand two hundred dollars will be offered in prizes for plants, flowers, fruits, vegetables and decorative designs. A portion of this money will be used also as prize money for lawns, trees and gardens. The society is making a strong feature this year of garden competitions, especially cottage gardens, and is being encouraged by the great interest that is being taken in this special line of work. Last year one hundred and seventeen entries were made in this competition. A grant of three hundred dollars was received from the government last year and one hundred dollars from the city council. Before long we hope to be able to describe a prize winning Calgary garden in THE CANADIAN HORTICULTURIST.

## Windsor's Corner Gardens

From time to time we have published illustrations in THE CANADIAN HORTICULTURIST of the flower beds conducted on the corners of the streets in the city of Windsor by the Windsor Horticultural Society. Last year the society had one hundred and seventy-five flower beds on the corners of the streets. The society gets a grant of four hundred dollars from the city council, and the work of looking after the flower-beds is attended to by men whose services are paid for out of the park estimates of the city. The society buys the plants. When a flower bed is located on a corner it is understood that the people living there must be members of the Horticultural Society and that they will water the flower beds. Much of the credit for the success of this work belongs to Alderman H. J. McKay, who is the secretary-treasurer of the society.

## Ask!

Occasionally we get letters from some of our subscribers asking where they can buy a certain article, or line of goods. They have first consulted the advertising columns of The Canadian Horticulturist, but failing to find what they want they have come to us. We have, in almost all cases, been able to direct them to a reliable firm handling the goods they want.

You who read The Canadian Horticulturist will be requiring many and varied lines of goods during the next few weeks. You will probably, in the majority of instances, be able to find what you want advertised in The Canadian Horticulturist. But some things you may not find. If such is the case write us. It may be something for use in connection with your work in the orchard or garden, something for use in your home, or something for your own personal use. We probably have the information you desire.

We are closely in touch with reliable firms handling goods of almost every description. We are pleased to be of service to our subscribers and any information along this line you need and we possess will be readily given. Ask us.

And when consulting the advertisements in The Canadian Horticulturist remember that every one of them has our personal endorsement. They would not be there if we did not believe they were good firms and would give their customers a fair deal.

We do not admit advertisers to our columns except such as believe are thoroughly reliable.

## The Standard Apple Box for Canada

At the recent Dominion Fruit Conference in Ottawa a resolution was carried requesting the Dominion government to make the standard apple box now used for the export trade the standard box for domestic use also. This box is 10in. by 11in. by 20in. in size. Hitherto there has not been a standard box for use within the confines of the Dominion. The resolution mentioned was not carried until after there had been a lively discussion. Some of the delegates later expressed the view that the standard box decided upon may yet have to be altered.

Mr. W. H. Bunting, of St. Catharines, who, while conducting an investigation into the fruit conditions in Canada last fall and winter for the Dominion government, visited the west, including some of the western States, took advantage of his opportunities to look into the box question. "There are," he said, "a number of different sized boxes in use in the United States, of which two are as follows, 10½ by 11½ by 18¾, and 10 by 11 by 20¾. The box we propose to standardize has not been found the most suitable for their purpose. It is possible that when we get more experience we may find their box the best suited for our needs. While it may be safe for us to standardize our export box for home use also, our doing so will prevent us from gaining experience in the use of boxes of other sizes."

R. H. Agur, Summerland: "I feel that we should not standardize our present box, as while it may be suited for our needs now it may not be suited to them a few years from now."

Robt. Thompson, St. Catharines: "We are coming into competition more each year on the western markets with the apples from the western states, and should be free to meet them on an equal basis by using boxes of the same size as theirs. To standardize our present box may place us under a handicap. For the present we should defer adopting the standard box."

Prof. W. S. Blair, McDonald College, Quebec: "We have been experimenting at the college in the use of different boxes. The students seem to pack the fruit more readily in the Oregon box."

A. W. Peart, Burlington: "About eighteen years ago we used a box that was equivalent to four boxes to the barrel, and liked it very much. When the size was changed to our present export box we felt aggrieved. Now, however, we have adjusted ourselves to its use and are well satisfied with it."

Mr. Gibb, an expert box packer from British Columbia, who, although not a delegate, was present, was asked for his opinion. He stated that both the Pacific Coast and Canadian boxes have certain advantages, but these advantages are not so great either way as to necessitate any change in the size of the Canadian box.

Harold Jones, Maitland, Ont.: "We should not overlook the fact that our Canadian box represents an imperial bushel."

W. A. Pitcairn, Kelowna, B.C.: "Because there is no standard box for home use we can now use any kind of box we want to. There should be a standard, as there is nothing to prevent a firm from using a box that is an inch shallower than our regular

box. We should standardize our present export box."

R. M. Winslow, Victoria, B. C.: "One of the fundamental conditions in the west is that we shall be free to meet the competition of the United States fruit growers on equal terms. There are three cubic inches more space in the boxes they use than there is in ours, while our box has one-seventh more surface. Their box has less waste on the side and carries a little more fruit. This gives them a great talking point with the buyers. Three-quarters of the fruit bought in the west is brought in from the United States. We are going to have to endeavor to replace their fruit with ours, and therefore should be free to compete with them on equal terms. In the States the drift is to the smaller box. This unrest is likely to crystallize within the next two years in the adoption of a standard box. I feel, therefore, that we should defer action for the present."

R. H. Agur: "Many fruit growers are packing apples and pears in the same car, and find the difference in the sizes of the boxes inconvenient. If we change the size of our present apple box the size of the pear box will probably have to be changed also, as well as the peach box. All this would lead to other changes. Everything considered, therefore, I am in favor of continuing our present sized box."

Robt. Thompson, St. Catharines: "Until the best and most convenient sized box is finally decided upon we had better defer establishing a standard sized box for the Canadian home trade."

W. F. Summers, Victoria, B.C.: "At

### Canadian Nursery Co., Ltd.

10 Phillips Place, Montreal, P. Q.



Have an immense stock of all Flowering Herbaceous Plants, Pæonies, Roses, Shrubs and Trees.

Lists and Catalogues on application

A few vacancies for respectable representatives

Terms on application

## Apple Boxes

WE make a good box at the right price. It is especially suited for the apple grower and shipper.

One of our large customers last year used thousands of our boxes for the export trade. Such trade demands a strong, durable box. Our boxes gave every satisfaction.

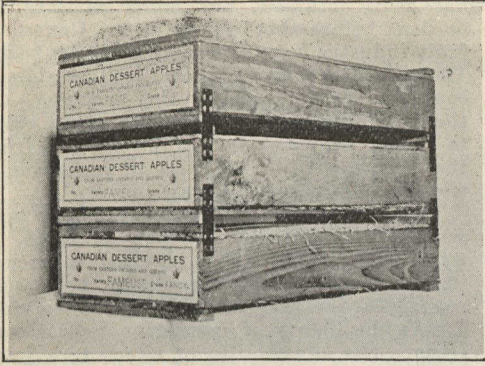
*Our Boxes are Right.*

*The Price is Right.*

*Let Us Quote You.*

**Barchard & Company, Limited**  
135-151 Duke St. TORONTO





#### Convenient Shipping Device

The illustration shows the manner of shipping single layer fruit cases which was adopted for the peaches and choice dessert fruit sent to the Festival of Empire Exhibition in London last year. Three cases are fastened together by the use of the iron clips shown in the illustration. These clips are driven on with a minimum of labor and time and hold the cases together very firmly. The cost is three and a quarter cents a crate of three cases. The clips may be obtained from John N. Warminster, 207 St. James St., Montreal.—Illustration furnished by J. A. Ruddick, Cold Storage Commissioner.

the convention of the British Columbia Fruit Growers' Association the growers were unanimously in favor of adopting our Canadian export box as the standard box for the home trade also."

Robt. Thompson: "If we allow this matter to stand as it is they will still be able to use the Canadian box if they want to."

R. W. Shepherd, Como, Quebec: "Our present Canadian box answers all requirements. We will be retrograding if we do not adopt a standard box."

Maxwell Smith, Vancouver, B.C.: "Our

present Canadian box was approved for use at the last Dominion Conference not only for export purposes but for the home trade as well. Pressure was brought to bear on the government, however, which led to the words "for export" being inserted in the Act establishing it as a standard box, although it was not intended by the conference that these words should be added. We have made a start at uniformity by adopting this box as a standard box for the export trade, and we should complete this work by adopting this box for use for the home trade as well as abroad."

On the question being put to the conference the resolution in favor of adopting the export box as a standard box for home use also was carried by a large majority.

#### Fruit Distributing Facilities\*

W. H. Bunting, St. Catharines, Ont.

The proper distribution throughout Canada of the increasing supplies of fruit will necessitate a close study of transportation facilities. In this respect there is room for great improvement. The officials of our larger railway companies are becoming more and more interested in the fruit trade; they realize that it is an important addition to the volume of traffic, but are not yet sufficiently impressed with the claims of the fruit-grower for better equipment, service and despatch. In many cases very unsuitable cars are supplied; unusual delays in transit are frequently experienced; serious losses occur which are very difficult to adjust; rates of carriage are in many cases excessive and absorb too much of the ultimate value of the product. Some relief

\*Extract from a paper read at the recent Dominion Fruit Conference in Ottawa.

## Douglas Gardens

Oakville, Ontario

We lead in

## PEONIES

in Canada.

The following facts go to substantiate this claim, viz:—Our Fall Planting List,—to be issued 1st August, next,—will describe and offer 67 varieties. Of these varieties 63 are double and 4 are single. Of the double varieties, the American Peony Society classifies 33 as "Extra" or "Very Good"; 25 as "Good"; 4 as "Medium," and one not classified. The same Society has published a list of 50 varieties recommended for Cut Flower purposes, and a list of 60 for Landscape purposes. Of the former list we offer 29 varieties, and of the latter list 30 varieties.

We strongly recommend garden owners to procure some of these fine Peonies for planting in September.

The prices are quite reasonable.

Send name and address and receive a copy of our Planting List.

JOHN CAVERS

## Announcement

The demand for **Pedigreed Nursery Stock** during the past season has been so heavy that we could not supply all our customers, and we have therefore very greatly extended our business.

Stock planted last fall has come through the severe winter in excellent condition and we feel warranted in again advising fall planting for most varieties of fruit.

We shall be glad to answer all enquiries and quote prices for October delivery.

**AUBURN NURSERIES**  
QUEENSTON, ONT.

## To Our Advertisers

Should we have overlooked notifying you by letter, regarding the change in our advertising rates, kindly note that after August 1st, 1912, our rate for advertising will be \$1.25 an inch flat. New or renewal contracts calling for a specified amount of space to be used within one year will be accepted up to Aug. 1st, at our present rate, \$1.00 an inch

### Special September Number

Special value is offered you in our **Exhibition and Fall Packing Number** for September. Those of you who saw our splendid issue of last September will not need to be urged to take advantage of this special number which promises to eclipse its predecessor in every way.

**Guaranteed circulation 13,000. Rate \$37.50 a page. If space is reserved before August 1st, \$30.00 a page. Proportionate rates for smaller space. Special positions available and further information from,**

Advertising Department

The Canadian Horticulturist, Peterborough Ontario

# Good Cheer

WARM  
AIR  
FURNACES



EVEN WITH THIS BIG 6 GALLON WATERPAN WE DO NOT PROMISE HIGHER THAN 55% HUMIDITY THE ORDINARY WATERPAN AFFORDS FROM 18 TO 25% NORMAL HUMIDITY OUT DOORS IS ABOUT 70%

**SEE THE POINT?**

OUR FURNACE LITERATURE IS BOTH INTERESTING AND INSTRUCTIVE — MAILED ON REQUEST

The James Stewart  
Manufacturing Company  
Limited,  
WOODSTOCK, ONT. WINNIPEG, MAN.

No. 3

ART DEPT. CANADIAN MAGAZINE

has been obtained, but much remains to be done before this feature of the Canadian fruit industry is put on a satisfactory basis. The great north-west country will be able to consume, at a profit to the producer, all the fruit that can be grown for many years to come, provided it can be landed from the east and from the west in good condition and at reasonable cost.

This conference will render the very best service to the fruit industry at large, if ways and means can be devised to secure improvement of these conditions, both with regard to the freight and express service. I take the liberty of suggesting to this conference the advisability of selecting a joint committee of say three men, one from British Columbia, one from Ontario, and one representing the Maritime Provinces, whose duty would be to secure facts and information relative to market conditions, both as to supply and demand throughout the Dominion, and give publicity to such information. This committee would also be able to treat with railway companies and other organizations, having regard to the welfare, not only of any particular section or province, but of the fruit industry of Canada as a whole.

## Ontario Apples in the West

Byron W. Webster, Winnipeg, Man.

There is land in British Columbia that is selling on the Winnipeg market very readily at one hundred dollars an acre. This land in most cases is just plain farming land. It includes some timbered land, but none that is any better than land in Ontario. The fruit grown is no better than Ontario fruit, and the railroad facilities no better if as good. Why is it that they can get tip-top prices for their land, while in Ontario land is almost given away in comparison.

Perhaps this will throw a little light on the subject. I went into a fruit store the other day on Main street, which calls itself the city apple market. Barrels of rotten apples were lying around the shop, and on stands were apples that in Ontario we would throw out to the pigs. At their best they were number three, but through time and exposure they were all partially rotted. And horrors of horrors, at the lack of the shop, in big red letters covering the entire back, was printed "High-class Ontario Apples." Beneath that was a sorting table piled up with apples, mostly rotten, with a half bushel measure on one side and a barrel for the rotten ones at the bottom.

And that is the way Ontario apples are advertised. Contrasted with that the British Columbia and Washington fruits are packed in clean boxes, are sold in the best stores and placed in every way to show the public what fine fruit is grown out west. Their enterprise results in large profits for western fruit-growers and landholders. When one examines the fruit, it is no better than that grown in Ontario. I have never seen western apples shown in such a rotten way as I see the eastern apples.

It is just that which makes the western fruit sell at two dollars fifty cents a box, while that grown east sells at one dollar fifty cents, and makes British Columbia orchards sell at five hundred dollars and one thousand dollars an acre, while eastern orchards sell at from one hundred to three hundred dollars an acre. No wonder the people are going west, where up-to-date business methods are employed. Although Ontario fruit-growers are waking up, the progress is altogether too slow. There may be boxed Ontario apples on the Winnipeg



## SLUG-SHOT

USED FROM OCEAN TO OCEAN for 30 years

SOME SEEDSMEN WHO FOR UPWARDS OF 20 YEARS HAVE SOLD SLUG-SHOT IN CANADA:

Chas. E. Bishop, 31 Bridge St., Belleville, Ont.  
Steele Briggs Seed Co., 130 King St. East,  
Toronto, Ont.

Jas. B. Hay, Brantford, Ont.

Patrick Ross, Market Square, Woodstock, Ont.  
George Keith, 124 King St. East, Toronto, Ont.  
Graham Bros., 53-55 Sparks St., Ottawa, Ont.  
Wm. Rennie & Co., Winnipeg, Man.  
J. A. Bruce & Co., 47-49 King St., Hamilton,  
Ont.

Dupuy & Ferguson, 38 Jacques Cartier Sq.,  
Montreal.

Wm. Rennie & Co., Adelaide and Jarvis Sts.,  
Toronto, Ont.

Wm. Rennie & Co., 190 McGill St., Montreal,  
Que.

Adams & Tanton, 115 King St., London, Ont.

Kenneth McDonald, Ottawa, Ont.

A. E. Cameron, Brockville, Ont.

J. A. Simmers, Seedsman, 143-145 King St.  
East, Toronto, Ont.

Wm. Smith, 10th Line East, Petrolea, Ont.

Darch & Hunter Seed Co., 119 Dundas St.,  
London, Ont.

Wm. Ewing & Co., 142-144 McGill St., Mon-  
treal, Que.

Robt. Kerr, 10 Ainslee St., Galt, Ont.

**SAVES CURRANTS, POTATOES, CABBAGE, MELONS, FLOWERS, TREES AND SHRUBS FROM INSECTS**

Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blight, etc., to

**B. HAMMOND, FISHKILL-ON-HUDSON, NEW YORK**

market, but I have been watching the high-class stores and I have yet to find them.

There is land in British Columbia with timber on it in an irrigated country, where a large number of trees were frozen out two years ago, selling on the Winnipeg market at one hundred dollars an acre, and there seems to be no difficulty in selling it.

**Cooperation Progressing\***

Notwithstanding bad legislation and want of leaders in rural affairs and all the other obstacles that have to be met, co-operation is making great headway. It is true that not all the societies have been successful. Many have fallen by the way. Not a few of the fruit growers' associations that were counted among the most successful a few years ago have disappeared and their history is not without interest. But the greater number of the associations have continued to flourish, and they do so in spite of the conditions that surround them rather than because of them. Many of them would long since have disappeared had it not been for the public spirited men who have been entrusted with their management.

**CO-OPERATION AND STORAGE**

It would be invidious to mark out individual societies, and I content myself, therefore, with noting the lines of work that have been particularly successful. I note specially the success which has attended the building of packing houses, warehouses and cold storage equipments. A few years ago, the storage facilities for apples and fruit generally were very meagre, and the storages then existing were in the hands of private individuals and served largely as traps in which the private apple dealer could catch his game and grow rich upon the quarry. To-day there are some scores of warehouses owned by the orchardists themselves and not built for the purpose of earning dividends but for the purpose of improving the fruit industry. This I count among one of the great successes to be reported in connection with co-operation.

**CO-OPERATION AND PRICES**

It might not be out of place to record, as one of the advantages of co-operation, that prices have advanced materially. I do not mean to say that the general advance in the price of apples is solely and wholly due to the co-operative associations, but I do say—and note it as one of the triumphs of co-operation—that the members of co-operative associations are getting to-day at least seventy-five per cent. more for their apples than they were under individual management. This would be no subject for congratulation if it meant that they were getting this advance and did not earn it. The real subject for congratulation is that the apples furnished by the members of the co-operative associations are worth seventy-five per cent. more than they were under individual management, and that the co-operative organization renders it possible for them to get the increased price for the increased value which they have added to their product.

The members of the Norfolk Fruit Growers' Association in former years, when the Liverpool prices were even higher than they are to-day, sold their apples for one dollar and twenty-five cents to one dollar and sev-

\*Extract from an address delivered at the Dominion Fruit Conference in Ottawa.



**Take A Handful Of "St. Lawrence" Sugar Out To The Store Door**

—out where the light can fall on it—and see the brilliant, diamond-like sparkle the pure white color, of every grain.

That's the way to test any sugar — that's the way we hope you will test

*St. Lawrence*  
**Sugar**

**Compare it** with any other sugar—compare its pure, white sparkle—its even grain—its matchless sweetness.

Better still, get a 20 pound or 100 pound bag at your grocer's and test "St. Lawrence Sugar" in your home.

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67

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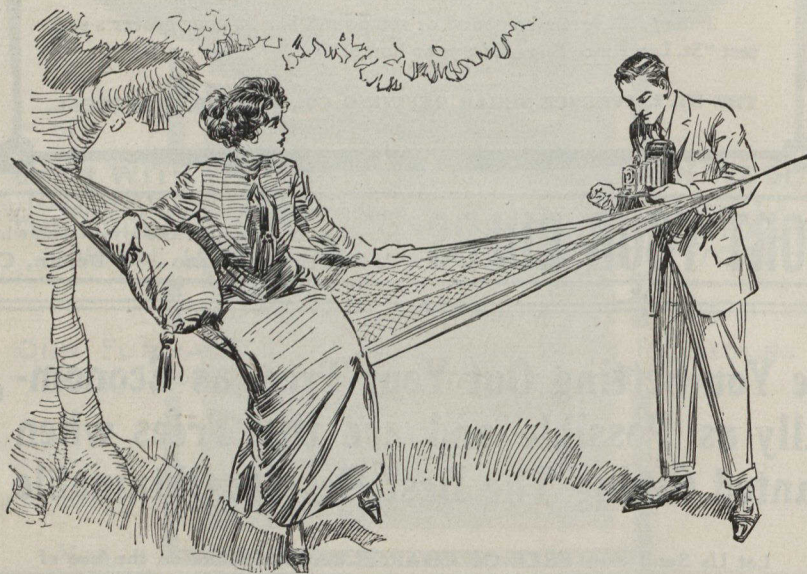
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enty-five cents, and many of them for even less than that. To-day these same members are getting an average of three dollars a barrel, and I repeat that the buyer is getting better value for his money.

#### ASSOCIATIONS AS DISTRIBUTING SOCIETIES

Another great success has been scored in using the associations as agents for buying supplies. In making a comparison between co-operation in Denmark, for instance, and Great Britain, we find that in Denmark co-operation is concerned largely with agricultural production and selling. In Great Britain agricultural production and selling have made progress only during the last few years, but co-operative distribution of the necessities of life has made most extraordinary progress. The co-operative wholesale society of Great Britain last year distributed over \$600,000,000 of products, a sum so vast that it can scarcely be conceived.

There seems to be no reason why distributive co-operation should not make some headway in Canada. Many of the associations have already made some use of the organization for distributive purposes; indeed, the St. Catharines Cold Storage and Forwarding Company is a shining example of what can be done in this line. Their distributions have grown from a few hundred dollars the first year to ninety thousand dollars in 1911, and upon this it is safe to say there has been a saving of from ten thousand dollars to twenty thousand dollars a year. This phase of co-operative work might very well occupy our attention.

#### A Large Perennial Border

F. E. Buck, Central Experimental Farm, Ottawa

At Ottawa this year we have started a new perennial border twelve feet wide and some four hundred and fifty feet long. It will contain, in a few years, the best of everything that will grow in this climate. It is well to mention here, perhaps, that the work which is to be enlarged at the Experimental Farm along the lines of floriculture will deal to some extent with the solution of the problem of the barren parts of the west.

The Dominion horticulturist, Mr. W. T. Macoun, has been working for years to obtain shrubs, trees and plants which will stand the rigorous winters of the middle west. His work has been of untold value. Much work has been done, and much more will be done, in the way of testing varieties of flowering shrubs and flowers. When the results of this work are published it is hoped an added impetus will be given to the work of national betterment through the medium of the flowers.

#### Items of Interest

Eighty British farmers have recently arrived at Tilbury East township, in Kent, Ont. They will engage extensively in truck farming. Houses for their farms have been built in Toronto and are being shipped to Tilbury East in sections.

The Welland Cooperative Fruit-Growers' Association has been organized at Marshville, the members being principally fruit-growers of Wainfleet. They will handle their own fruit, purchase supplies and in other ways endeavor to make the fruit business a greater success. The following officers were elected: President, C. H. Wills; vice-president, R. R. Davis; secretary, W. E. Palmer.

## Fruit Conditions in British Columbia\*

W. H. Bunting, St. Catharines, Ont.

**F**RUIT conditions are varied in British Columbia and are very different to those which obtain in Ontario and the eastern provinces, complying more nearly with such as are to be found south of the line in Washington, Oregon and Idaho, states which have gained a wonderful reputation during the past few years for the production of enormous quantities of fancy, high-colored apples, as well as other fruits.

District number nine comprises what is known as the Lower Mainland and the Islands of the Coast, of which Vancouver Island is much the largest and most important. This area is characterized by a mild climate for the most part, with a very considerable humidity and great precipitation during certain seasons of the year, the total rainfall at Vancouver averaging about seventy inches annually. For this reason, and on account of the great fertility of the soil, small fruits do exceptionally well all through this territory. For the same reason the range of tree fruits is somewhat limited, and the varieties chosen for planting must be selected with care in order to be successful with them. Several varieties of apples, pears, plums and cherries do very well, more particularly the earlier kinds of apples, and those stone fruits not susceptible to brown rot. Some very fine orchards are to be found in this district, that of Mr. T. A. Bryden, near the city of Victoria, being a good example of what can be accomplished under proper care and management.

Strawberries, raspberries and other small fruits luxuriate in many parts of this district, and have been planted largely in different localities. The section on the main line of the Canadian Pacific Railway from Mission to the Coast, and the territory in the southern portion of Vancouver Island are the most largely developed and important. An excellent market is available, both locally and in the prairie towns and cities, and is not by any means adequately supplied. There is plenty of suitable land available for further planting. One of the chief hindrances to a rapid extension of the small fruit industry is the difficulty of securing sufficient help, especially during the picking season. This might be remedied to a large extent by adopting the methods in vogue in the states to the south, where cheap summer cottages are provided for families who are brought from the cities

\*Extract from a paper read at the recent Dominion Fruit Conference in Ottawa.

and taken care of on the farms during the busy season.

District number ten includes the various inland valleys of the province, and contains large areas of land where irrigation is necessary to secure profitable crops. There are also several important sections where the rain and snowfall are sufficient to furnish all the moisture required.

A remarkable movement has been undertaken during recent years in connection with the development of the semi-arid or dry areas. Encouraged by the success which has attended similar enterprises in the states to the south, and the results obtained from the orchards planted by the early settlers, where a supply of water was easily available, public attention was drawn to the establishment of irrigation projects in many parts of these valleys. Many thousands of acres have been brought under these systems and are being rapidly changed from comparatively barren areas of little or no value to magnificent orchards of fruit, and farms where large quantities of vegetables and other crops are being profitably produced.

### PERMANENT SYSTEMS

Many of these irrigation systems are being constructed and extended in a most permanent and substantial manner by the more general use of concrete ditches and pipes, with steel flumes where necessary, instead of the ordinary open ditch and wooden flume which, while answering the purpose, allows considerable waste of water and requires frequent repair. It will not be possible to go into detail with regard to this feature of the development of British Columbia fruit-growing, and I can only mention as a type of these systems the one under the control of the Coldstream Estates Company at Vernon, known as the White Valley Irrigation and Power Company, which is perhaps the most extensive and important of the large number established in the Okanagan Valley, if not in the entire west. In this vicinity are also to be found the celebrated orchards of the Coldstream Estate Company, containing five hundred and forty-eight acres of fruit trees in various stages of growth, planted by the company as a commercial undertaking, with three hundred additional acres planted for clients. A number of the orchards on this property have been producing crops of fruit for some years, and very large profits have been derived from them.

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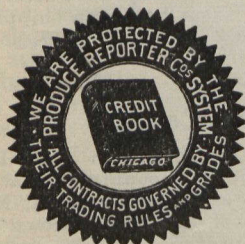
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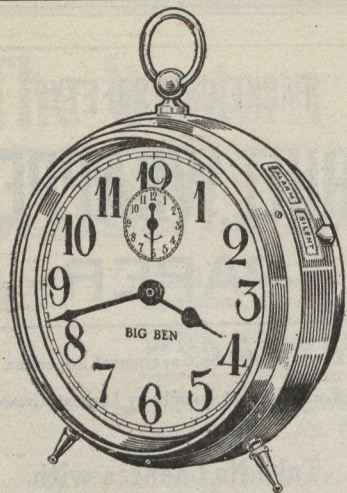
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throughout these valleys under systems of irrigation, chief of which might be mentioned Kamloops and Walthachin on the main line, Vernon, Kelowna, Summerland and Penticton in the Okanagan Lake district, and Grand Forks in the Kettle River Valley, in addition to numerous localities such as Salmon Arm, Armstrong, Nelson, The Needles, Nakusp and many others where irrigation is not essential. In all these valleys many hundreds of acres have already been planted to the tree fruits. There are still thousands more awaiting the coming of the settler to take advantage of the opportunities which are at present lying dormant in this western province.

Some criticism has been made at times in regard to the dessert qualities of British Columbia apples. I believe, however, that this province, in public competition, not only with the states to the south, but with the older fruit districts of the east, has demonstrated that it can produce fruit which cannot be excelled for size, color,

freedom from blemishes and, in the case of many varieties, for dessert qualities.

### UNSOLVED PROBLEMS

The country is new; many problems are unsolved, and in some cases the great opportunities of the west have been manipulated by the unscrupulous land-jobber, but all honor I say to the men who, with strong conviction and great courage, have undertaken the work of making the fruit industry the most important agricultural feature of this province of wonderful resources. They will be able to profit by the experience of the older provinces and avoid many of the mistakes made in the earlier days when horticultural knowledge was much more meagre than it is to-day. They have the success of the states to the south as an incentive to stir them up to good works, and there is every indication that in a very few years British Columbia apples will be favorably known in every fruit-consuming country on the globe.

## Nova Scotia's Fruit Development

W. T. Macoun, Dominion Horticulturist, Ottawa

THE Cornwallis and Annapolis Valleys, where most of the fruit of Nova Scotia is grown, is practically one valley. It is about one hundred miles long and from six to eleven miles in width, and lies between two ranges of hills about six hundred feet in height. On the west side of the valley the North Mountain protects the orchards from the winds which blow across the Bay of Fundy. Tidal rivers through and intersecting the valleys help to moderate the climate in winter and also moderate the heat in summer. The spring is comparatively late and the autumn usually rather cool. Most of the older orchards are planted on the lower and heavier soils, but some of the most profitable ones are on the sandy and gravelly slopes of the hills, and many orchards are being planted in such situations, as the land is usually cheaper than where the soil is heavier.

Apples, pears, plums, cherries and small fruits, and to a limited extent peaches and grapes, are grown in these valleys. The mining towns of Nova Scotia, of which there are a great many, use large quantities of the small fruits which are grown very successfully in most parts of the province.

### A GREAT LOSS

Like the other Maritime Provinces, Nova Scotia has suffered by the constant emigration of her young men to western Canada and to the United States; and while the men who remained realized what a great future there was in the fruit-growing industry, they could not induce many of their sons to stay at home. There was also little, if any, cooperation among the growers, and it was left to a few enthusiastic men to do what little was done for the general welfare. Now, this is all changed, and cooperation is the watchword. During the past two seasons twenty-two cooperative associations have been formed, and while each of these associations has its local manager, a general manager for them all has been appointed this year.

### EFFECT OF COOPERATION

The fruit growers of the Annapolis Valley, and in fact in all parts of Nova Scotia, are, most of them, intelligent men, and it but needed the cooperative movement to bring about the marked advance in methods of growing and handling the crop, which is

seen to-day, although the progressive fruit growers of the Annapolis Valley have long been noted for the good culture they gave their trees. With the cooperative movement came the more general use of the power sprayer, many of which have been bought during the past two years.

### A GREAT CROP

During 1911 there were few trees of bearing age that did not have fruit, and most of the trees were almost breaking with their load, the fruit being very free from blemishes, and higher colored and better matured than usual. Barrels ran short and fruit growers lent a helping hand to the coopers to keep up the supply. One factory near Port William, we are told, turned out fifteen hundred barrels a day for two months, another one twelve hundred, and so on. There are about ten of these factories in a radius of ten miles. About one hundred warehouses are scattered along the railway in the Annapolis Valley, in which the fruit is sorted, packed and stored until shipped. At some centres there are from four to five, and brick buildings are now being erected. The writer visited the Annapolis Valley during the first week of November, and found the fruit practically all safely housed. Two of the largest growers are said to have each harvested about eight thousand barrels of apples, while other yields of from four to five thousand barrels were reported. It was expected to send one hundred and fifty thousand barrels to the Canadian North-West, and many of these had been shipped, including sixty-three thousand barrels of Gravensteins.

### Norfolk County

The wonderful transformation that has been worked in Norfolk county, Ontario, largely through the efforts of one man, Mr. James E. Johnson, of Simcoe, is shown by the fact that within the past five years nearly 260,000 fruit trees have been set out in that section, while the output from the old orchards has increased from ten thousand to nearly 40,000 barrels annually. As a result of the improved methods which have been adopted there are fewer instances of insect pests and fungous diseases than ever before, while the price paid for fruit has advanced materially.

## The Cold Storage of Apples\*

J. A. Ruddick, Cold Storage Commissioner, Ottawa

ANY apple which is ripe enough to show signs of softening is past the stage for successful cold storage treatment. Any decay in the form of rots, especially the ordinary brown or soft rot, will be arrested very little, if arrested at all. Take the Northern Spy for instance. Well-developed specimens with sound skins, and put away in time, will keep with the best, but at the same time this variety is also very susceptible to rots if the skin is broken or injured in any way, and for this reason it frequently does not keep well in cold storage.

### KEEPING QUALITIES

Apples which are well matured on the trees, but still firm, will keep better and longer than if picked at an earlier stage. Well-matured apples show less tendency to scald. This is very marked in the case of the Greening. In tests which the Department made in 1909-10 apples of this variety picked rather early at a certain date, scalded badly in cold storage, while others from the same tree picked three weeks later were almost free of this rather serious defect. If the Greening has reached the stage when it shows a faint blush there is not apt to be much scalding. A good color seems to be a great protection against scalding in all varieties. Late varieties of apples which are grown in localities where the season is longest and where they reach the greatest maturity on the trees, are the ones which will give the best results in cold storage. This is all the more important, when considered along with the well-known fact that under what may still be termed as normal conditions of handling the apples grown in these localities are not noted for good keeping qualities. The same thing applies in general to a season like 1911, when the crop matured early on account of the hot weather. There are very general complaints about the poor keeping of apples this winter, and yet the 1911 crop possessed the very qualities which would have given good results in cold storage, providing the storing had not been too long delayed after picking, as was the case with some that I have heard of.

I believe that the repacking of barrelled apples, which is now so generally practised in the frost-proof warehouses in Ontario and Nova Scotia, could be dispensed with if the apples were sent promptly to cold storage. In 1909 the Dairy and Cold Storage Branch made some trial shipments to test this matter. A car load of Spies and Baldwins were divided, one lot being put in a frost-proof warehouse and the other sent to cold storage at St. John, N. B. The first lot was shipped without repacking. Both lots were sold together in Glasgow in the month of March. After paying the cold storage rates we found that the cold storage lot netted us from ten to seventy cents a barrel more than the others.

There were both number one and number two apples in these lots, and it is interesting to note that the number one apples gave the greatest gain in cold storage. Full particulars of these trial shipments will be found in bulletin number two of the Dairy and Cold Storage Series. It may be of interest to add that one box of Spies from the cold storage lot was held for eighteen months. The quality was well preserved and the apples stood up well after being removed to an ordinary room temperature.

\*Extract from a paper read at the Dominion Fruit Conference in Ottawa.

This box was held for the first six months at thirty-two degrees, and after that at thirty. The latter is the best temperature, but of course it is very near the danger line, and great care has to be taken at such an extreme low temperature to prevent some part of the storage room from reaching the freezing point of the apples.

There is considerable difference in the behavior of different varieties of apples in cold storage. This phase of the subject offers a field for further investigation and study.

### STORAGE OF PEARS

With respect to other fruits, the pear probably is the one which is best adapted for successful handling in cold storage. Some varieties may be carried for several months in perfectly satisfactory condition. Many growers in the Hudson River Valley store a large part of their crops and market them in New York for the Christmas trade. The total quantity of pears carried in cold storage for several months every year in the United States is said to be nearly half a million bushels.

I am of the opinion that the season for special varieties of grapes might easily be extended very considerably with proper management. We have not had an opportunity to acquire much data in this connection, but in the fall of 1910 some twenty-five commercial baskets of "Wilder" and "Vergennes" were sent to the London cold storage and held at about thirty-four degrees. I had some of these grapes sent to Ottawa on March 8th and they were in very fair condition.

I hope sometime to be able to secure facilities that will enable me to study the matter of grape and other fruit storage more carefully, because I feel that we have much to learn as to the most suitable temperatures, style of packing, and other conditions of storage. It may not be out of place to say that opinion has changed with respect to the most suitable temperatures for carrying fruit, and it is now pretty well established that the lowest possible temperature without freezing will give the best results, and that a difference of one or two degrees will have a noticeable effect on the length of time that fruit will be preserved.

The actual freezing temperature of fruits will depend largely on the percentage of sugar in the juices. I do not think any apples will freeze at thirty, but how much lower some varieties might be safely carried I am unable to say. Australian experts say that pears will keep best at twenty-nine to thirty degrees, and that grapes grown in that country will stand even lower temperature because of a higher percentage of sugar. I think it is likely, however, that Australian grapes contain much more sugar than those grown in Canada do, because of the hotter climate in that country.

There is another side to the question of cold storage, and that is the commercial one, as to how far the cost of cold storage will be balanced by increased returns in the sale of the fruit. This will have to be determined very largely by practical experience. I do not believe for a moment that it is necessary or desirable to provide cold storage for the whole of the Canadian apple crop. I have indicated some of the special ways in which it may be of great service. I believe that it would pay to refrigerate a large proportion of the so-called frost-proof warehouses now in use in Ontario and in Nova Scotia. This could be done at com-

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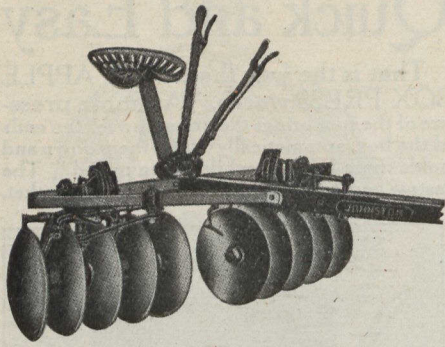
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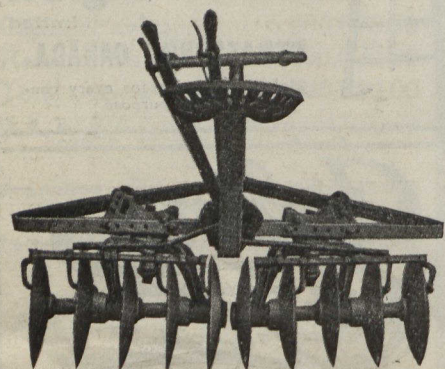
Extra Discs with Spools can be furnished for converting the machines into a twelve disc size.

The Harrow with ten Discs cuts 5 feet and 6 inches, and when the Extension Frame is used the machine measures 10 feet and 1 inch in width.

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paratively little cost, as most of them are already fairly well insulated. Where there are two or more warehouses in a locality it would be quite practicable to operate them all from a central refrigerating plant with a pipe line system connecting with each warehouse. This plan could be carried out at places like Brighton and Colborne on Lake Ontario, and at many stations on the Dominion Atlantic Railway in Nova Scotia. It would be very economical both in the matter of equipment and operation.

It has always seemed to me since I have been able to give any attention to such matters that small cold storages using ice, or, better still, salt and ice as a refrigerant, would be of much service to individual growers, and especially in the tender fruit districts.

### Recent Publications

A number of interesting and valuable publications have reached THE CANADIAN HORTICULTURIST during the past month. "Vegetable Gardening," by Ralph L. Watts, Prof. of Horticulture, in the Pennsylvania State College, is one of the most complete works dealing with this subject we have yet seen. It is written with a twofold purpose, first to meet the demand of instructors desiring a text-book on vegetable gardening, and, second, to present in an organized form data of value to all classes of vegetable growers. The work relates to the culture rather than the systematic study of vegetables, although some attention is given to a description and classification of the more important garden crops. The subjects dealt with include soil, tillage and tillage tools, manures and cover crops, commercial fertilizers, irrigation, insects and diseases, seeds and seed growing, hot beds and cold frames, transplanting, cultural directions and marketing. The book comprises over five hundred pages, is profusely illustrated and may be obtained from the Orange Judd Company through The Horticultural Publishing Co., Peterboro, Ont.

"Oxford Gardens," by R. T. Gunther, M.A., Fellow of Magdalen College, Oxford, is a beautifully bound, well-illustrated volume of almost three hundred pages. Its contents are based upon Daubeny's Popular Guide to the Physick Garden of Oxford, with notes on the gardens of the colleges and on the University Park. This volume may be obtained from Simpkin, Marshall and Company, of London, England.

Bulletin No. 99, of the University of Missouri, Columbia, Missouri, deals with the inspection of commercial fertilizers. Bulletin 98, of the same college, is entitled "San Jose Scale in Missouri." It is illustrated and contains valuable information concerning the character and control of this pest.

The Department of Agriculture of the Province of Quebec has issued the report of the Experimental Fruit Stations of the province for 1911. The report is by Auguste Dupuis, Director of Fruit Stations, and includes reports from the substations throughout the province. The report shows that considerable good work is being done by the fruit stations in Quebec.

The Dominion Department of Agriculture has issued a bound volume containing Bulletins 21 to 30 of the Dairy and Cold Storage Commissioner's series, being volume two, 1907 to 1911. It contains the reports on the trial shipments of cold storage apples and peaches and the Inspection and Sale Act, revised edition.

The making of grape vinegar is discussed by Frederic T. Bioletti in Bulletin No. 237

of the Agricultural Experiment Station, Berkeley, California.

From the Agricultural Experiment Station at Ames, Iowa, has been received Bulletin No. 127, entitled "Spraying Practice for Orchard and Garden," by S. A. Beach.

The use of explosives in clearing land is dealt with at considerable length by J. F. Kadonsky, in Bulletin No. 216, of the University of Wisconsin, Madison, Wisconsin.

New control methods for pear thrips and peach tree borer are described by Earl L. Morris, in Bulletin No. 228, of the Agricultural Experiment Station at Berkeley, California.

The division of botany of the Central Experimental Farm, Ottawa, is distributing Bulletin No. 63, by H. T. Gussow, Dominion Botanist, entitled "A Serious Potato Disease Occurring in Newfoundland." The disease is the potato canker, which has caused enormous damage in Europe. Canadian growers are warned to be on the watch for its appearance in Canada.

The University Farm, St. Paul, Minn., has issued extension bulletins 22 and 23. The first is entitled "Establishing the Orchard," and is by K. A. Kirpatrick. The second deals with "Some Common Insects and Their Control." It is compiled from "Insect Life," by F. L. Washburn, State Entomologist, and Warren Williamson.

The German Potash Syndicate, of Toronto, is distributing a well-illustrated pamphlet by T. Walter Shipley, entitled "Fertilizing Fodder Crops." Among other useful information it gives tabulated results of fertilizer experiments with fodder crops, showing calculated profits.

### The Thinning of Fruit

(Concluded from page 161)

ing. On slender twigs and on wood of the past season's growth (where many varieties bear heavily in British Columbia), it is well to thin to a greater distance than on strong fruit spurs in the body of the tree. On the outside twigs and shoots, the fruit will average smaller than on the stouter branches; they are unable to grow a close crop of fruit to perfection.

A very important point, especially with regard to the Yellow Newtown apple, is that the centre apple of the cluster and not one of the side apples, should remain. The centre blossom of the cluster comes out first; its stem is usually shorter and stockier than those of the outside blossoms, and at the time of thinning the apple is usually much larger than the others and on a shorter stem. The centre apple usually hangs better to the tree, is the typical apple of the variety, is less liable to variation in shape, and having a shorter stem is better for packing and for appearance's sake.

Fruit spurs vary greatly in size and vitality; the best spurs bear the best fruit; the weaker spurs should be given a chance to develop into strong ones before next year's crop.

In the production of fancy fruit, thinning pays, and pays well. It means much in the assurance of crops of only higher-class fruit. It is not likely to be of value unless the orchard is right in the matters of variety, fertility, cultivation, pruning, and spraying; it is not likely to give good returns unless the high-class article produced is properly packed and marketed by business-like methods. Thinning is an essential feature of the new orchard culture.

I am much pleased with THE CANADIAN HORTICULTURIST and would not be without it for twice the cost.—P. E. Smith, Roxham, Que.



**MAXWELL**

**MAXWELL'S**  
**HIGH SPEED**  
**CHAMPION**

**is the Washer for a Woman**

In the first place, Maxwell's "Champion" is the only washer that can be worked with a crank handle at the side as well as with the top lever. Just suit your own convenience.

Another Maxwell feature—Lever and Balance Wheel are so accurately adjusted and work up such speed that the washer runs along even when you have stopped working the lever. There's no doubt about Maxwell's "Champion" being the easiest running washer on the market.

Write for new illustrated booklet if your dealer does not handle Maxwell's "Champion" Washer.

**DAVID MAXWELL & SONS.**  
St. Mary's Ont. 92



**To Make Quick-Growing Plants Grow Quicker; and Slow—Faster USE**



**Bon Arbor**

It is a complete plant food. Feed your plants; get results; do it now.

Bon Arbor is favorably known everywhere it is used and it is widely used. Such gardens as those of the Capitol at

Washington, D.C., and the Parliament Gardens, Ottawa, Canada, and the Royal Windsor Gardens, England, on the one side, and over 2000 country estates and farms on the other, represent the field supplied. Show flower and vegetable growers find Bon Arbor indispensable. Bon Arbor won the silver medal, the highest prize awarded at Royal International Show, London.

**Bon Arbor is put up as follows:**

1/4 pound package, making 15 gallons, by mail	30c
1 " " " " " "	30 " 55c
5 " " " " " "	150 " \$1.80

Prices on quantities of 50 pounds and upwards on application. Ask your dealer or write direct

**BON ARBOR CHEMICAL CO.**  
Paterson, N. J., U. S. A.

Write for descriptive catalogue, new 1912 Edition. We manufacture also Radix Worm Eradicator, Insecticides, Weed Killer and all agricultural chemicals. Special prices on large quantities.

**FLOWER POTS**

Hanging Baskets, Ferns Pans, Etc.



We have a large stock of all sizes on hand, and can ship orders without delay.

**Order Now Before the Rush**

Our pots are smooth and well burnt. We have our reputation to keep up.

Send for Catalogue & Price List

**The Foster Pottery Company, Ltd.**  
Main St., West Hamilton

**Fruit Crop Prospects**

The fruit crop report, issued during the latter part of June by the Dominion Fruit Division, is in part as follows:

The prospects for an excellent apple crop are maintained. In eastern Ontario and in parts of Quebec the Tent Caterpillar is doing serious damage. With this exception insect and fungous diseases are perhaps only normal. The number of well cared-for orchards is on the increase and the result shows in the reports of better crops. British Columbia had a very light crop last year and is looking with confidence to a heavy crop this year. Nova Scotia, though it had an exceptionally heavy crop last year, has prospects of almost as good a crop for the present season, though there are many contingencies that make the crop still uncertain.

**PEARS**

The pear crop per tree is in good condition. In Eastern Canada many correspondents speak of the pear industry as practically a thing of the past on account of Blight. Even such resistant varieties as the Kieffer, in some cases, show serious losses from this disease. It is rather difficult to make an estimate of the aggregate of the crop. While the condition of the fruit is good, the acreage has undergone such a change that the effect upon the market can hardly be fairly estimated. The conditions in British Columbia are favorable for a large crop.

**PLUMS**

The plum crop is slightly above the average. The Japanese varieties are very irregular, due, in all probability, to the effects of the weather. The bloom everywhere was good, but pollination in some orchards was defective, and almost a total failure is the result. On the other hand, many correspondents have full crops. European and American varieties are not so irregular and promise well.

**PEACHES**

No great change has taken place in the condition with reference to peaches. The Niagara district has a good setting of most varieties. South-western Ontario will have a very short crop, probably not enough to supply the home market. Many cases of winter killing, not apparent in the early part of the season, are now showing in both the Niagara district and Western Ontario. The loss of peach trees in Western Ontario will be serious and will probably discourage large plantations for many years, except in limited areas. The British Columbia crop per tree is good, but the aggregate quantity is small.

**CHERRIES**

Sweet cherries are showing some signs of winter killing, and even where the trees are vigorous, the set of fruit is short. Sour cherries are an excellent crop everywhere.

**GRAPES**

The winter killing of grapes is somewhat larger than was expected but not sufficiently serious to make a marked difference in the crop. In sound vines the growth is healthy, but late. A medium crop, however, is expected.

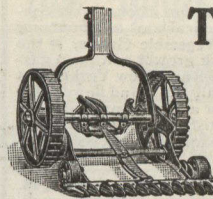
**SMALL FRUITS**

Weather conditions have been favorable for strawberries; but even good weather conditions cannot make up for the poor stand of last year's plantings. Hence, in Eastern Canada there will be an excellent crop per vine but a very much reduced acreage; or if the actual acreage is not reduced the number of plants per acre will be reduced. As our percentage reports take no account of acreage there will ap-

**GINSENG**

Ginseng Roots and Seeds, also Golden Seal Roots for sale at low prices. If you have any Hay for sale see what we can do. Ask for prices.

**EASTERN TOWNSHIPS GINSENG GARDENS**  
Box 1122 Beauharnois, Que.



**THE CLIPPER**

There are three things that destroy your lawns, Dandelions, Buck Plantain and Crab Grass. In one season the clipper will drive them all out.

**CLIPPER LAWN MOWER CO.,** Box No. 8, Dixon, Ill.

**INTERNATIONAL**  
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**GALL CURE**

Cures Horses While They Work or Rest

PRICE 25¢ AT ALL DEALERS

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For Products of the Farm, the Garden and the Home.  
Liberal Premiums for all classes of Horticulture.  
**ALL ENTRIES CLOSE AUGUST 15th**

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WHY ARE YOU IMPORTING PHOSPHATE AND AMMONIA WHICH IS A BY-PRODUCT OFF YOUR FARMS OF WHICH YOU ARE EXPORTING MANY THOUSAND TONS ANNUALLY, BONES AND WHICH CONTAIN LARGE QUANTITIES OF PHOSPHORIC ACID AND AMMONIA.

KINDLY ANSWER THE ABOVE

PURE BONE MEAL IS THE CHEAPEST  
**FERTILIZER.**

THIS PLANT FOOD IS ALL FROM OUR CANADIAN SOILS AND SHOULD ALL GO BACK.  
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from Vegetables is not impossible

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The Rural New Yorker says of this book: "We consider this the most useful and practical book on gardening that we have examined." The Vegetable Grower is the best paper published for the truck grower and farm gardener. It is the same size as the Rural New Yorker, has departments for vegetables, small fruits and flowers for the market. Send \$1.00 to-day for a three years' subscription and the book FREE. Satisfaction guaranteed or money refunded. Send to-day stamps, money, post office order or check.

THE VEGETABLE GROWER 1222 Boyce Bldg., Chicago, Ill.

## Cabbage Plants

One thousand : \$1.50

One hundred : .25

Bow Park Farm, Brantford, Ont.

## FOR SALE AND WANTED

Advertisements in this department inserted at rate of two cents a word for each insertion, each figure, sign or single letter to count as one word, minimum cost, 25 cents, strictly cash in advance.

WRITE QUICK for import price list of bulbs for fall planting.—C. Mortimer Bezzo, Berlin, Canada.

TELL YOUR FRIENDS about the splendid Exhibition and Fall Packing Number of The Canadian Horticulturist for September. Some information on packing fruit may be useful to them. Suggest that they write for a free sample copy.

## FARMS FOR SALE

ALL KINDS OF FARMS—Fruit farms a specialty.—W. B. Calder, Grimsby.

NIAGARA DISTRICT FRUIT FARMS.—Before buying it will pay you to consult me. I make a specialty of fruit and grain farms.—Melvin Gayman & Co., St. Catharines.

LARGEST APPLE ORCHARD IN ONTARIO, adjoining the live town of Picton. 65 acres of apple orchard, youngest trees of which are 8 years old, others 11 and 30 years old, all in good condition, large house with furnace, bath, water-works, electric light. For further particulars write F. J. Watson, 127 Bay St., Toronto.

ASK DAWSON. He knows.

IF YOU WANT to sell a farm consult me.

IF YOU WANT to buy a farm consult me.

I HAVE some of the best Fruit, Stock, Grain and Dairy Farms on my list at right prices.

H. W. Dawson, Ninety Colborne St., Toronto.

SALMON ARM, Shuswap Lake, B.C., has the finest fruit and dairy land in B.C. No irrigation necessary; mild winters, moderate summers, no blizzards, or high winds; delightful climate; enormous yields of fruit, vegetables and hay; good fishing; fine boating amidst the most beautiful scenery, and the Salmon Arm fruit has realized 25 cents per box more than other fruit in B.C. Prices of land moderate, and terms to suit. Apply to F. O. Haydock, Salmon Arm, B.C.

MAKE FROM \$1,500 TO \$3,000 a year clear profit on five acres. The Lower Fraser Valley of British Columbia, near Vancouver. Temperate climate, grass keeps green all winter. Close to B.C. Electric Station, Great Northern Railroad, on best wagon road in the Province. High school, churches, stores of all kinds. Plenty hunting and fishing. I sell these cosy little farms for as little as \$50 down, \$10 a month. Write me for full particulars.—W. J. Kerr, Ltd., 1720 Columbia St., New Westminster, B. C.

pear to be nearly a standard crop, yet the markets will show high prices. Ontario will be decidedly short though the yields of all the successful plantings of last year will be above the average and, if extreme drouth does not set in, a much larger crop will be harvested than is anticipated. Canners who are usually well informed on crop conditions in their immediate neighborhood are, in almost every case, offering prices that would go to show that they expect a serious shortage in strawberries and raspberries. Black currants in commercial plantations will also be short. Red currants and gooseberries promise well. Blackberries were severely injured by the winter frosts, but with good weather conditions may yield a fair crop though not sufficient to meet the probable demands.

British Columbia has a normal acreage and a good crop of all small fruits.

Tomatoes were planted in excellent condition, and while the cold weather has undoubtedly retarded their growth, they are now in splendid condition to go into the warmer weather which may be expected. There is a very large increase in the acreage this year.

## An Orchard Competition

P. W. Hodgetts, Parliament Buildings, Toronto, Ont.

The Department of Agriculture and the Ontario Fruit Growers' Association will this year conduct an orchard competition in all parts of Ontario. We wish to bring this to the attention of fruit growers everywhere at as early a date as possible. The money for this competition has been secured from the federal grant, and announcement of the competition could not have been made earlier. It is a little bit late now, but we desire to go on with it this year.

Ontario will be divided into six districts, as follows:

No. 1. Eastern Ontario District, comprising Lennox, Addington, Frontenac, Renfrew, Leeds, Lanark, Grenville, Carleton, Dundas, Russell, Stormont, Glengarry and Prescott.

No. 2. Lake Ontario District, comprising Halton, Peel, York, Ontario, Durham, Northumberland, Hastings and Prince Edward.

No. 3. Niagara District, comprising Lincoln and Wentworth.

No. 4. Lake Erie District, comprising Essex, Kent, Elgin, Norfolk, Haldimand, Welland, Brant, Oxford and Middlesex.

No. 5. Lake Huron and Georgian Bay

District, comprising Lambton, Huron, Bruce, Grey and Simcoe.

No. 6. Centre Ontario District, comprising Victoria, Peterboro, Dufferin, Waterloo, Wellington and Perth.

Prizes will be offered in each district of from \$15 to \$75, depending on the acreage. In two of the districts where apple orcharding is not carried on to as large an extent as in the others, the sizes of orchards specified are somewhat smaller, ranging from thirty to one hundred and twenty trees. In the districts around the Lakes prizes are offered for orchards from forty to one hundred and twenty trees, from one hundred and twenty to three hundred trees and in orchards from three hundred trees up.

A score card will be used in judging with the following number of points given for each orchard operation:

Pruning and scraping .....	18
Spraying .....	18
Cultivating or mulching .....	10
Barnyard manure or commercial fertilizer .....	10
Quality .....	10
Quantity .....	10
Cover crop .....	8
Marketing .....	6
Fences .....	2

100

The competition will be for the year 1912 only, and bearing orchards will be considered, non-bearing orchards not being counted in the acreage entered. In District number three, comprising the Counties of Lincoln and Wentworth, all tree fruits and grapes will be included. In the other districts the competition will be limited to apples.

Regular application forms may be obtained from the offices of any of the District Representatives of the Department of Agriculture or direct from the Fruit Branch, Parliament Buildings, Toronto, on application.

The judges will pay two visits to each orchard during the remainder of the present season. Men thoroughly in touch with modern orchard practices will be sent out to do the judging. The visit of these men alone will be of value to the orchardist, as he should be able to obtain some valuable information on the most modern lines of handling trees. We would urge readers of THE CANADIAN HORTICULTURIST who consider that they are conducting their orchards along the most profitable lines to enter this competition.

SPECIAL

## Exhibition and Fall Packing

NUMBER

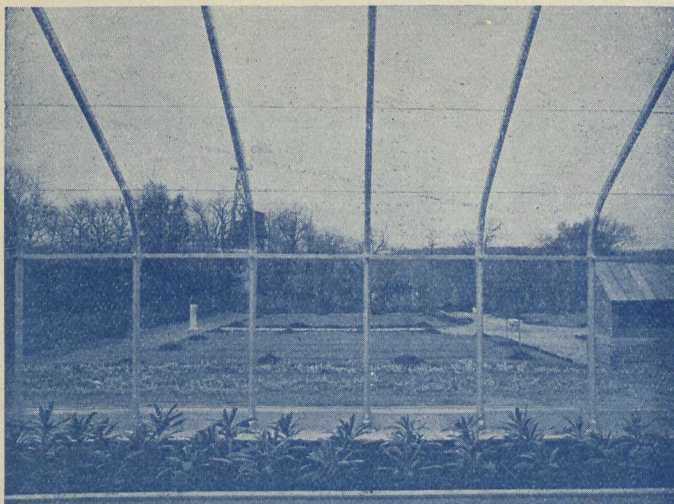
THE INFORMATION contained in the September number of the Canadian Horticulturist—our Annual Exhibition and Fall Packing Number—will be from practical fruit men, and will deal with the fundamentals of the profitable handling of the fruit crop.

THE COVER will be one especially designed for this number.

THE CIRCULATION will be 13,000, guaranteed.

THE RATE will be \$37.50 per page, flat. Proportionate rate for smaller space.

Contracts made before August 1, 1912, will be accepted at present rate of \$30.00 a page.



**The Eave Line is Where The Ordinary House Rots Out, Because The Condensation Gets into the Joints: The U-Bar House Has No Eave Joints. It is The Original Curved Eave House.**

A curved surface is stronger than an angle unless heavily braced, therefore, the curved eave makes the most rigid house. Combine these enduring points with no gutter to cast shade and you

have a house that can't be equalled for growing qualities, and surpasses all others for attractiveness,

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## U-BAR GREENHOUS

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## Greenhouse Glass

We manufacture a special line for greenhouses. It is of good quality, flat, squarely cut and even thickness, virtues which cannot be dispensed with for lapping or butting.

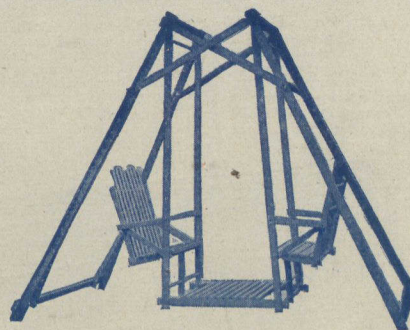
Shall be pleased to quote prices on application to any of our Canadian depots:

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Works at St. Helens, Eng.

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**Just the thing for your Lawn or Garden**

It is fine for the youngsters and a source of enjoyment for the grown-ups too. It is inexpensive and helps you get the best of a summer's outdoor comfort.

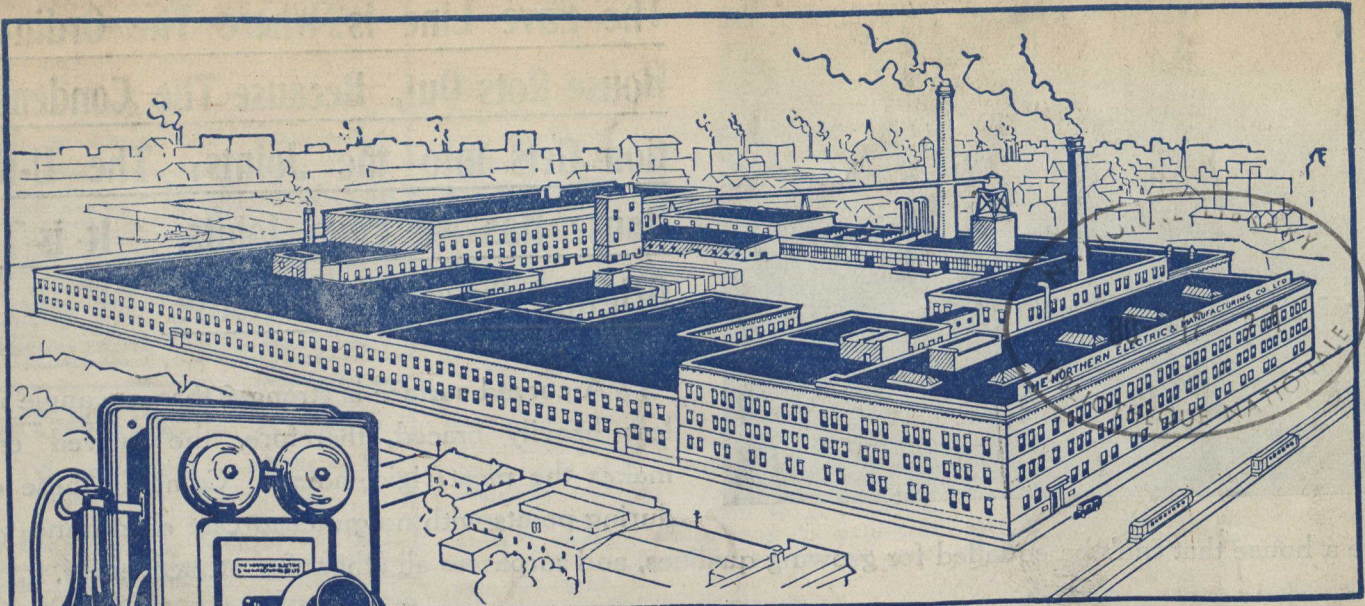
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