

Pages Missing

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Cooperation in Packing and Selling Fruit

Dr. H. Johnson, Grimsby, Ont.

GROWERS must accept the principle that they cannot be allowed to judge and grade their own fruit. Human nature is too frail, and the longest minded of us is sure to be somewhat biased in favor of his own productions, opinions, or possessions. Those who deem themselves above giving way to personal bias are referred to Herbert Spencer's "Study of Sociology," in which the learned author extends the theory that no one is capable of forming a fair and disinterested opinion on any subject whatever, so strong is the feeling of personal bias which creeps into all opinions, beliefs, sayings, and doings, no matter whether it is a business, social, political, theological question or what not.

This point requires particular emphasis as is evidenced by what happened years ago to a large organization in the Niagara peninsula. Some of the growers in this union had their fruit graded and packed at a central station. Others graded and packed for themselves. These latter, on their own statements, packed about ninety per cent. of their fruit and ten per cent. se-

conds. In the central packing house the grade ran about sixty per cent. number one and forty per cent. other qualities. But members who packed for themselves received the same price as those who had their packing done in the central station. Clearly this was very unfair; but apart from the unfairness it shows that it is impossible to guarantee the grade unless packing is done by those not interested in the sale of the fruit.

Large fruit may be attractive to the eye but it is not generally so well flavored or so succulent as a medium-sized specimen. Growers, therefore, should make a stand against the fetish worship of large-sized fruit. All fruit that is free from blemish and attains a certain size, not necessarily very large, should be classed as choice fruit.

A FAIR WAY

The fairest way of grading apples, and the same system would apply equally well to peaches, appears to be that practised by the Hood River Apple Growers' Union. The fruit is divided into two grades: Number one and number two (and culls). At Hood River they classify

the grades as "Choice" and "Fancy." This classification is independent of size and applies to color, shape, appearance, and freedom from disease or imperfections. Number one fruit is properly colored and entirely free from disease or blemish. Number two fruit may not be properly colored, and it may possess not more than two stings or blemishes. It must, of course, attain a certain size.

Both classes of fruit are then subdivided on the basis of size in the pack, according to the number of apples which will fill the box. Each box of every grade then contains a fixed number of apples of a uniform size and quality. The boxes are sold as three-tier, three and a half tier, four tier, and four and a half tier, and the number of apples inside is stamped on the box. Both the square and diagonal pack are used.

This system is fair to all parties from the grower down to the public who finally consume the fruit. It is particularly convenient to the retailer who may sell by the pound or by the piece, it enables him to choose a grade that exactly suits his customers and the nature of his trade.



"Barnes" Vineyard, one of the Famous Vineyards in the Niagara Fruit District

It would be difficult to find a system better suited on the whole to either the grower or the purchaser. These, after all, are the only people to be considered; as the merchants, commission people, and other intermediaries are quite capable of looking after themselves.

A uniform pack of both apples and peaches throughout Canada on such a basis would satisfy all parties and would give the grower—what he does not always get—a fair percentage of the price

paid by the public; while the latter when purchasing would know exactly what they were getting and would not be fleeced as they constantly are in the large cities, especially in Toronto. Further, cooperative unions should advertise the price of fruit and make it known to the public where fruit can be obtained at its proper price. Much of the jobbery in the commission trade could thus be obviated, and producers and consumers brought more closely together.

The Railroad Worm*

Arthur Gibson, Assistant Entomologist, C. E. F., Ottawa, Ont.

THE apple maggot or railroad worm is responsible for considerable damage in certain districts of Quebec province. Recently it has increased conspicuously and is now more numerous than ever. In many Ontario orchards also the insect has been particularly prevalent. Owners of orchards where this insect occurs should not allow it to increase.

The life history of the insect is briefly as follows: The adult flies emerge during the latter part of June and during the month of July. It has been stated recently by Illingworth that the eggs are about three weeks in developing within the body of the female flies. When depositing the eggs the female, by means of her sharp ovipositor, inserts them beneath the skin of the apple and the young larvæ hatch within a week, the exact time varying according to weather conditions. The maggots at once begin to feed upon the flesh of the apple, making winding burrows through the pulp until they reach full growth in from a month to six weeks. These burrows, or tunnels, soon become reddish or brownish in color and are easily seen when the fruit is cut. It is owing to this habit that the maggot is called the railroad worm.

The female flies are each capable of laying three hundred to four hundred eggs, and a single apple may contain several maggots, the work of which, of course, causes it to ripen prematurely and fall to the ground. The small white maggots are difficult to detect when young, but as they become mature and the tunnels larger they can readily be seen. When the injured apples fall to the ground, the maggots soon leave them and enter the earth to the depth of an inch or so, where they change into brown puparia and in this state they pass the winter, emerging as flies the following summer.

GATHER FALLEN FRUIT

It is of the utmost importance that all fallen apples be gathered as soon as possible after they leave the tree. This should be done every day, if possible, or at least every second day. In this way

the maggots will be secured before they leave the fruit. When the windfalls are gathered they should at once be got rid of in some way either by feeding them to stock or by burying them in a deep hole with not less than three feet of earth on the top.

In some orchards where the apple maggot is prevalent, pigs are allowed to run about from July when early apples which are especially susceptible to attack, begin to fall, until all the fruit is gathered. Cattle and sheep have also been allowed by some to pasture in the orchard when the fruit is falling, but there is an objection by many fruit growers to such animals, especially cattle, having the freedom of orchards. As the maggots work entirely within the apple, they cannot be reached by any of the poison spray mixtures which are used for insects which attack the foliage. Fortunately, the natural spread of the apple maggot is slow. The flies, when they emerge from the ground, do not apparently fly away to any distance, but remain in the immediate vicinity, and

the females deposit their eggs in the apples on the trees nearest to where they have emerged. Recent experiments in South Africa and Italy have shown that the adult fruit flies can be poisoned by spraying the trees with a sweetened arsenical.

The flies, which are rather smaller than the house fly, are readily seen on the trees. They have two wings, each of which is conspicuously crossed with four black bands, which together somewhat resemble the outline of a turkey. The body, which is black, is crossed with bands of white, and there is a white spot in the middle of the back. Careful watch should, therefore, be kept for the exact appearance of the flies, and when they are seen it would be well worth experimenting to destroy the adults. In South Africa and parts of Europe, as above mentioned, poisoned baits have been used successfully against closely allied flies. For instance a mixture of sugar three pounds, arsenate of lead four ounces, and water five gallons, has been applied to the trees so that the solution would be deposited in large drops. It was found that the flies were attracted to the sweetened mixture which they readily ate and, of course, were killed.

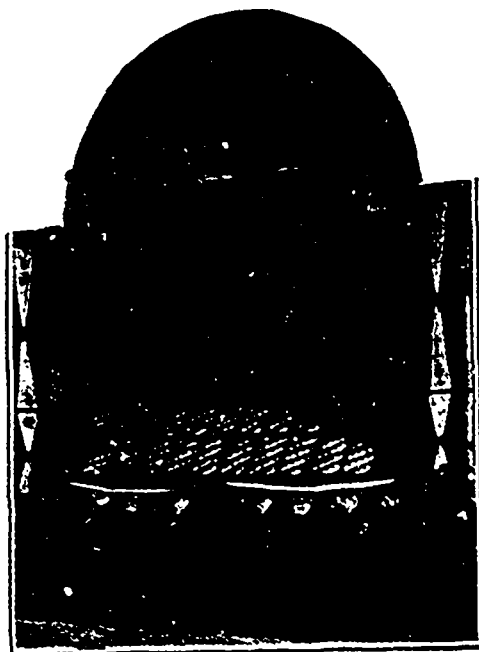
In New York State, Illingworth reports that experiments were first made with arsenate of lead sweetened with corn syrup. The flies, it is said, fed greedily upon it, but were slow in dying. A soluble poison bait was then prepared as follows, and it is reported that it proved to be effective:

Water, forty-five parts; corn syrup, four parts; potass. arsenate, one part.

"About a pint of this was sprayed on the lower branches of a twenty-year-old tree. The burning from the soluble arsenate was of little consequence, for so few leaves were sprayed and the destruction of the flies was apparently perfect, killing them in less than thirty minutes after the first sip."

In pruning I believe in regular annual pruning. In this way it is never necessary to cut off any very large limbs. In fact it should be called thinning out of the wood rather than a pruning. I have never done much thinning, just enough to make me believe in the system. With such varieties as Baldwins and Wealths it would pay to take off half the apples in order to make them bear annual crops. I intend experimenting thoroughly in this way this year by thinning out the apples on one side of the trees and leaving the other without thinning, and will note results.—W. H. Gibson, Newcastle, Ont.

Nitrogenous manures must be used with great care and their successful use depends on good judgment and the provision of a simultaneous supply of potash and phosphate.



Well Packed Quebec Province Apples

This excellent exhibit of apples was made at the Province of Quebec Exhibition by Rev. Father F. Leopold, of the Agricultural Institute at La Trappe, Quebec.

*Extract from a paper read before the Quebec Province Fruit Growers' Association.



Gathering the Apple Crop in the Orchard of Mr. Galbraith, Bayfield, Ont.

Commercial Fertilizers

Dr. J. B. Dandeno, Bowmanville, Ont.

THE use of commercial fertilizers has been one of the most baffling questions with which the farmer and fruit grower has had to contend. If the application of commercial fertilizers to the land had generally resulted in success, there need be very little said, because they have been in somewhat general use for a quarter of a century or more. It is easy to find farmers who are not loud in their praises of such fertilizers, and the reason is they have not always been a success. Millions of dollars are spent annually in the United States, and hundreds of thousands in Canada for commercial fertilizers, and it is safe to say that at least half of this large amount is wasted, not because the fertilizers have, or have not, certain elements in their composition, but because they are not always suitable to the land to which they have been applied.

There is generally an erroneous notion regarding infertile soil, exhausted soil, or over-cropped soil. The prevailing idea is that such soil is infertile because it lacks plant food (I have never met a man who could give a fair definition of "plant food") whatever that is. This is, in nearly all cases entirely wrong. Soil is infertile because of something it has, rather than because of something it lacks. Plant excretions are the chief cause of infertility, and it is the decomposition of such material and the application of fertilizers of any kind that are of value. Commercial fertilizers may remedy such conditions but, in the majority of cases, they do not, and cause a loss and waste of time.

To apply a commercial fertilizer with prospect of success at least, three things are necessary, First, a knowledge of the effect of the previous crop on the soil; secondly, a knowledge of the crop now to be grown and its relation to the excreta of the previous crop, and thirdly, a knowledge of the biology of the soil.

Up to the present these things are only very vaguely known, consequently the use of commercial fertilizers is more or less like the use of patent medicine. The defect is only occasionally remedied.

Moreover, many of the commercial fertilizers in the process of manufacture have been heated to a temperature so high as to be destructive of all bacterial life. Such are of very doubtful value. In the sale of and in the inspection of commercial fertilizers, the chemical composition is usually given, i.e., so much phosphoric acid, so much potash, and so much nitrogen, as if the value depended upon these things. The value depends chiefly upon whether the original bacterial life has been preserved, and whether the constituents of the fertilizer are favourable to the development of nitrifying bacteria of the soil, and to those organisms which prey upon plant excretions.

Certain fertilizers are adapted to certain crops and to certain soils, and the only way to find out which, is to try them by using them on part of the field so as to compare.

Another common error is that organic matter is taken in by the plant roots. As a matter of fact, roots absorb inorganic matter and water, but no organic

matter, excepting possibly in the rarest cases or under the most peculiar circumstances. There is no question as to the benefit to be derived from barnyard manure, and this is not because it contains "plant food" (for you could carry in your vest pocket all the "plant food" that a load of barnyard manure contains), but because it always supplies abundant favorable bacteria and abundant nutritive material for them. It has also a neutralizing effect on all plant excreta and it produces in the soil a good physical condition relative to the water supply.

No mistake is made in applying barnyard manure or other excreta, but in buying and using commercial fertilizers, "patent medicine chances" are taken.

Setting Trees *

P. E. Angle, Simcoe, Ont.

The problem to be solved when setting trees is to set the trees straight and in their exact position in the cheapest possible manner; and to do it in such a way that the men doing the work cannot go wrong.

There are several systems which may be followed. Among these are the following:

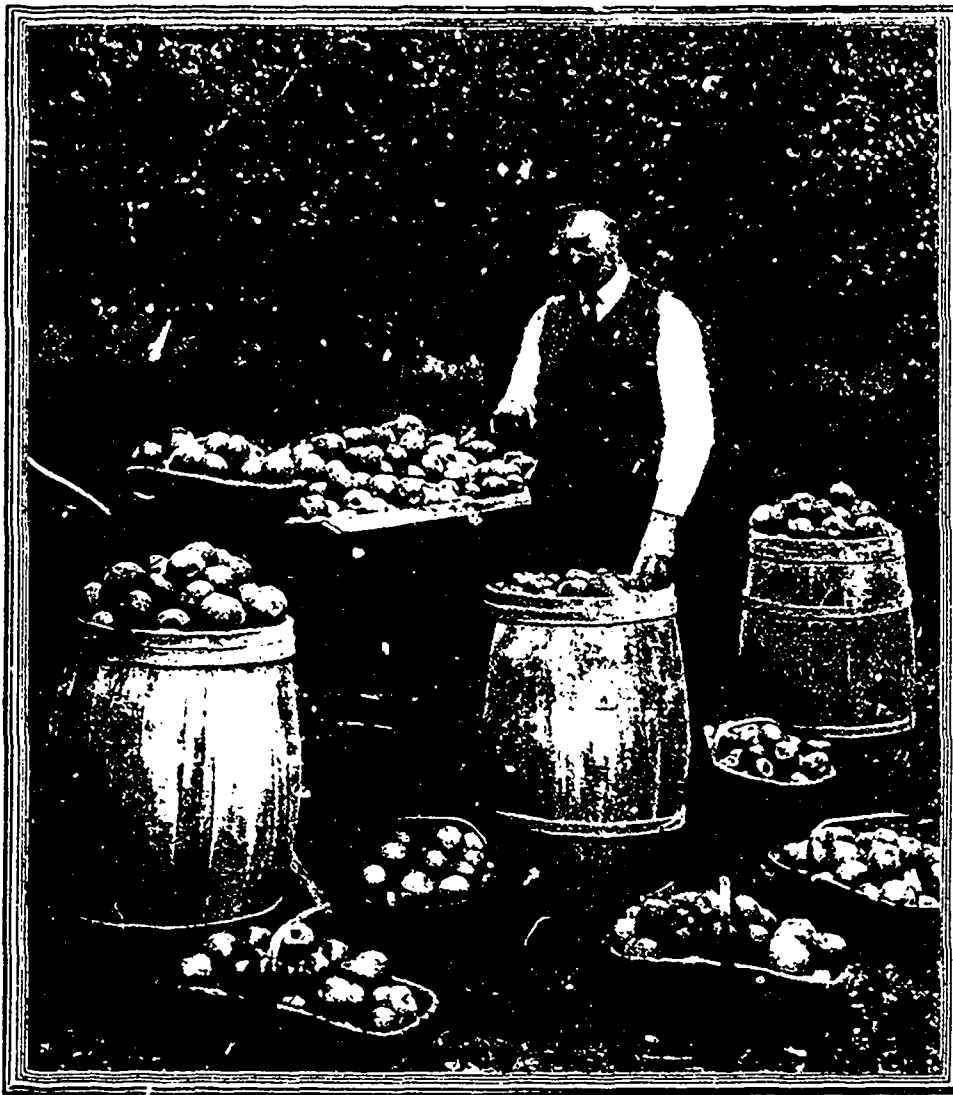
Mark out the field with a plow by plowing furrows both ways and planting the trees at the intersections. This is a good plan for one man to work, but where a number of men are depended upon there is enough chance for error that the trees in all probability will be very uneven in the rows, because there is a space about six inches square at each intersection in which the tree may be planted. It is also difficult to plow a perfectly straight line through the field. This system is not recommended on a large scale.

The stake system and planting board is another method. By a system of sighting and measuring, a stake is placed in the position that each tree will occupy, and the planting board is used in order to have the tree in the position occupied by the stake. The system is subject to inaccuracies owing to the placing and replacing of so many stakes, and also entails a good deal of extra labor.

The sighting system is one by which a row of stakes, properly measured, is placed around the field and two rows at right angles to each other across the field. The position of the tree is then obtained by sighting in line with two stakes on at least two sides of each tree; that is, the two lines will meet at right angles where the tree is to be planted. This is a difficult method to get absolutely correct, and may require extra men to sight if those doing the planting are incompetent.

In the wire system the wire should be

*Address delivered at Short Course in Fruit Growing, O. A. C., 1912.



Packing High Grade King Apples in the Orchard of R. R. Sloan, Porter's Hill, Huron Co., Ont.

unstretchable or as near as it is possible to obtain that quality. A woven wire, composed of several strands of seventeen to nineteen gauge steel wire is recommended. It is also easy to attach the marks to this wire. A wire five hundred feet long is used and is marked by attaching a small piece of copper wire through the strands to mark the location of the trees. The wire is first stretched parallel to the first fence and the stakes are placed along it where the outside row is to go. The same is done parallel to the fence at right angles to the first and so on around the field, providing the ends and side fences of the field are parallel to each other.

A row is then staked across the centre of the field in the same manner to act as checks to accuracy. We then have three rows of stakes across the field one way and two the other way. Now stretch the wire at right angles to the three rows of stakes and proceed to plant the trees at each mark on the wire. In order to make the wire taut and secure, an anchor stake is used at each end and a block and tackle at one end to stretch it. The work of planting may now proceed across

the field one row at a time, and each tree will come exactly in its place without any special effort of sighting by the planter. The wire should be remeasured after planting ten or twelve acres and any inaccuracies due to stretching corrected, which may be easily done with the movable marks.

Handling the Apple Crop

R. R. Sloan, Porter's Hill, Ont.

We use baskets for picking apples and find them more satisfactory than sacks, as the fruit is more subject to being bruised when sacks are used.

The fruit is packed in the orchard. It is brought from the trees and placed on a canvas bottomed sorting table and packed into barrels, which are drawn direct to the station. We have always plenty of fruit picked ahead and taken inside for wet days, so as to keep the men busy.

SELLING THE CROP

We have disposed of our fruit in different ways, often selling to a buyer, sometimes on the trees, but usually we prefer to pick our own fruit. We have

consigned some shipments direct to Old Country markets, have sold locally at our station and sometimes have shipped to the west. Having a large plantation we do not sell cooperatively, but it is the only way for the small grower to get the best returns for the crop.

So far, I have had the best results from selling my crop by the barrel in the orchard. The seller must be governed entirely by the condition of the market, and the man he sells to, or he may not realize as much for his crop as by shipping it himself direct to the west or to a foreign market. I intend in future years, as the plantation becomes older and bears more fruit, to pack and ship the fruit direct to (or as nearly as possible) the consumer, and thus eliminate some of the middlemen.

Notes by Fruit Growers

The apple is an asset financially, morally, and politically.

Prune out twigs on which are the eggs of plant lice, tent caterpillar, buffaloes laffer or other insects.

I am thinning out my apple trees from the top and leaving those limbs in the centre of the tree that are usually removed. I find that my trees are bearing a good crop throughout the tree and not on the outside, which is usually the case with apples.—J. O. Duke, Ruthven, Ont.

In pruning peach trees as well as in pruning any other fruit, it is necessary for best results that the operator have some knowledge of the variety, as some sorts require far more cutting than others. Such varieties as Barnard, Creeby, Golden Drop and others of similar habits require heavy pruning while those of the Crawford type require far less.—J. L. Hilborn, Leamington, Ont.

Greater skill in packing the fruit, and above all, more attention to the stowage of the packages in the cars, to secure rigidity during a long journey, and at the same time to allow for a free circulation of air among the packages, are just as important as cold storage or cooling facilities. Unless these things are carefully attended to, any expenditure for pre-cooling purposes will be very largely wasted.—J. A. Ruddick, Fruit and Cold Storage Commissioner, Ottawa, Ont.

I was the pioneer in the pure fruit business in Ontario. At the time I started the jam factories were making composite jams out of everything except pure fruit but since I have started making pure fruit jam other factories have been forced to follow my lead and use pure fruit. During the past season I have manufactured two million pounds of pure fruit jam, thus providing a steady market. I bought 15,000 cases of strawberries, 10,000 cases of raspberries, as well as similar amounts of other fruit.—E. D. Smith, Winona, Ont.

Winter Protection of Plants

John Gall, Ingleswood, Ont.

If the ground is not ready for planting in the fall, or if it is desired to delay until spring, trees or bushes may be heeled-in, this being done by laying the roots in a furrow or trench, and covering with well firmed earth. Straw or manure may be thrown over the earth to still further protect the roots, but if it is thrown over the tops mice may be attracted by it, and the trees be girdled. Tender trees or bushes may be lightly covered to the tops with earth. Plants should be heeled-in only in loose, warm, loamy or sandy soil, and in a well-drained place.

Fall-planted trees should generally be well mounded up. This hilling holds the tree in position, carries off the water, prevents too deep freezing, and holds the earth from heaving. The mound is taken away in the spring. It is sometimes advisable to mound up established trees in the fall, but on the well drained land the practice is not usually necessary. In hilling trees, pains should be taken not to leave deep holes from which the earth was dug, close to the tree, for water collects in them.

It is always advisable to mulch plants which are set in the fall. Any loose and dry material, such as straw, manure, leaves, leaf-mould, litter from yards, and stables or pine boughs, may be used for this purpose. Very strong or compact manures, as that in which there is little straw or litter, should be avoided. The ground may be covered to a depth of five or six inches, or even a foot or more if the material is loose. Avoid throwing strong manure directly upon the crown of the plants, for the materials which leach from the manure sometimes injure the crown buds and the roots.

PROTECT ESTABLISHED PLANTS

This protection may also be given to established plants, particularly to those which, like roses and herbaceous plants, are expected to give a profusion of bloom the following year. This mulch affords not only winter protection, but is an efficient means of fertilizing the land. A large part of the plant-food materials have leached out of the mulch by spring, and have become incorporated in the soil, where the plants make ready use of them. Mulches also serve a most useful purpose in preventing the ground from becoming packed and baked from the weight of snows and rains, and the cementing action of too much water in the surface soil. In the spring, the coarser parts of the mulch may be removed and the finer parts spaded or hoed into the ground.

Tender bushes and small trees may be wrapped up with straw, hay, burlap, or pieces of matting or carpet. Even rather large trees like bearing peach trees,

are often baled up in this manner, or sometimes with corn fodder, although the results in the protection of fruit buds are not very satisfactory.

It is of the utmost importance that no grain be left in the material used for baling, else mice will certainly be attracted to it. It should be known, too, that the object in tying up or baling plants is not so much to protect from direct cold, as to mitigate the effects of alternate freezing and thawing, and to protect from winter winds.

Plants may be wrapped so thick and tight as to injure them. Be sure that no water stands about the roots of tender trees, and cover the surrounding ground with a heavy mulch of leaves or straw. The labor of protecting large plants is often great and the results uncertain, and in most cases it is a question if more satisfaction could not be obtained by growing only hardy trees and shrubs.

SMALLER BUSHES

The objection to covering tender woody plants cannot be urged with equal force against tender or very low bushes, for these are protected with ease. Even the ordinary mulch may afford sufficient protection; and if the tops kill back, the plant quickly renews itself from the base, and in many plants—as in the hybrid perpetual roses—the best bloom is upon these new growths of the season.

Old boxes or barrels may be used to protect tender low plants. The box is filled with leaves or dry straw, and either left open on top or covered with boards, boughs or even with burlap. With woody plants these are generally laid

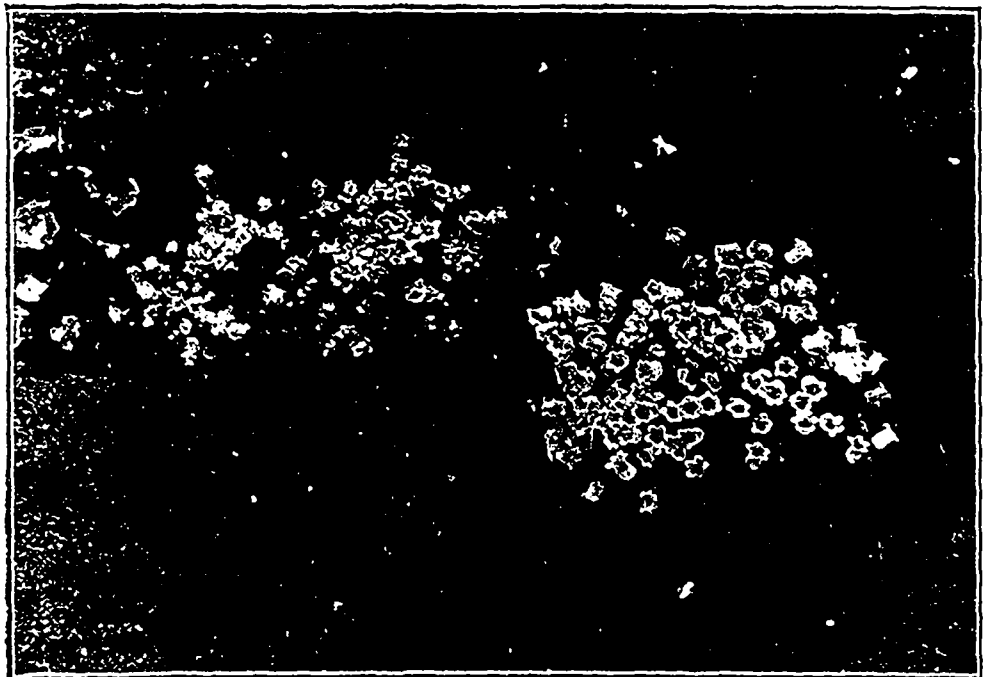
down, but the main difficulty lies in getting them down to the ground.

Blackberries, raspberries, and so forth, which are intended for mulching, should be pruned in the fall so that no more wood than is really necessary need be covered. Then by digging away from one side of each plant with a spade and pressing down from the opposite side, the plants may be bent over without great difficulty. Plants laid down in the same direction each year are quite readily handled. If all the plants in a row are bent in one direction and made to lap over each other, less material will be required to cover them.

Other methods than those mentioned for winter protection of plants are frequently employed, but the foregoing are some of the common and most simple. A little time spent in preparing our plants for the winter may prevent considerable loss and disappointment.

Mulching Bulbs.—It is of advantage to mulch the bulb bed before the heavy frosts of winter set in, especially if the planting has been late, or tender bulbs have been planted. For this purpose fallen leaves answer well and are easily procured, over which a few evergreen boughs or heavy stalks should be spread to prevent their being blown about. The mulching should be removed early in the spring, or the bulbs will grow up into it, and be injured.—Rev. Jos. Fletcher, Millbrook, Ont.

Perennials are the backbone of the gardens in the Northwest and essential to them.



Canterbury Bells as Grown in the Garden of Mrs John Mero, Tillsonburg, Ont.

Protecting Roses

W. G. Mackendrick, Toronto, Ont.

It is a poor year that I do not dig up some new experience in rose growing. For five years I have been very successful with wintering climbing roses by just tying them together in a bundle against the wires of the fence and putting some bulrushes or straw over them to protect them from the sun, and I have been guilty of saying that this was sufficient covering for the Wichuriana type for this locality.

However, last winter we experienced very severe and prolonged cold, the thermometer dropping as low as twenty-eight degrees below zero, with the result that of the sixty odd climbers which I had been experimenting with none of the Wichuriana came through without being killed to within a foot or two of the ground. Only three climbing roses were hardy enough to maintain their eight or ten feet of height without killing back.

In previous years we had touches of ten below zero and the method I adopted of hilling up the earth around the neck of the rose and then tying the branches together and covering them with straw to keep the sun off them had been quite sufficient. Some of my neighbors who had Crimson Rambler climbers that had been exposed to the weather for ten years, and had wintered all right, last winter had them winter killed to within a few inches off the ground. The rose expert at the Guelph Agricultural College, Mr. Wm. Hunt, has had good success by laying the climbers on the ground and covering them with soil or a good heavy mulch of strawy manure.

I noticed last spring that a few of the branches that had fallen on the ground and were protected by the snow, came through all right at my place, so I think that one can do no better than to follow the example of the Guelph Agricultural College. The manure or litter should not be tightly packed as the average rose will stand cold down to at least zero.

Hemlock boughs will not do for a



The Foxglove—"Digitalis Purpurea"

climber that runs away below zero. If you cannot cover the plants with earth the only thing left is strawy manure or dry leaves. Lay the plants down on the ground and place the straw or leaves around them so that the plant will get some ventilation but still be kept warm enough not to winter-kill badly.

I do not notice any difference in results between the roses I get from England and Ireland. They both seem to be grafted on the same stock and give about the same results.

Whether or not local roses are as good as those from England and Ireland, I cannot say. I purchased my roses in Ireland because they cost me about half what they would cost me if purchased in the United States, but the large bulk of the roses that are sold in the United States which are grafted, are imported from Europe.

Do not over-water geraniums or they will become soft. Let them dry out well between waterings.



The Ever Popular Geranium Blooming in an Office Window

-Photo by F. T. Shutt, Ottawa.

Potting Bulbs for Winter Flowering

Wm. Hunt, O.A.C., Guelph, Ont.

The best time to pot bulbs for winter flowering indoors is during October, although they may be potted later. All the trumpet varieties of Narcissi, as well as the double flowering kinds, are suitable for pot culture. Two or three bulbs of these can be put into a five inch pot. Tulips are not usually satisfactory for indoor culture. Varieties best suited for pot culture are La Reine, white; Mont-Tresor, yellow; Couleur Cardinal, cardinal; Pottebaker, white; Chrysolora, yellow; Prince of Austria, orange red; Pottebaker, scarlet; Vesuvius, fiery red. These are all single varieties. A few good double varieties of tulips are Couronne d'Or, yellow; Murillo, pink; Rex ruborum, red; Tournesol, yellow. Five or six tulip bulbs can be put in a five inch pot.

Roman Hyacinths can be potted three bulbs in a five inch pot. The white flowering kind are the best of these, and can be had in flower by Christmas.

DUTCH HYACINTHS

The single flowering kinds of Dutch hyacinths are best for pot culture. Good quality bulbs give best results. Put one bulb of these in the centre of a four or five inch pot. A greater number of bulbs can be grown in larger pots or boxes if desired. Crocus, Scilla, Snowdrops and Chionodoxa do not give as good results for pot culture as those mentioned.

HOW TO POT

Pot bulbs in good potting soils. The top or apex of the bulb should be just below the surface of the soil when potted. Water them well and stand the pots away in a cool dark place, cellar preferred. Leave them there until a good root system has developed, which will usually be in four or five weeks, when they can be brought into the window to flower. If the pots are buried in moist sand or soil in the cellar they will root better than if left uncovered. Keep the soil moist after potting. The soil that bulbs are growing in should never become dry after potting, until they are through flowering.

Place one bulb of a Chinese saucer in a large deep saucer or dish. Fill the saucer with small gravel stones so as to keep the bulb in an upright position. Fill the saucer now with water and set it away in a dark cupboard or cellar for about three weeks, until a good root system has developed, then bring it out into the window to flower. Keep the saucer filled with water as required.

To grow Dutch hyacinths in glasses set the bulb in a proper hyacinth glass. Fill with water so as to barely touch the base of the bulb. Place it away in a cool place for four or five weeks, until the roots touch the bottom of the glass and then bring into the window.

Canadian Gardens--The Garden of a Workingman

George W. Tebbs, Hespeler, Ont.

In a German county it is only natural to expect beautiful gardens. The thrifty, careful Teuton has received from his forebears a great heritage in his love of the beautiful, and in his habits of tidiness and orderliness. Hence it was no easy task to select a garden to illustrate in this series of articles from amongst the many well kept gardens in this little thriving town, where there are

his Nicotina. He makes really good use of it, keeping it for spraying purposes, and using it also as a preventative of insect life in the nests of his poultry.

Mr. Birken has had marked success with his tomato plants. The way in which he grows tomatoes is as follows: He raises his own plants from seed, usually of the Plentiful or Earliana Varieties. He pricks them off into flower pots

and very clean. He has a particularly fine crop of Irish Cobbler potatoes which are growing on the sod of an old poultry run. There is practically not a weed of any size anywhere in his garden, and the arrangement of his plots cannot well be improved upon.

Great credit is surely due to men who under such difficult circumstances produce such fine work; who after a hard day's work in the mill, find time not only to beautify and enhance their own surroundings, but take pleasure in so doing and thereby give an incentive to the neighbors around them to go and do likewise, thus affording the cause of horticulture a real and valuable service.

Fall Planting Recommended

J. McPherson Ross, Toronto, Ont.

In the fall all that is necessary is to shorten the rose tops, say about one-third of the growth, when planting. Deep planting is still necessary. The tops assist in holding the mulching of strawy manure which must be provided, and also allow air to circulate. The stems are also sure to be killed back an inch or so by winter, and this dead wood when removed in the spring makes the plant properly shortened.

WINTER PROTECTION

All shrubs do better when planted in the fall than in the spring. The fall also is just the season for hardy perennials. In small fruits of all kinds, including strawberries, currants, gooseberries, and raspberries, you will have quite a yield in fruit next summer by planting in the fall. This is not the case with spring planting. Thus you gain a season by fall planting.



Mr. Birken in His Garden. Some of the Fruit Trees May be Seen

so many connected with the "Faderland." One well kept, typical garden, however, has been selected. It is that of Mr. E. J. Birken, the secretary of the Hespeler Horticultural Society, a position that he has held for the past three years, previous to which he was one of the directors.

Mr. Birken holds a position in the millen mills of the town and works ten hours each day. His gardening, therefore, has to be done either early in the morning, or late in the evening. Only a real devotee of gardening, therefore, can produce such an excellent example as is shown in our illustrations.

Nine years ago when Mr. Birken purchased his home, the garden was a bare, vacant lot. His fruit trees, now in full bearing, were all planted by himself, and the garden has been gradually brought to its present pleasing appearance by his untiring labors since that time.

HAS WON PRIZES

Three years ago the Hespeler Society instituted prize awards for the best kept gardens and for cleanliness, variety and quality of vegetables and fruits, Mr. Birken was well up in the awards made by the judges. In the garden he has almost everything from tobacco to cabbage. He is justly proud this year of

as soon as they are large enough, and places them in a cold frame. He never transfers them to the garden until about the fifteenth of June. In the garden there are all kinds of fruits. Mr. Birken is a great believer in spraying, and his trees are very clean and healthy. His cherry trees are full of fruit of excellent quality,



Where the Vegetables Grow. Another View in Mr. Birken's Garden

Orchid Growing for Amateurs*

J. A. Ellis, M.L.A., Ottawa, Ont.

NEXT to their beauty the strongest recommendation for orchids is that they remain such a long time in bloom. The blooms of those shortest-lived will last two weeks, and the flowers of the longer-lived ones are good for six weeks to two months. When we consider the comparatively short lives of nearly all other flowers this appears amazing. It will readily be seen that

ties were best for the amateur. I have in my time had many kinds; and as the result of some years' experience, can recommend those hereafter mentioned to the beginner. I have not space to describe these anything but shortly.

Cattleya labiata, *C. Trianae*, *C. Schroderae*. The *Cattleyas* are the finest of all orchids. They are those large beautiful pink and rose colored blooms which the florists sell. They grow two or three flowers on a stem. *Cattleya labiata* has a tendency to die out after a few years. There are many other varieties of *Cattleyas* worth growing, but the above are the best winter blooming varieties. There are a great number of hybrid *Cattleyas*, which are also very beautiful. *Cattleyas* will not bloom well unless grown near the glass.

Cattleya Citrina is an odd plant. It is grown on a board or a piece of bark, with moss around the roots. The bulbs and leaves will always grow downwards, no matter in what position it is placed.

Odontoglossum grande. This is a magnificent large chocolate colored flower with yellow stripes, growing five or so flowers on a spike.

O. Crispum and *O. Halli* are good. The *Odontoglossums*, however, find our summer a little too hot for them, and do not thrive quite as well as they do in England.

The *Oncidium*s suit the Canadian climate first-rate. *Oncidium varicosum Rogersii* is, perhaps, the best.

It gives trusses of pure yellow flowers, with one hundred to two hundred flowers on each truss. Other good *Oncidium*s are: *Forbesi*, *Tigrinum*, *Marshallianum*, *Crispum*, *Ornithorynchium*, *Concolor*, *Gravesianum*, *Sarcodes*. There are many others as good or nearly so.

The *Cypripedium*s (or Lady Slippers) are best grown on the bench. *C. Insigne* is the easiest to grow, as this class of orchid has perhaps been more hybridized than any other. There are thousands of varieties of *Cypripedium*s, and a large number which the amateur can readily grow in a greenhouse such as I have mentioned. The flowers remain in bloom from six to eight weeks. Altogether I consider the *Cattleyas* and the *Cypripedium*s the best orchids.

The *Laelias* are all easy to grow. *L. Anceps* and *L. Autumnalis* especially. *L. praestans* is also worth growing.

Vanda coerulea simply revels in the air possible. It is a tall stem with short leaves growing from each side. The flower spike comes from the axis of a leaf. It has beautiful blue flowers, five or six on a spike, and blooms in summer.

Lycaste Skinneri can be readily grown, and it gives very beautiful large rose-colored flowers.

Laelio-Cattleyas are, of course, hybrids. The flowers are most exquisite, and are not hard to grow.

Denrobium Nobile is worth growing, and so is *D. thyrsoflorum*. The flowers of the latter are white and yellow, and grow in bunches like grapes. *D. Waddianum* is also good, but dies out in two or three years.

The amateur will make no mistake in cultivating any of the foregoing varieties.

A good half-dozen orchids for the amateur are: *Cattleya Trianae*, *Cattleya Schroderae*, *Oncidium varicosum Rogersii*, *Odontoglossum grande*, *Laelia Anceps*, *Cypripedium insigne*.

Another good six are: *Cypripedium r. tens*, *Laelia autumnalis*, *Oncidium Forbesi*, *Vanda coerulea*, *Lycaste Skinneri*, *Laelia praestans*.

No doubt this list can be greatly improved upon. It is simply a short list of those orchids which, from my own experience, can be easily grown, and which should prove satisfactory.

I do not pretend, however, to have even begun to exhaust the list of those which an amateur can grow successfully. I have only mentioned those which I have grown myself without any great difficulty. The list is somewhat restricted, too, because I have included principally those which bloom in winter only.

It is, of course, impossible in a short article such as this to do more than touch the fringe of orchid growing, and to mention many lovely varieties of orchids. I have tried merely to show that this is a field into which the amateur need not be afraid to venture, and that many of the popular impressions about the difficulty and expense of orchid growing are fallacies. Those who venture into the field will, I am satisfied, little wonder why it is that they did not get into it before. The wonderfully beautiful flowers which can be grown by the amateur makes it a most alluring field to enter upon.

Lovely flowers are the smiles of God's goodness.—Wilberforce.

Some liquid fertilizer should be given to geraniums during the winter. "Bonnet" is the best prepared fertilizer for winter plants that I know of. It can be purchased with full directions at seed stores.—Wm. Hunt, O.A.C., Guelph, Ont.



A five-year-old Cherry Tree in Mr. Birken's Garden

See article on page 259

with a careful selection of plants it is quite easy to have lots of bloom all through the dull winter months.

Very few people in Canada grow orchids. This can only be because few have tried to grow them. As I have pointed out, they are not expensive, are easy to grow, and give blooms which are unsurpassable. I doubt if anyone who has grown them will ever discontinue doing so. I have gradually discarded my other greenhouse plants, until now I have scarcely any but orchids.

Perhaps because these plants are not extensively grown in Canada I had to find out largely for myself what varie-

*The concluding portion of an article, the first part of which appeared in the February, 1912, issue of *The Canadian Horticulturist*.

My Favorite Flower and How I Grow It*

Gladys Muir, St. Catharines, Ont.

NOVEMBER winds shrieked wildly at us, vainly trying to dissuade us from our purpose as we walked down the garden path. All in vain, however, for we continued our way to the goal in mind—a plot of ground which is exposed in mornings to the sunlight on the hillside. Here we thrust our fingers deeply into the light, worked-up soil and brought forth a handful of earth which we, looking like grave scientists, examined with critical eyes. Ah, yes, we had put in sufficient fertilizer, which in this case consisted of buried refuse of bonfires and wood ashes.

The loose soil was in ideal condition for planting, so we lifted from the depths of a large basket some two hundred curious round objects looking as if they were wrapped in white paper. What ugly things they were! "Bulbs," one called them. Better to have named them mummies, and this their burial service. For what is what we proceeded to do—bury them at a depth of four inches, and at intervals of six inches apart in holes we made with a light spade. We then packed the ground down flatly on top and over all placed a protection of leaves from the maple trees, dedicating the whole with a liberal sprinkling of wood ashes. "Dust to dust, earth to earth. Ashes to ashes!"

Our task was over. Pausing at the home door, we glanced backward with satisfaction. How comforting the thought that yonder slept "not empty shells with the spirit flown,"—ah, no, in each was a life which waited only weary weeks for the magic wand of spring to set it free.

SPRING'S REWARDS

After months of rain and snow and bitter cold, April smiled. Then came the resurrection; peeping through the mulch of decayed leaves, the tender shoots of green appeared. Carefully we loosened the leaves around each to give them more freedom in growth. From now on the plants made pleasing progress, the result of the ash-fertilizer, which is par excellence as a promoter of rapid growth. Seldom indeed was the sprinkler brought into use, as the mulch of leaf-mold retained sufficient moisture.

At last came the reward of patience. Odd-shaped buds, topping graceful stalks, opened into pure white glories—and can one ever forget the wonderful essence which issued therefrom? Behold the lilies! Not even Solomon in all his glory was ever arrayed as one of these. My favorite garden flower! Symbol of purity the world over.

Independent, the lily requires practically no care, which is an ideal commendation to the lazy or indifferent novice. No spraying and trimming and weekly aphid hunts. The lily is above requiring such lowly aid. Her's is a brief but glorious reign. What millions pay her variations tribute in every land! Far better to hold a few weeks dazzling court than a whole season's intermittent court, as does her rival, the rose.

The lily! How the sight of her gladdens the hearts of our friends, both ailing and aged! Useful alike in decorating the bride entering upon life's threshold, and in consecrating the departure of the One whom the Angel of Death has blessed—a fitting tribute of God's treasury on all occasions is this flower.

And when the long autumn days shall come, and she withdraws with no assistance within the shelter of Mother Earth again, awaiting a coverlet of snow, how supreme in the hearts of all her lovers is the fair, white memory which blossoms as the years go by into increasing remembrances, for the lily cannot die.

The sweet pea of to-day is one of the most popular hardy flowers in cultivation, and is held in such high appreciation that it ranks quite on an equality with the rose and carnation in the esteem of many.

Planning for Future Flowers

J. McPherson Ross, Toronto, Ont.

The difficulty in wintering biennial plants, such as hollyhocks and foxglove, with heavy foliage, deters some growers who have failed to winter them successfully. It is not so much the severe frost that does the harm as the alternate freezing and thawing, and the object is to keep them covered from the sun and at the same time to give air. Strong brush, such as old prunings or pine branches, are useful. Anything that will hold the leaves or dry litter and the snow, besides giving air, will winter these plants successfully.

A practical method and a sure one of wintering these flowers is to put stout pegs at the corners of the bed and on these stretch a layer of wire netting. Wire used for poultry netting is suitable. Place it the whole length, and have the netting raised above the plants at least a couple of inches. On the wire place a layer of leaves, then double your wire back again to hold the leaves in place. Thus you provide simply a mattress of leaves, a sure, safe and dry covering from wind and sun, and allow the air to reach the plants and foliage, which otherwise would rot and die, or heave out.

If apples are stored in the cellar, it should be kept very cool or the fruit will not keep as well. Just above the freezing point is about right for keeping apples.



A Garden in Northern Ontario Which Shows What the North Can Do

S.T.

The sweet peas here shown were grown in the garden of J. Lorne McDougall, Halleybury, Ont. They were seven feet high and loaded with a crop of long, well filled pods that contained nine to eleven peas each. The variety is the Alderman. This seed was sown June 3rd and the photograph was taken August 12th. The only fertilizer used was a little Muriale of Potash.

*One of the competing essays on this subject in the contest for prizes offered jointly by Messrs. Hermann Simmers, Toronto, and R. B. Paré, Ottawa.

Grading and Labelling Vegetables

Paul Work, Cornell University, Ithaca, N. Y.

HAVING made the goods right by good grading, you must make them appear right by good packing. It does not take any longer to lay a specimen properly in place than it takes to lay it out of place. Experience makes experts at this, and a well finished pack costs hardly a shadow more than one which shows a rough and uneven surface. You are doubtless interested in the cost of some of these things. For three summers I worked on a vegetable farm where a packing system had been established, making use of the Diamond market basket. Picking in the field cost a cent a basket, piecework. Grading and packing likewise cost a cent. Perhaps a half cent should be added for extra handling, making the cost from the field to the market wagon two and one-half cents a basket. During the worst glut that this market ever knew, an increase of one and one-half cents a basket was realized over the prices received by neighbors whose handling cost was as heavy or heavier. Moreover, my employer was moving five hundred baskets a day when others could hardly move any.

LABEL YOUR GOODS

Nothing adds more to the appearance of your goods than attractive and forceful labelling. I can best illustrate by example. Mr. Green Grocer 'phones to his commission house for a hamper of lettuce. It comes and it proves to be good. The packer had had good lettuce, and he has been careful, though he makes but one grade of his crop. Mr. Grocer wants more. Again he 'phones, and gets a hamper. This one looks just like the other, bearing on the top merely the address of the commission man and a number for identification. But this time he receives the produce of another grower who makes three grades. This basket contains the third. Next day Mr. Grocer goes down town, calls on his dealer, and sees the first grade from this grower, packed in a box, and well labelled. He sees his error and thenceforward orders the distinctive mark at an advance in price. This happens repeatedly with other grocers and growers. The poor lettuce has spoiled the trade in unmarked stuff, and all such passes for culls, or nearly so. The man with the label reaps the profit. What, then, is the use in doing the thing right if we do not bring the credit and the future sales and the future profit to the proper place?

BENEFITS OF LABELLING

California asparagus growers are successful in this. Their beautiful bunches are enclosed in attractive lithographed wrappers, and they held the market in our town last spring as well as in many

others, though the price was high. Another plan has brought splendid returns to a New Jersey grower. He knows how to judge a watermelon, and takes advantage of that knowledge. Every melon bears a paster, printed in red, about an inch and a half by two and a half inches in size, bearing a guarantee of the quality. Just another example. A western New York lettuce grower declares on his label that it is his aim to pack nothing but perfect produce under that mark, and he asks the purchaser to report any imperfection to him. If such a label will not inspire confidence, nothing else will, and the people that buy vegetables are very different from those who buy other things. As I waited for a train at a small station last summer, I saw a neatly lettered crate of celery. The grower's name was there. I did not know the grower, but I sent for a package of his product for use in an exhibition of marketing methods. I was not disappointed. His name gave me the confidence of which I have just spoken, because not many care to use their name in connection with low quality. This mark, I have since learned, is proving a great success in connection with a high-class order trade.

Thus we see that growers are learning the advantage of special marks and labels, but the process is slow. The shippers are in the lead. Many a box of high quality produce bears the name of the dealer, not the grower. The reputation is going to the wrong men.

When taking up celery plants in the fall leave the roots on and cut off a few of the loose outside stocks and any that may have got bruised or broken.—J. C. Black, Truro, N.S.

Mushroom Culture

Will you please give me information regarding the raising of mushrooms for the winter in the cellar.—Mrs. H. M'C.

Mushrooms will grow anywhere when given the proper materials. Dark, dry cellars not being used for anything else are ideal places, as are spaces under sheds, or the prepared manure may be packed in boxes any size, so long as they are deep enough to hold eight or nine inches of manure. Old bureau drawers serve capitally for this purpose—in fact there is no limit to their cultivation in places that may be convenient or that genuinity can suggest.

To have certain success, procure, if possible, the daily manure and sweepings from the stable, whatever quantity is possible, forking out the long straw, if any, and add a third of good garden soil to the manure, mixing it thoroughly, turning daily to prevent it heating too much, adding to the pile fresh manure and soil as you procure them till you have sufficient to make a bed four or five feet in width as long as you have space for it and when packed down to be not less than eight inches in depth.

MAKING THE BED

After the first rank heat has escaped, make the bed by placing the manure in layers, pounding it firmly. Pound it as you would pound the soil in setting posts; the more compact your bed is the longer it retains the heat, and the spore travels quicker through it.

In locating your bed, do not put it on a cold floor or where any water would be apt to raise and be absorbed by the bed. In such a possibility raise your bed four or five inches, and if made against a damp, cold wall, run some boards between.

When your bed is made put a thermometer in it and observe the temperature, which will raise to a greater or lesser degree; but when you notice it going down and about ninety degrees



Harvesting Onions in the Grand Valley Gardens, Moose Jaw, Sask. The onions here shown yielded 300 bushels to the acre, and sold for \$1.50 to \$2.00 a bushel. No fertilizer was used. The grower was Mr. Jas. Skator.



A Prize-winning Collection of Squash and Pumpkins

The vegetables here shown, some of which weighed over 100 pounds each, were grown by Jos. McClelland, Brookholm, Ont. They won numerous first prizes at the county show in Owon Sound in 1911.

place your spawn in it by making holes four inches deep, fifteen inches apart, and place the broken spawn in small pieces in the holes, covering the same.

THE TOP COVERING

A particular point in after-success is to wait after spawning for a week or ten days before you put the top covering of soil. Many growers are so impatient that they put the soil on too soon, the heating or fermentation going on in the new bed causes moisture or hot steam, and this must be allowed to escape, so that if the soil is put on before this occurred it would be retained in the bed and kill the spawn. This is the actual cause for the failure in nine out of ten cases in attempts to grow mushrooms and too much stress cannot be laid on these two points in growing them: The first, being careful not to spawn the bed until the heat is receding and is about ninety degrees or eighty-five degrees, and the se-

cond, not to cover with the top two inches of soil till eight or nine days have passed after spawning.

Then putting on the top two inches of soil, put it down firmly and smoothly, and then place a layer of straw over your bed; though not actually necessary, it aids to keep the soil surface moist and prevents the air drying up the bed too quickly, and keeps a still temperature. The temperature to grow mushrooms should be fifty-eight and one-half degrees, and should not vary, but anywhere between fifty to sixty degrees will answer. I have succeeded in varying temperatures, but that is the proper, fifty-eight and one-half degrees; and that is why underground tunnels, sewers, or caves are utilized because the temperature can be kept so even. Following out the foregoing instructions, you should have plenty of mushrooms.—J. McP., Ross, Toronto, Ont.

Vegetables Under Glass

John Gall, Inglewood, Ont.

WHOEVER wishes to have success in beginning the forcing of vegetables under glass must have a care for the work and watch the developments so as to know when and how to feed them. Experience has taught us that some soils will take much more food than others. I claim there can be no hard and fast rules laid down in regard to how much fertilizer a certain crop shall be given for best results. My theory is that each grower in different localities, and different soils, by studying the condition of his growing crops, is the best judge as to how much food will be of benefit. I have little doubt there are various opinions on this one important question—seedling; but the grower who carries his own road, using his own discretion, will in most cases be the most successful. We know that to produce

good crops potash, phosphoric acid, and nitrogen are a necessity. These should be applied to the soil in some form or another. Whoever has given this question study and deep thought will stand by his own good judgment. Self-taught experience is seldom forgotten.

TOMATOES

As a spring crop, tomatoes are becoming more and more popular with vegetable growers. The first ripe fruit is usually placed on the market about the end of May, when a high price can be procured. Good tomatoes can be had either in solid beds or raised benches, but I consider raised benches are decidedly to be preferred. The proper time to sow seed depends greatly upon the conditions that can be furnished for the growth of the plants. Tomatoes require a fairly high temperature, but if grown with the

lettuce crop it will be necessary to sow seed early, about the beginning of December. The general practice followed in growing the plants is to sow the seed in flats and cover thinly with sand, then place a sheet of paper over the flat to retain the moisture. As soon as the seedlings become large enough to handle they should be transplanted into flats, keeping them about three inches apart each way, then again transplanted when they begin to show signs of crowding, and this time—to be economical—into quart berry boxes.

When large enough to plant into the permanent bed it is not necessary to remove the boxes, the roots readily find their way into the outside soil, and it is a much cheaper way than by growing in pots. Five or six inches of soil is sufficient to mature a heavy crop of fruit. Give air every available chance, never allowing the foliage to get soft and flabby, then there will be little trouble with mildew and kindred diseases.

LETTUCE

The demand for lettuce is ever on the increase. It is one of the main winter crops. Both for private and commercial purposes, monstrous houses have been erected for this industry within the past few years which probably before would have been thought utter madness. This crop is very often grown on raised benches, it being thought of much benefit having the plants near the glass, but this is a mistaken idea for a cool-blooded vegetable such as this. In the first place it is too hot for the roots; and second, the plants require too much water on the benches.

One great advantage in solid beds is the crops do not require water very often. In fact, if the surface soil can be kept on the dry side, provided there is plenty of moisture below, the roots will then have a tendency to work down giving the plants health and vigor, which is of the greatest importance for good results, but a thorough good watering when the plants become large will increase the size to a great extent. Airing plays an important part as regards success or failure with this ever popular vegetable.

RADISHES

Radishes are easily produced under glass. It has been stated that a crop of radishes may be taken from among other growing crops, but I consider that one crop is sufficient even if grown under glass. While radishes are of easy culture, it is true—I think I am safe in stating—that many of the radish crops have been destroyed by the erroneous impression that this vegetable needs little or no attention. If left in the bed too long they get soft and pithy, practically useless at that stage. The very best seed procurable should be used for this purpose. Radishes can be grown with every success in the lettuce house temperature.

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OFFICIAL ORGAN OF THE ONTARIO, QUEBEC, NEW BRUNSWICK AND PRINCE EDWARD ISLAND FRUIT GROWERS' ASSOCIATIONS

H. BRONSON COWAN, Managing Director

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We want the readers of The Canadian Horticulturist to feel that they can deal with our advertisers with our assurance of the advertiser's 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." Complain should be made to us as soon as possible after reason for dissatisfaction has been found.

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EDITORIAL

SAN JOSE SCALE IN NOVA SCOTIA

The discovery in a small way of San Jose Scale in Nova Scotia has placed the fruit growers and Government officials of that province in a difficult position. The recent advent of the Brown Tail Moth, with the heavy expense that has been involved by the fight to secure its control, has revealed to the people of Nova Scotia the importance of adopting extreme measures where necessary to prevent the further spread of such pests and if possible to secure their eradication. It is gratifying to note that the fruit growers of Nova Scotia are awake to the seriousness of the situation, and that they are prepared to deal with it in a thorough manner.

Fortunately, owing to the severe climate of Nova Scotia, the San Jose Scale is not likely to prove as disastrous in that province as it otherwise might. When San Jose Scale first appeared in Ontario some fifteen years ago it caused a panic. Many alarming predictions were made. Few of these have come true. It is now known that the scale can be controlled by thorough spraying, and except in the tender fruit districts it has made little or no headway. Even in the tender fruit areas its spread might have been prevented had the Provincial Government dealt with the situation at the outset with courage. It should have appointed provincial inspectors and given them power to destroy infested trees. Instead, it made the mistake of leaving the enforcement of the law in the hands of local officials that township councils were given power to appoint. Some councils appointed inspectors. Others did not. A large proportion of the inspectors thus appointed were not competent. The result, as might be expected, was that the scale spread. The fact, however, that the area in which it is prevalent is confined to portions of the Niagara peninsula and the southern counties of the province shows that it is not as dangerous in the colder districts, including those where apples are grown, as was at first feared.

Most of the nursery stock used in Nova Scotia is grown in Ontario. This, of necessity, must continue to be the case for years to come. We understand that one of the measures for preventing the further introduction of the scale in Nova Scotia that is under consideration is the establishment by the Provincial Government of inspection and fumigation stations at Dieby and Truro and of scouring all nursery stock from the western provinces to pass through these stations. This suggestion has much to commend it and yet it should be given very careful consideration before it is adopted if such action becomes likely. In spite of the testimony to the contrary by certain Government officials in British Columbia, the inspection of nursery stock in that province has not proved entirely satisfactory. For various reasons not connected with the character of the stock it has driven all eastern nursery stock out of that province and forced the local growers to depend largely on the less hardy stock grown in the Pacific coast states, although many of them, especially those living in the more eastern part of the province, would like to be able to obtain the Ontario grown stock.

Three large nurseries in Ontario furnish approximately ninety-eight per cent. of the nursery stock shipped from that province to Nova Scotia. Under more favorable con-

ditions they might also furnish a large proportion of the stock imported by the fruit growers of British Columbia. We are inclined to think that the Dominion Government might well be asked to assume responsibility for the thorough inspection and fumigation of all this stock at the nurseries. The officials appointed to look after the work might be subject to approval by the Provincial Governments interested, and the expense be shared between the Dominion and the provinces. This would avoid double fumigation and handling of the stock which always proves expensive and disastrous to the quality of the stock.

The situation is full of difficulties. This makes it all the more important that it shall not be dealt with finally in undue haste. We would like to see arranged a conference between the various Provincial and Dominion Government officials interested as well as by representatives of the other interests affected.

SEND DELEGATES

During the next few days the horticultural societies of Ontario will hold their annual meetings. Shortly afterwards will take place the annual convention of the Ontario Horticultural Association. Every horticultural society in Ontario should arrange to send one or more delegates to the convention.

Most horticultural societies are short of funds. Sometimes this leads them, while considering their own needs, to forget their duty to the central organization. This is unfortunate. Twice now the provincial association has succeeded in securing material increases in the Government grant to local societies as well as important amendments to the act under which they operate, which have enabled them to prosecute their work to better advantage. The reports of the discussions at the annual conventions, which are distributed by the Government, are full of interest and value. The local societies will promote their own best interests if they make it a point to be represented at the approaching convention of the provincial association.

A VALUABLE REPORT

As we anticipated that it would, the report on fruit conditions in Canada, by Mr. W. H. Bunting, of St. Catharines, copies of which are now being distributed, proves to be a document that has been needed for some years. At the request of the Dominion Minister of Agriculture, Mr. Bunting recently made a thorough inspection of fruit growing conditions in all our provinces. He has summed up conditions as he found them in a thorough yet impartial manner. The report is lengthy, well illustrated, and full of interest.

While the report contains little that was not well known to many yet it is the fact that the information it contains has been gathered together under one cover. Its greatest value will be for distribution among those people, largely in Great Britain, who think of coming to Canada to take up fruit growing. Hitherto these people have had to rely on such reports as they have been able to obtain from provincial sources or through local horticulturists. This information often has been somewhat misleading and in no case has it been complete. Hereafter, these people will be able to learn through this report just what advantages each province has to offer and profit by some of the warnings it contains. Both the Dominion Government and Mr. Bunting are to be congratulated upon this

successful culmination of the thorough investigation that was made.

Only those who enjoyed the pleasure of a personal acquaintance with the late Prof. John Craig, of Cornell University, at one time Dominion Horticulturist, and who knew what he had accomplished as well as something of his plans for the future, can appreciate what the horticultural interests of the continent have lost by his death. Possessed of unusual ability and personal charm, Professor Craig had the faculty of accomplishing practical results. The appreciation of his life and work, written by Mr. W. T. Macoun, of Ottawa, that appears in another column will be approved by all who knew him. While the late Professor Craig had been ailing for some years his death was so unexpected it was some weeks before it became known to those not in close touch with the family.

Again this year, as they have in the past, apple packers in Ontario, and we presume in other provinces as well, have packed and shipped immense quantities of immature fruit. Already much of the fruit has gone forward to the British market, and the results can only be unfortunate not only to the final purchasers, but to the fruit interests of the Dominion as well. It would be well if the provisions of the Fruit Marks Act could be extended to include practices

of this character. The extension of cooperative packing among the growers is helping to reduce the extent of this evil, but it is still of such proportions, and likely to remain so for some years, that it would be well to have action of some kind taken to prevent it as far as possible in future.

We trust that the members of those horticultural societies which do not now subscribe for The Canadian Horticulturist for all of their members will remember, at their approaching annual meetings, to urge their officers to subscribe for The Canadian Horticulturist for the coming year. About three-quarters of the societies now take The Canadian Horticulturist for all their members. They find that the paper is not only a great aid to their members, but that it helps to obtain new members. Then, also, The Canadian Horticulturist is the only paper of its class in Canada. For that reason alone it should be supported by our Canadian societies.

PUBLISHER'S DESK

Our aim has always been and still is to make The Canadian Horticulturist your favorite paper. We endeavor to publish just the articles and to print only such illustrations as will interest and help the largest percentage of our readers. That we are succeeding is shown by the many letters we receive from subscribers telling how The Canadian Horticulturist has helped them by giving just the information they wanted, and just at the right moment. Others tell us about new ideas they have obtained through The Canadian Horticulturist which, when worked out, have been a source both of pleasure and profit. Subscribers have frequently told us that information contained in a single issue has been easily worth to them the price of a full year's subscription, and often many times that amount.

Another evidence we have that our readers are pleased with The Canadian Horticulturist is the rapidly increasing number who when renewing their subscriptions pay for the paper for two years instead of one. During the month of September, one of our good subscription months, the two year renewal subscriptions outnumbered the one year subscriptions nearly five to one the two year subscriptions numbering nearly eighty-three per cent. of the total number of renewals for the month. The record for other months is almost as good. This large percentage of two year renewal subscriptions proves that those who have been getting the Canadian Horticulturist and know what it is like, are pleased with the information it is giving them.

This is as we would have it. But we realize that there are ways in which The Canadian Horticulturist can be made of still further interest and value. As this year draws to a close we are laying our plans for still further improvements. In this connection it is fitting that our readers be given a special invitation for an expression of opinion as to just what improvements they as individuals would most like to see made during 1913. Won't you give it? Be specific. If you would like to see more information on fruit growing tell just what kind of articles you would like to see added, and suggest two or three subjects on which you would like to see articles published during the coming year. Similar information is desired for our flower and

vegetable departments. Has there been some information you have looked for recently and have not found? What was it? How do you like our articles on Canadian gardens? Would you like to see them continued or the space given to other information on flower growing? How did you like the three new covers on our February, April, and September numbers? Which did you like the best, the colored or the plain illustrations the full size of the page? Give any other suggestions as to how The Canadian Horticulturist could be made of greater interest and value to yourself personally. There will be many valuable suggestions which we can act on during the coming year. Now is a good time to offer your suggestions when we are planning our programme for the coming year. We will welcome your letters.

Next year we purpose increasing the amount of reading matter in The Canadian Horticulturist. As to how this will be done we have not as yet decided. It may be done by increasing the number of pages or by using a different style of type that, while not detracting from the appearance of the page, will increase the amount of reading material it contains. When we explain that to add only four pages of reading to each issue of The Canadian Horticulturist owing to our now large circulation would involve an expenditure on our part equal to all the revenue that would be obtained from approximately two thousand yearly subscriptions our readers will see that the matter is an important one to us. We intend, however, doing that which will be in the best interests of all concerned, and we anticipate that our final decision, when it is announced, as it will be soon, will be a welcome and pleasing one to the readers of The Canadian Horticulturist.

We hope that you are telling your friends who are interested in fruit and flowers about the great value of the information you are obtaining through The Canadian Horticulturist. Are you? If so, you are helping us to reach the point where still further improvements will be possible.

A Nova Scotia Appointment

Mr. Robert Matheson, Ph.D., Cornell, at present Assistant Professor of Biology at Cornell University, Ithaca, has been appointed Provincial Entomologist for the Province of Nova Scotia and Professor of Zoology at the Nova Scotia Agricultural College. Mr. Matheson is a native of Pictou county, Nova Scotia, and graduated from the School of Agriculture under the management of Prof. H. W. Smith.

After taking his Master's degree at Cornell, Mr. Matheson for two years occupied the position of State Entomologist for North Dakota. Returning to Cornell, he took his Doctor's degree with high honors, and was immediately appointed to the staff of that institution. Dr. Matheson will teach the subjects of zoology, including entomology, at the Agricultural College, but the greater part of his work will have to do with the investigation of entomological problems in the province of Nova Scotia and the administration of various measures for the prevention and extermination and control of insect pests.

Enclosed you will find \$1.00 for two years subscription to The Canadian Horticulturist. The instructions you gave in the April, 1912, Number, on how to trim young fruit trees was worth the two years subscription. —Harry Shore, Byron, Ont.

CHRISTMAS

Next issue (December) is our Christmas Number. Plans which are now under way assure us that this issue will be one of unusual interest to our readers. Special articles are being prepared which will make a fitting close to a year wherein much progress has been made along horticultural lines, and a year wherein Canada's national horticultural journal, The Canadian Horticulturist, has made new records in regard to numbers of subscribers, amount of advertising carried, the adoption of new features and general improvement in the Magazine, and in the quality of the special articles and general information given.

We hope to make our Christmas Number the best of the special issues published this year. It will have a new and attractive dress, (we are having a special cover prepared for this issue), and will number among its contributors many of the big men of the horticultural world in Canada. It will be an issue which our readers will want to keep, both for its attractive appearance and the quality and real live interest of the information contained.

If you have goods to sell which will interest a progressive and well-to-do class of readers, who read The Canadian Horticulturist, because they are vitally interested in the information it contains, it will pay you well to use this Christmas Number. Advertising in The Canadian Horticulturist, this Fall, is exceeding all previous records. Experienced advertisers know that the best mediums to patronize are those in which business is good.

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

NEW ONTARIO EXHIBIT

The Department of Agriculture of the Province of Ontario have equipped a demonstration car with roots, grains, vegetables, grasses, etc., of Northern Ontario, and the itinerary is as follows:

Toronto	Oct. 19, 21 and 22
Claremont	Oct. 23
Burketon Jct.	Oct. 24
Peterboro	Oct. 25
Norwood	Oct. 26
Havelock	Oct. 28
Central Ont. Jct.	Oct. 29
Ivanhoe	Oct. 30
Tweed	Oct. 31
Ardendale	Nov. 1
Mountain Grove	Nov. 2
Sharbot Lake	Nov. 4
Maberly	Nov. 5
Perth	Nov. 6
Smith's Falls	Nov. 7
Winchester	Nov. 8
Chesterville	Nov. 9
Finch	Nov. 11
Avonmore	Nov. 12
Apple Hill	Nov. 13
Vankleek Hill	Nov. 14
Caledonia Springs	Nov. 15
Ottawa	Nov. 16 and 18
Renfrew, G.T.R.	Nov. 19
Douglas	Nov. 20
Eganville	Nov. 21
Golden Lake	Nov. 22
Killaloe	Nov. 23
Wilno	Nov. 25
Barry's Bay	Nov. 26
Madawaska	Nov. 27
Whitney	Nov. 28
Raney Lake	Nov. 29
Scotia Jct.	Nov. 30

Top Grafting Apple Orchards

Wm. Welsh, Kincardine, Ont.

FOR eight or ten years I have been earnest in advising the planting of orchards and renovating old ones, by proper trimming and top grafting. This Lake Huron district is destined to be equal, if not superior, to any other tract of land in Canada, for well flavored and good looking fruit. What is wanted is suitable kinds and proper attention, comprising cultivation, spraying and fertilizing, or perhaps I might better say manuring, for trees require moderately rich ground to bring fruit to perfection.

In a letter by A. McNeill, regarding top grafting on Tolman Sweet, the writer casts a little doubt upon the benefit derived. Probably in a sense he is correct, but there is one point in grafting on Tolman stock that I have never seen mentioned, and that is the matter of having the stock comprising from six to eight feet of stem of Tolman, and beneath that stem we know not what the root may be. It may be a hardy and thrifty root, sending a vigorous growth to the grafts on top, or it may be the opposite.

A thrifty Tolman will develop a better tree than the average root, but how can it be obtained?

In general, grafting for nursery stock, the roots are grown from seed, and the small apple plants are taken up, and a scion which grafted below the line of the surface, which may be easily known by the grafter.

The scion, if of proper quality and cut, is quite likely to form roots, if placed deep enough in the nursery row, and if the soil is of that nature that it will encourage the

formation of roots from the scion. Thus in time we might have a Tolman root on a Tolman stock. If this is so, we have the grandest top in time that can be got, unless it may be the Tetofsky.

After the head is formed, the time to put on the grafts is during some of the warm days of spring, before the bark is too loose, and there will be a strong head at the trunk, where there is little danger of limbs breaking and destroying the tree.

For trees whose limbs are liable to split off at the crotch, nailing or bolting is usually recommended. It is not always wise to tie wire around, although I have seen some doing fairly well, but there is danger of injury to the trees by wiring. It is said that the Portuguese of the Pacific slope in California have adopted a practice of using the living tree for stays and braces, not by cutting props to hold up the overlaid branches, but by grafting the branches amongst themselves in such a way that these grafts act as braces or guys.

To illustrate: Before the tree is overgrown, this system is begun by a careful study or an understanding of the requirements some years hence. Having decided where these strengthening grafts are required, two thrifty sprouts are taken, at opposite points from whence this living cable is to start. These two twigs are brought together and twisted round each other and tied if found necessary. In many cases these two branches will grow together without further care, making a substantial living support while the tree lives. If it is thought necessary the join-

Apple Trees

We are producing hardy varieties of Apples and other fruits for the North. Our Nurseries at Pointe Claire, extending over 170 acres, are devoted to the growing of Hardy Fruit Stocks and Ornamentals, Roses, etc., etc. Our Apple Trees are budded on whole roots and grown under all the rigorous climatic conditions of this section. For this reason they are pronounced by experts to be best suited as stock for Northern planters, both in the Garden and Orchard.

Intending customers are urged to place their orders now while we have a full selection of the best standard varieties.

Catalogues and Lists cheerfully furnished
Free of Charge

Canadian Nursery Co., Ltd.

10 Phillips Place - Montreal, P. Q.

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.

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The Price is Right.
Let Us Quote You.*

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

ing of these sprouts may be helped by artificially grafting them together, which may be done at some point of contact by cutting through the bark of both branches and tying firmly together, and applying wax as in regular grafting. To keep trees from splitting down the trunk, sprouts are taken in the same way from limb to stem, making a solid wooden contact that cannot be split.

The advantages of the living props and guys are that it lessens the injurious effects of heavy winds by checking the switching of the limbs, and consequently much of the bruising of the fruit, and that they (the props) never slip out of place, nor are the least unsightly.

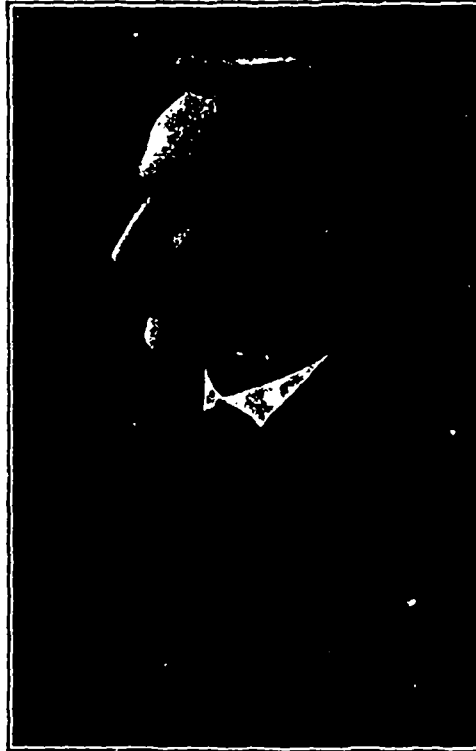
In regard to Tolman stock, to top graft upon, the stem is clean and healthy, and if it is made to develop roots at the bottom or happens to be on as thrifty a bottom, then there will be a growth that, with proper pruning, will develop fruit on younger trees. Take our best apple when the tree has come into bearing (I mean the Northern Spy) upon its own stock, it is from ten to fifteen years before bearing and often twenty years before a fair crop is harvested, but when top grafted on a Tolman, bearing trees may be obtained many years earlier, especially if grafts have been taken from well-known bearing trees and from bearing branches.

By top grafting the quality and appearance of the fruit of the parent tree may be known. This, then, is a worthy consideration, for a full grown tree is a valuable property, the real profit of which may exceed that of the best cow on the farm.

To wait for so many years before realizing a profit, or even knowing whether the fruit is what was ordered or even of good quality, should make every one pause and think before planting an orchard.

John Craig, M. S. Agr.
Late Professor of Horticulture, Agricultural College,
Cornell University, Ithaca, N. Y.

The recent death of Prof. John Craig is deeply deplored by his many friends. Those



The Late Prof. John Craig

Douglas Gardens

Oakville, Ontario

Belated orders for **Paeonies** and **Phloxes** if sent early in this month will be promptly filled and the planting will succeed in most sections.

Paeony Collections

- "One Dollar" 3 varieties, \$1.00
- "Norlake" 10 varieties.. 3.50
- "Douglas" 10 varieties.. 6.00
- "N.W. Special" 7 varieties..... 5.00
- "Ten—for Ten" 10 varieties..... 10.00

Phlox

- "Miss Lingard,".... 20c. each.
- 10 for \$1.50

JOHN CAVERS

Announcement

The Auburn Nurseries of Queenston and Simcoe, formerly operated by Mr. W. O. Burgess, have been transferred to the *Auburn Nurseries, Limited*. Mr. Burgess remains with the Company as a large shareholder, and will fill the position of Managing Director. The plant will be very greatly extended. The Company has lately purchased one hundred acres of fine land in the Oakville district, which will be devoted to high class Ornamentals and Landscape material.

The Auburn Nurseries Limited has a full stock of high class Nursery stock to offer you, and believe that their line of trees is the finest that can be obtained. All orders and enquiries for stock should be addressed to the Head Office at Queenston. Prompt delivery of fall orders can be made.

AUBURN NURSERIES, LIMITED
QUEENSTON SIMCOE OAKVILLE

Bruce's Regal Flowering Bulbs




PLANT NOW

FREE—Write for our 28 page Illustrated Catalogue of Bulbs, Plants, Seeds, Sundries, Poultry Supplies.

We offer a complete assortment of Bulbs for Winter Flowering in the house and spring Flowering in the Garden.

	Each	Doz.	100
Orcus, in 4 colors .....	.02	.10	.78
Frocza, Refracta Alba .....	.04	.30	1.60
Lilica, Calla, white, large .....	.25	2.70	
Lilica, Chinese, Sacred, large .....	.10	1.00	
Hyacintha, Roman, 4 colors .....	.06	.50	3.75
Hyacintha, Dutch, 4 colors .....	.07	.60	4.00
Narcissus, Paper White Grandiflora .....	.06	.40	2.75
Narcissus, Single, 6 varieties .....	.04	.30	1.75
Narcissus, double, 4 varieties .....	.04	.30	2.00
Scilla, Siberica .....	.03	.25	1.50
Snowdrops, Single .....	.02	.15	1.00
Tulipa, single, named, 6 colors .....	.04	.30	1.75
Tulipa, single, choice mixed .....	.03	.25	1.25
Tulipa, double, named, 6 colors04	.35	2.00
Tulipa, double, choice mixed04	.30	1.50

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IT matters not what heating system you use—Steam, Hot Water or Warm Air, you cannot get that much desired atmosphere — gentle restful and wholesome—without proper humidity.

WATER SHOULD BE EVAPORATED FREELY, and the

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With its big **CIRCLE WATERPAN**, holding from four to six gallons, presents the one heating medium which does afford a really comfortable and healthful warmth.

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Western Branch, W^{IN}NIPEG, MAN.


who knew him when he lived in Ottawa will remember his tall, manly figure, his rugged strength and the iron like grip of his hand, and they can scarcely believe that with his great physique serious illness could lay hold upon him. But he has been cut down in the prime of life. He died at Siasconset, Massachusetts, on August 10th, 1912, at the age of 48 years.

Mr. Craig was born at Lakefield, Argen-teuil Co., P.Q., in 1864. His father the late Wm. Craig, was manager of the estate of the late Chas. Gibb, a noted horticulturist of Abbotsford, Quebec, a lover of trees and flowers, from whom Mr. Craig received the inspiration which decided him to make horticulture his life's work. From the High School in Montreal he went to the Agricultural College at Ames, Iowa, in 1885, where he specialized in horticulture and economic botany, becoming in 1887 assistant to Prof. J. L. Budd, Professor of Horticulture, and, in 1888, while still holding the latter office, he became assistant to the Director having charge of the department of Horticulture of the Iowa Agricultural Experiment Station. In January, 1890, he entered the service of the Dominion Government, becoming Horticulturist of the Central Experimental Farm, Ottawa, which position he held until the autumn of 1897. The work in horticulture developed greatly under him. The use of Bordeaux mixture in preventing the development of certain diseases of fruit was practically unknown in Canada when he began experiments, and as early as 1890 we find him using different formulæ to determine the best to use. To his energy in rapidly spreading the good news of the possible control of apple scab, is largely due the wide and early use of Bordeaux mixture in Canada. When San Jose Scale was first discovered in Ontario in 1896 the prompt action which was taken to control it was largely due to him. In 1893 he assisted the Provincial Government in organizing the Ontario Fruit Experiment Stations.

He was one of the most enthusiastic and energetic workers in the Ottawa Horticultural Society, while in Ottawa, and was one of the few who organized the society in 1889. He was president of that society for 1895, 1896, and 1897, during which time it developed rapidly.

Mr. Craig resigned his position as Horticulturist of the Central Experimental Farm in 1897 and went to the United States, where he took a special course at the Agricultural College at Cornell University, obtaining the degree of Master of the Science of Agriculture there in 1899. He was appointed Professor of Horticulture and Forestry of the Iowa State Agricultural College in 1899 which he held until 1900 when he accepted the position of Professor of Extension Teaching at Cornell. He filled this office until 1903 when he became Professor of Horticulture of the Cornell Agricultural College, which post he held until his death.

Prof. Craig filled many offices in the United States. He became Secretary of the American Pomological Society in 1903 and was still Secretary when he died. Notwithstanding his many other duties he edited the National Nurseryman, a trade paper of importance and the organ of the American Association of Nurserymen. Prof. Craig's outstanding qualities were his strength of will and his capacity for work, which led him from one important position to another. He loved horticulture, and being intimately connected with it from his early youth he had a broad insight into, and a great knowledge of, the whole field.—W. T. Macosca



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Tests by Prof. McKergow, McGill University, Montreal, on leading oil-burning lamps show the Aladdin Mantle Lamp is the most economical and gives over twice as much light as the Rayo and other lamps tested. It is odorless, safe, clean, noiseless. Guaranteed. Better light than gas or electric.

To introduce the Aladdin we'll send a sample lamp on **AGENTS WANTED** Experience unnecessary. Every home needs this lamp. One agent sold over 1000 on money back guarantee, not one returned. Another sold \$800 worth in 15 days. Evenings made profitable. Ask for agents prices and trial offer.

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Correspondence invited

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The Burrowes' Patent Dustless Rocker Ash Sifter

The Only Sifter with a scuttle made to fit dust-tight.

The Only Sifter that cinders can be dumped from screens to scuttle without dust escaping.

The Only Sifter made with double rims, thus making it dust proof.

The Only Sifter with 2 screens, coarse and fine, saves more fuel without extra work.

The Only Sifter made to work on a pair of rockers — rocks as easy as a cradle, full or empty. No weight, the floor carries it all. No clogging. The large space for ashes and the vigorous rocking motion both tend to make the ashes spread rapidly and sift freely.

Convenient. Stands only 2 feet high.

Made of stout Galvanized Iron, Galvanized Screens, and Angle Iron Rockers, and will last many years, with perhaps a new screen, which can be replaced at a small cost. The large size weighs 23 lbs., is 11 1/2 inches wide, 26 long and 23 high, and has double screens — 1 coarse and 1 fine. The smaller size has one screen, weighs 19 lbs., and is 11 1/2 inches wide, 21 long and 21 high.

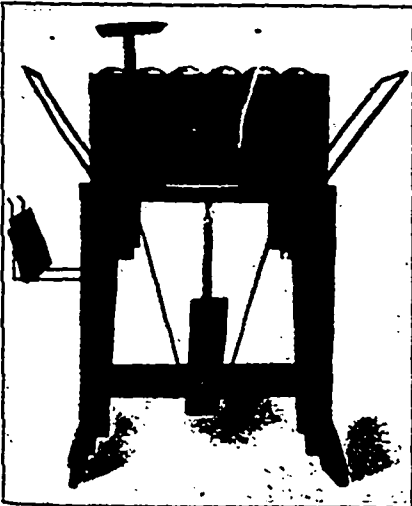
The price is \$1.50 and \$3.50. The larger size is a little quicker, and having two screens, saves more fuel. The fuel saved from 4 tons of coal will easily pay for one.

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That is the way the **DAISY APPLE BOX PRESS** works. A simple pressure of the foot brings the arms up over the ends of the box, automatically draws them down and holds them in place while being nailed. The latest and only automatic press on the market.

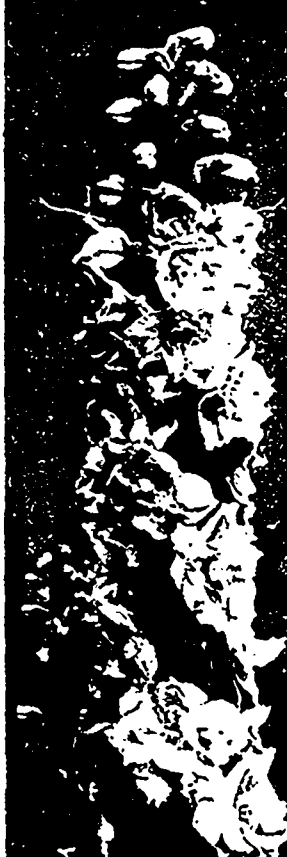


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THE OLD ENGLISH GARDEN owes much of its charm to the beauty of its simple herbaceous plants.

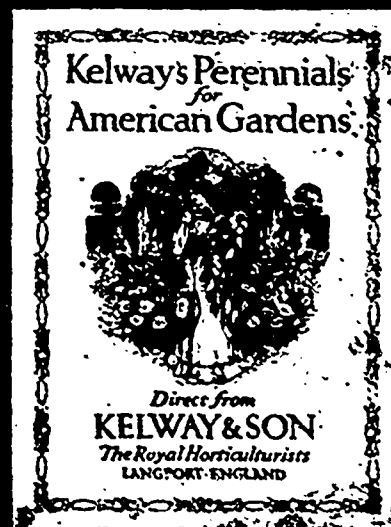
KELWAY'S COLOUR BORDERS of Paeonies, Delphiniums, Pyrethrums, Gailardias and the like will enable you to reproduce this picturesque effect under almost all conditions of soil and climate. Borders are planned to fill any space, and on receipt of dimensions, carefully selected plants are sent beautifully packed, labelled and numbered in order for planting.

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YOUR farm is the purse from which you take the necessities and luxuries of life. What provision are you making to keep your purse full—to insure a constant supply of food, clothing, heat, light, protection, and worldly wealth?

No purse can stand a steady drain—no soil can produce constant yearly crops—without an adequate income. The purse must be supplied with money, the soil with plant food. It is easier, and far cheaper, to maintain a fertile condition of the soil than it is to build it up after it is once exhausted. Be wise—begin now to use faithfully an

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Use your I H C spreader to distribute stable manure and saturated bedding while it is still fresh. Spread in light coats so that the plant food elements of the manure may combine quickly and thoroughly with the soil and become available for the use of growing plants. Spread quick-decaying straw to increase the moisture holding capacity of the soil.

If you would have the spreading well done, do it with an I H C manure spreader. Make the quantity of manure usually spread by the fork do twice the amount of good by distributing it properly with an I H C spreader, leaving the ground more evenly fertilized. The driving mechanism of the I H C spreader is strong and thoroughly protected. The aprons, both endless and return, run on large rollers. The feed is positive. The manure is spread evenly, light or heavy as may be necessary, the quantity spread never changing until the feed is changed.

See the I H C local agent and have him show you the spreader best suited to your needs. Get catalogues and full information from him, or write the nearest branch house.

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The purpose of this Bureau is to furnish, free of charge to all, the best information obtainable on better farming. If you have any worthy questions concerning soils, crops, land drainage, irrigation, fertilizer, etc., make your inquiries specific and send them to I H C Service Bureau, Harvester Building, Chicago, U.S.A.



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.

St. Thomas

The St. Thomas Horticultural Society, which has been coming to the front very rapidly during the past year or two, largely through the efforts of its president, Dr. Frank E. Bennett, and whose membership has doubled, now standing at three hundred and twenty-nine, intend going after a membership of seven hundred next year. One of the best features of this work has been its lawn and garden competitions. This year photographs were taken of all the prize gardens and lawns and arrangements are being made with one of the local papers to publish them in a special edition. The Balaclava Street school grounds, which took first prize in the school garden competition, are, according to Dr. Leake of Toronto, Inspector of Manual Training Schools, the finest grounds in their floral arrangement and effect that he has seen. The officers of this society are enthusiastic and naturally results are following.

Hamilton

Increasing interest is being taken by the citizens of Hamilton in the descriptions of Hamilton gardens being published in the daily papers by members of the Hamilton Horticultural Society. The society some time ago appointed one or two of its members, including Mrs. A. L. Potts, to visit the gardens of its members and others to secure descriptions of them for publication in the daily papers. At first it was feared that the papers would not be willing to publish the articles when prepared, and also that the public might not be interested in reading them. This fear has proved baseless. Mrs. Potts, in a letter to THE CANADIAN HORTICULTURIST, states that so much interest is being taken in these articles the papers are anxious to obtain them, and have promised to find all the space necessary to publish even more complete articles than those that have been furnished. They have been publishing the articles as soon as supplied, and asking for more. Some thirty have been printed.

"I am having funny experiences," writes Mrs. Potts, "but they add zest to this new occupation. It is flattering to learn of the interest being taken in these articles. It is far wider than is generally realized, but the funniest part is to be informed that 'So-and-So' has been reading these articles and wants us to go and write up their garden. This is a line of work that other societies might follow with advantage."

Strathroy

The Strathroy Horticultural Society recently held the most successful show for the children of the public schools in its history, there being nine hundred and forty-four entries. Over one hundred dollars were given in prizes to the scholars of the nine different rooms of the public schools for the following: Best six asters, white; best six asters, pink; best twelve asters, white; best twelve asters, pink; collection of nasturtiums and hand bouquets and there was a large and keen competition for the premiums. The flowers completely filled the

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Every cent invested in this wonderful health-giver, brings back dollars in strong, healthy horses, cows, sheep and hogs.

Careful tests show that 4 quarts of oats and the regular feed of INTERNATIONAL STOCK FOOD will keep horses in better condition than FIVE quarts of oats without it.

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Nothing like INTERNATIONAL STOCK FOOD to fatten animals for market. Your hogs need it. Ask your dealer for it.

TESTIMONIAL

Mayfield Sta. Man., Nov. 13, 1911.
International Stock Food Co. Ltd.
Toronto, Ont.

Dear Sirs—I want to say that your Stock Food is all right. I have had more good from its use than any other kind I ever used, and do not care to start winter feeding without it. Please ship as soon as you can to Carroll. Yours very truly (Signed) JOHN ROUSSEAU

We have a copy of our \$3,000 Stock Book for you. Send us your name and address, and tell us the number of head of stock you own.

INTERNATIONAL STOCK FOOD CO. Limited
TORONTO ONTARIO

MENTION THIS PAPER.



WANTED-APPLES

40,000 BARRELS

MONTREAL AND VICINITY, POPULATION 1,000,000

CONSIGN YOUR APPLES TO

GEO. VIPOND & CO. - MONTREAL

BRANCH: OTTAWA, ONT.

ACCOUNT SALES AND CHEQUES DAY OF SALE

APPLES APPLES APPLES

W. S. BUCKOLL

Fruit Importer and Merchant

NOTTINGHAM, ENGLAND

Solicits your consignments.

Write for particulars early.

Highest references given.

Telegraphic Address, Buckoll, Nottingham

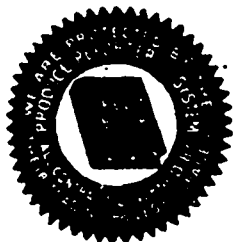
DON'T SACRIFICE!

If you have good apples to sell and you think you should get more than you are offered, do not sacrifice them. Ship them to Toronto. The Toronto market alone will require immense quantities of apples between now and spring.

We have cold storage facilities and can store your apples till a favorable price can be realized, thus protecting your interests. Write or wire us to-day.

DAWSON-ELLIOTT CO.

90 COLBORNE ST. - TORONTO



We Solicit Your Consignments

Send for Shipping Stamp

Good Prices Always

For Your Fruit and Vegetables

OUR facilities enable us to realize top prices at all times for your fruit, vegetables or general produce. Aside from our large connection on the Toronto market, we have established branch warehouses with competent men in charge at **Sudbury, North Bay, Cobalt, Cochrane and Porcupine**. In time of congestion on the Toronto market we have a ready outlet through these branches. We never have to sacrifice your interests.

Branch Warehouses: Sudbury, North Bay, Cobalt, Cochrane and Porcupine

H. PETERS

88 Front St. East, Toronto

References: The Canadian Bank of Commerce, (Market Branch) and Commercial Agencies.



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Of Each—
Side By Side**

Take "St. Lawrence"
Granulated in one
scoop—and any oth-
er sugar in the other.

Look at "St. Law-
rence" Sugar — its
perfect crystals — its
pure, white sparkle—
its even grain. Test it point by point, and you will see that



**Absolutely
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St. Lawrence
Sugar

**Absolutely
Pure**

is one of the choicest sugars ever refined—with a standard of purity that few sugars can boast. Try it in your home.

Analysis shows "St. Lawrence Granulated" to be "99.99/100 to 1000 Pure Cane Sugar with no impurities whatever"

"Most every dealer sells St. Lawrence Sugar."

ST. LAWRENCE SUGAR REFINERIES LIMITED, • MONTREAL.

65A

large rooms of the school and made a most beautiful sight. Crowds attended from two to five o'clock in the afternoon. The School Board gave the public schools a holiday. The success of the show is due in large measure to the energetic work of the obliging secretary, R. F. Richardsen.

Weston

On account of the slaughter of birds and squirrels in the vicinity of Weston, the society appointed a committee to look into and deal with the matter and to confer with the Toronto Humane Society.

Toronto

A feature of the monthly exhibition of the Toronto Horticultural Society held during August was an exhibit of rare water-lilies made by Mr. Dreer, of Philadelphia, one of the greatest producers of aquatic plants in the world. It consisted of twenty-seven varieties ranging from white and creams through pinks and reds into the deep purples, many of them being three inches in diameter.

Annapolis Valley

Manning K. Ellis

In about another week "the Valley" will have finished gathering one of the best crops in its apple growing history. This is particularly true of King's Co., where nearly, if not quite, as many barrels will be picked as last year. In going about the country one fact is noticeable—the very large crops are on the very well cared for orchards. Trees of low vitality could not stand another crop like last year without a rest. Where cultivation and manure are not lacking annual crops can be expected if weather conditions are right. Well sprayed orchards without exception are yielding more apples than where spraying is neglected or only done in a half-hearted manner. Fungus diseases have more to do than we think with the "set" and "drop."

The pack of the United Fruit Companies is giving much satisfaction in the local markets. It is now possible for a dealer to buy a car of Gravensteins of one pack, true to grade and uniform right through the car. With this method of handling, the Gravensteins may again take a premier place among Nova Scotia apples, a place which it had lost by the miserable manner of marketing. Raised right and packed right, the Gravenstein is our greatest advertisement. If its season could be extended by a system of cold storage, its principal disadvantage would be overcome.

Eastern Annapolis Valley

Emmie Watts Buchanan

The United Fruit Companies of Nova Scotia, Ltd., are so well organized that much of the bookkeeping of the branch companies is going through the head office at Berwick, thus saving managers much work. As a result of this individual growers have very little knowledge of apple prices and less anxiety with regard to studying markets. It also lessens the bird-hib problem, as the men who were employed to sort the fruit on the farms now do work in the warehouses. It is also estimated that by cooperation two or three thousand dollars will be saved in the shipping of small cheques.

Evaporators are springing up very fast or ten miles; these industries offer forty cents a barrel for apples over two inches and pay their boy and girl workers a dollar a day. An evaporator costing two thousand



**Prepare Yourself
For Winter's Worst**

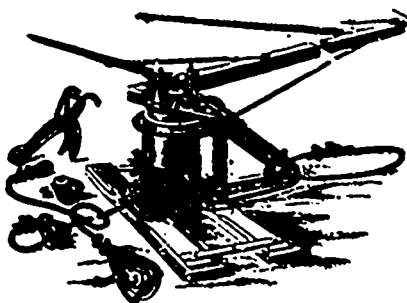
Don't wait till you have caught one of those nasty colds—fortify yourself against them by taking a course of

**Na-Dru-Co Tasteless
Preparation of
Cod Liver Oil**

This "builder-up" is rich in the medicinal and nutritive properties of the best Norwegian Cod Liver Oil—without the disagreeable taste. It also contains Extract of Malt, Extract of Wild Cherry and valuable Hypophosphites, which tone up the whole system and particularly strengthen the Lungs, Throat and Bronchial Tubes.

In 50c. and \$1.00 bottles, at your druggist's. 305

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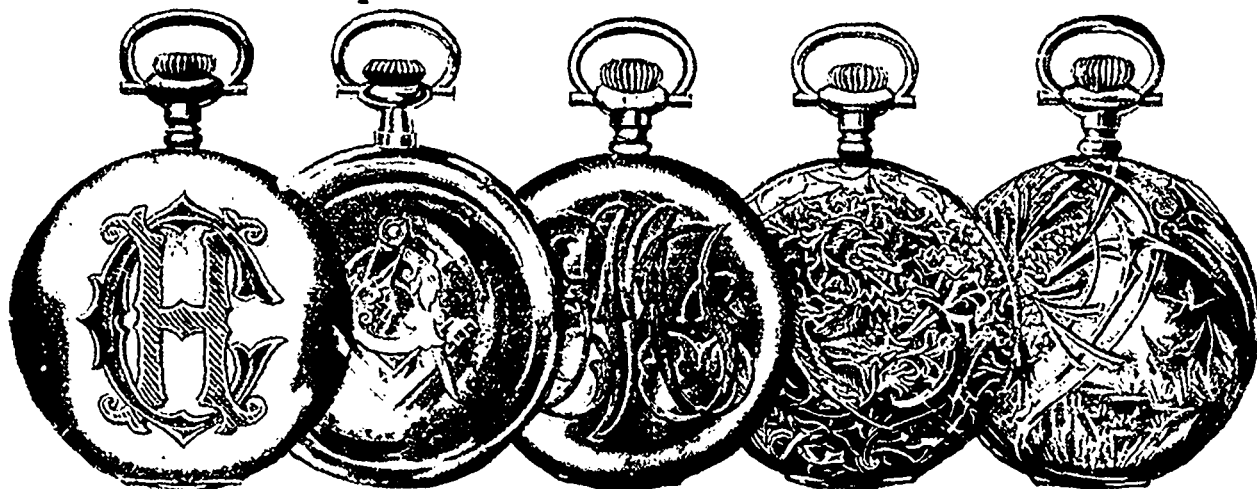


**How many acres can you
stump this Fall?**

This depends upon how soon you get a Swenson's Malleable Stump-puller. They are made in five sizes, so write for Catalogue "H" and find out what size you want. Every machine guaranteed, and a stock on hand for prompt shipment. Write today, telling us the size and kind of your stumps.

CANADIAN SWENSONS LIMITED - Lindsay, Ontario

The Most Exquisite New Ideas in Watch Cases



Take your choice of these superb new style watches sent without a cent down—on approval (Payable at \$2.50 a Month)



The Movement-- In connection with our sweeping fighting on trust methods we have selected our finest highest grade watch for a special offer direct to the people. **Material:** The best that money can buy. **Workmen:** World renowned experts in their line.

The Jewels: 19 finest grade selected genuine imported rubies and sapphires, absolutely flawless. (It is well understood in the railroad business that 19 jewels is the proper number for maximum efficiency.)

Factory Fitted and factory tested. Fitted right at the factory into the case made for that watch—and re-timed after fitting. No looseness or wearing of the parts. No rattle or jar.

Adjustment! Adjusted to temperature, isochronism and positions. The most rigid tests.

Since the \$1,000 Challenge

was made to the giant factories four years ago, why have they not answered? Why have not these factories produced a watch equal to the Burlington? And this challenge did not ask our competitors to produce a watch better than the Burlington. NO. If they should produce a watch equal to the Burlington we should be the losers. Our \$1,000 still lies in the bank for competitors to cover.

No Money Down

We ship the watch on approval, prepaid (your choice of ladies' or gentlemen's open face or hunting case). You risk absolutely nothing—you pay nothing—not one cent unless you want the great offer after seeing and thoroughly inspecting the watch.

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A Bomb! for the Watch Trust

The Burlington Offer—Our startling and smashing direct offer is overwhelming the watch trust. The superb Burlington Special at the anti-trust rock-bottom price—the same price that even the wholesale jeweler must pay—is paralyzing competition. Such a *smashing and overwhelming* offer has never before been heard of in the entire history of the watch industry. Just think of it! You may secure one of these superb time-pieces—a watch of the very latest model, the popular new thin design, adjusted to the second—19 jewels—the most perfect product of the most expert watch manufacturers in the world, at the rock-bottom price, direct from us—the identical price that even the **wholesale jeweler must pay.** And you may pay this rock-bottom price at the rate of \$2.50 a month. Yes—only \$2.50 a month and all the time you are carrying this most superb time-piece. No wonder competition is paralyzed. No wonder everyone says that this is the greatest watch offer of the age.

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Get this wonderful new watch book. It is free and prepaid. No obligations whatever. It will tell you about our gigantic fight against the trust and trust methods. It will tell you of quiet agreements which the giant factories have with dealers which enable them to uphold prices. That is the reason why we say that the great watch factories are a trust. It is because they have contracts and agreements with dealers everywhere which enable them to control trade and to uphold prices. It is not an illegal trust; but its methods are unfair to the public who must pay the price. We want you to get this watch book at once. Find out the inside facts of the watch industry. This book will also tell you about the superb Burlington Special and how it is manufactured for *quality*, not *quantity*. Just put your name and address on the coupon and send it to us today. We will send you the book prepaid—no obligations on your whatever. Do not delay. Better write now.



FREE WATCH BOOK COUPON

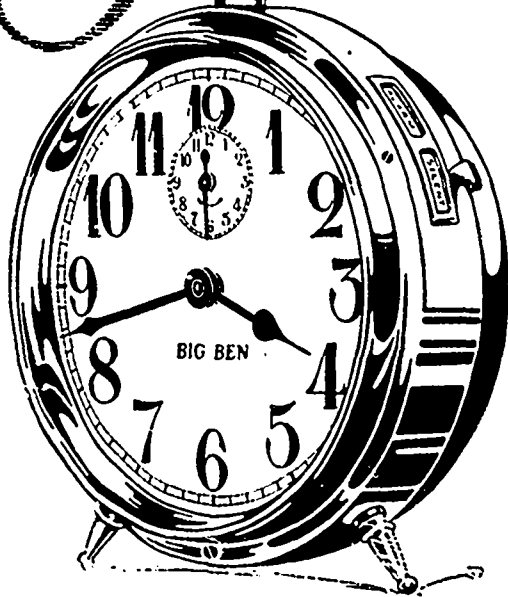
BURLINGTON WATCH CO. 289 Carlton Street, Dept. 76-3, Winnipeg, Canada

Please send me absolutely free and prepaid one of your new watch books explaining about your anti-trust fight, and giving the inside facts of the watch industry. Also give full name, address—I may obtain a lady-adjusted or steel gold Swiss genuine Burlington Special, on approval, at the rock-bottom price, on terms of \$2.50 a month. No obligations on my part.

Name _____

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Big Ben



Big Ben ends the over-sleeping of Farm Hands

Will you spend Three Dollars to insure yourself for years against that everlasting bother—getting the farm hands in the fields on time? Will you spend it to insure a full days work from each man six days out of every seven.

Then, spend it for Big Ben. He's doing it on thousands of farms every day right now. More than a million people have spent it for Big Ben to help them get to work on time. Don't you want to join the Big Ben Army. Don't you want your farm hands to be members?

Alarms are sold at \$1.00 and \$1.50 less than Big Ben costs but such alarms are merely things to wake up by, not to wake on time with. They enable you to make a guess at the right time, that's all.

Big Ben enables you to know the right time. When he wakes you he

does it at the time you want, the right time.

Then, cheap alarms may last a year but Big Ben actually lasts for years and years. He's built of steel. He's a handsome clock plus a punctual alarm. You can use him all day long in any room for he fits bed room, parlor, dining room or hall.

The city man can get the right time of his neighbor or by picking up a telephone but that's not so convenient for you. You need a reliable time-keeper always in the house. That's why you need Big Ben more than you need a plain "alarm."

Big Ben rings just when you want and either way you want five straight minutes or even half minute during ten minutes unless you flag him off. His big keys make winding easy and his great open face and large hands tell the time plainly across the largest rooms.

Big Ben is sold by 5,000 Canadian dealers. His price is \$3.00 anywhere. If you cannot find him at your dealer's, a money order sent to his designers, Wenzel, La Salle, Illinois, will bring him to you duty charges paid. Put him right now on your Christmas list.

sand dollars to build, can clear on thousand dollars a year profit.

Girls earn seventy-five cents a day in the warehouses at packing fruit. Apple grading machines worked by man power have been introduced, but probably gasoline engines will eventually be used.

The South African market has taken more boxed fruit than ever this year. Black Ben Davis seems popular with them.

Barrels are not so scarce as last year, and have sold for twenty-five or twenty-six cents. The Gravenstein apple crop was larger than was at first expected.

So far the weather has been cool, with few storms. The first heavy white frost finally destroyed corn and other tender plants on 9th October, which is later than usual. Potatoes are much cheaper this season, having dropped to thirty cents a bushel. Tomatoes ranged between thirty and fifty cents a basket. Crab apples ten cents a basket.

The British Apple Markets

Since my last report there has been a marked improvement in the market here. At the time of writing (Oct. 12) there is a very good demand for apples of good color and condition. With the home fruit crop disappearing there is a very reasonable hope of prices being maintained for good healthy fruit.

As is usual at this time of the year, buyers give special attention to color, and are always willing to pay "the price" for fruit of good appearance, which is the one thing lacking in most of the English fruit.

Amongst the Nova Scotian arrivals there has been a considerable quantity of "spotted fruit," for which very fair prices have been obtained, notwithstanding the doubtful condition of it. Its presence, however, has made buyers more keen on the better class stuff.

Shipments from Canada have been somewhat light, and with the exception of the "spotted" in the Nova Scotians, have arrived here in excellent condition. United States arrivals have varied a great deal as regards quality, in fact a good proportion could only be described as "medium." The prices have, however, been fairly good all round.

A number of "box" apples have been offered here, those from California meet with a rather poor reception, while those from Wenatchee fared even worse.

Quebec Fruit Growers' Convention

As reported in the October issue of The Canadian Horticulturist, the annual summer meeting of the Pomological and Fruit Growing Society of the Province of Quebec was held at St. Famille, Island of Orleans, Que., September 18 and 19. Prof. W. Lech head, of Macdonald College, Que., described methods of combatting insect life in the fall, his remarks being along the same lines as the articles by him that appeared in the last issue of The Canadian Horticulturist.

Mr. Henri Cloutier, superintendent of demonstration orchards, at Rougemont and district, read a paper dealing with pruning methods. He corrected the old idea that pruning was going against nature. He showed that pruning made the tree vigorous, healthy and fertile. Pruning carried on in a careless or an amateur manner would, he explained, be injurious. The question of how to cut was of great importance.

The establishment of an orchard was explained by Mr. Ben Richardson, of Macdon-

THE SOUTHERN FIELD
FACTS ABOUT
THE
SOUTHEAST
FREE
ON
REQUEST

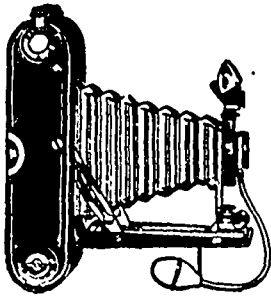
Farm Lands Average Less Than \$17 Per Acre. Undeveloped tracts sell from \$5 up. Beef, pork, dairying, poultry, sheep and horses make big profits. Large returns from alfalfa, corn, truck, cotton, apples, fruits and nuts. Growers command good local and Northern Markets.

The Southern Railway Mobile & Ohio Railroad or Georgia So. & Florida Ry. territory offers the finest conditions for farms and homes. Plenty of rain, mild winters, enjoyable summers. Promising industrial openings everywhere. The Southern Railway has nothing to sell; we want YOU in the Southeast. The "Southern Field," state booklets and all facts free. M. V. RICHARDS, Land & Industrial Agent, Room 18 Washington, D. C.

SMALL FRUIT PLANTS

Gooseberries, Josselyn, Red Jacket, Downing, Pearl, Houghton.—Currants, Perfection, Ruby, Cherry, White Grape, Lee's Prolific, Champion, Black Naples, Victoria.—Raspberries, Herbert, Cuthbert, Marlboro, Brinckle's Orange, Golden Queen, Strawberry-Raspberry.—Garden Roots, Asparagus, Rhubarb. Write for Catalogue.

Wm. F. EMING, Nurseryman, Box 54, Owen Sound, Ontario



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Canadian Kodak Co., Limited
TORONTO

ald College, who discussed methods of planting, choice of varieties, and preparation of the soil. A common fault was that of planting too close together. Large size, as a merit, was an error. Cleanliness, stockiness and firm, hard growth were of more importance

In the absence of Mr. C. P. Newman, president of the society, Rev. Father Leopold, of La Trappe, presided over the meetings. In the hall of the Convent of the Sisters of the Congregation where the meetings were held, there was a small but fine selection of locally grown apples and plums on exhibition. Mr. J. C. Chapais of St. Denis, showed nineteen varieties of plums. There were also specimens of packed fruit.

IRRIGATION

The necessity of irrigation for fruit farms was urged by the Hon. J. E. Caron, minister of agriculture for the province. As an incentive, he stated that the provincial Government was ready to spend twenty thousand dollars on such work. That is, they would give the farmers fifty per cent. of any expenditure on irrigation, limiting each farmer to ten arpents. He also stated that his Government had bought two new drills from abroad, which would break the ground effectively and economically. The Minister declared that farmers had too long suffered from the middleman. They did not wish to kill the middleman, but to reduce his abnormal gains, and enjoy a more equitable share themselves. By cooperation:

MAXWELL

MAXWELL'S HIGH SPEED CHAMPION

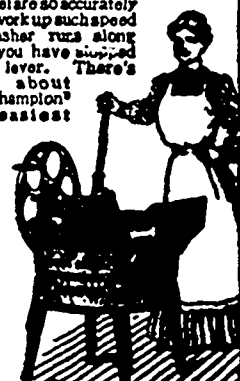
Is the Washer for a Woman

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.

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MAXWELL
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St. Mary, Ont.
92**



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SAVE OVER \$25
WHEN BUYING YOUR
RANGE
THIS FALL.

\$41⁰⁰
TO
\$49⁰⁰

AND WE PAY THE FREIGHT

You Can Buy "DOMINION PRIDE" RANGE At Factory Price
Direct From The Largest Malleable Range Works in Canada

If you want to save from \$25 to \$30, and at the same time get the most satisfactory kitchen range made, write for our Catalogue and look into the merits of the "DOMINION PRIDE," at from \$41 to \$49.

If we sold you identically the same range in the usual way, through a dealer, you would have to pay from \$69 to \$78 for it. You would be paying two extra profits—to wholesaler and retailer—which would add \$25 to \$30 to the cost of your range, but absolutely nothing to its value.

"The Evolution of the Cook Stove"

TELLS about cooking from the time the Cave Dwellers dropped hot stones into the pot to boil it. It also tells all about "Dominion Pride" Ranges. Whether you need a Range just now or not you will enjoy reading this book.

Write for Free Copy.

Besides costing much less than other ranges in its class, the "DOMINION PRIDE" is much more satisfactory. It is made of tough, strong, malleable iron and the best blue polished steel—materials which will not warp, crack or break.

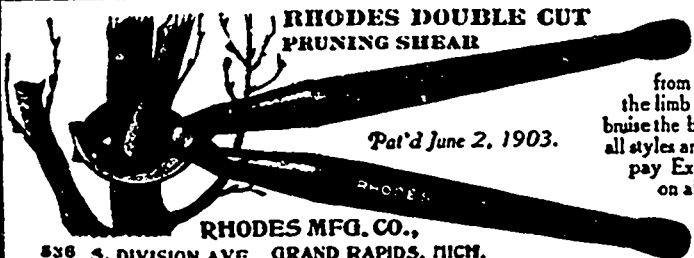
The polished steel does not need blacking—simply rub it over with a cloth. With its cold rolled steel plate oven—sectional iron fire-box lining, with air chambers—and double-walled flues lined with asbestos—the "DOMINION PRIDE" is the most economical range you can buy. Actual tests have proved that it saves over 30% of fuel, burning either wood or coal.

WE PAY THE FREIGHT

A "DOMINION PRIDE" Range, with high closet shelf and elevated tank or flush reservoir, with zinc sheet to go under range, 8 sections blue polished steel pipe and two elbows, will be delivered to any station in Ontario, Quebec or the Maritime Provinces for \$41, or to any station in the four Western Provinces for \$49—\$5 to be sent with order and balance to be paid when the Range is delivered at your station. If not convenient to pay cash we will arrange to accept your note.

Canada Malleable & Steel Range Mfg. Co., Limited, Oshawa, Ont.

When writing it will be a distinct favor to us if you will mention this paper.



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THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.



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It is the safest and best on the market. Fitted with automatic hooks that lock at every rung and unlock between the rungs.

It is **LIGHT, STRONG EASILY OPERATED AND DURABLE**

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THE Stratford Mfg. Co. Limited
STRATFORD, CANADA
Makers of Ladders for every conceivable purpose

WILL YOUR 1913 CROP BE BETTER?

It depends very largely on the seed you sow. You want seed of strong germination and true to character, such as can only be assured in

CARTER'S TESTED SEEDS

Carter's is one of the oldest, and is certainly the most scientific of the seed houses in the British Empire. Everything from Carter's is good. Before you conclude your orders for spring, be sure you

Write for our Catalogue

It is full of valuable information and is up-to-date in every particular.

PATTERSON, WYLDE & CO.
Sole Agents for Canada
133 King St. East TORONTO

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George Johnson
Fruit and Produce Broker
Smithfield Market, Manchester

CONSIGNMENTS OF APPLES SOLICITED

Takes charge at Liverpool, Manchester, London, Hamburg, Havre
All Boxes or Barrels to be marked
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All correspondence and orders dated to Manchester, Head Office

Highest Possible Prices and Prompt Returns

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Established OF CANADA 1875
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Sprayers
Sulfur Dusters

For Fighting Every Disease of Cultivated Plants

Knapsack, Pack Saddle or Horse Drawn Power Sprayers

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they could have cold storage and better railway and market facilities. Mr. J. L. Lefebvre and Mr. J. C. Chapais also spoke.

COOPERATION

In a paper on "Some Features of Cooperation," Mr. Robert Brodie of Montreal, pointed out that notwithstanding the rather strong opposition of certain interests, there were five cooperative societies in different parts of the province of Quebec. "These societies," he asserted, "are yet in their infancy, and have much to learn. It may be," he added, "that competition is the life of industry, but very often it is the death of private industries." Mr. Brodie advised fruit growers to combine for the purpose of buying machines and implements that were only required occasionally.

Rev. Father Leopold, of La Trappe, read a paper upon "Insecticides and Fungicides." In this he dealt very thoroughly with the physiological troubles that affect plant life, indicating the causes of these diseases and contributory conditions. He advocated that disease in plants should be combated by the community as a whole as well as by the individual. At a later stage Father Leopold gave an interesting demonstration in the art of properly packing apples.

In an informal talk on strawberry cultivation, Mr. F. X. Gosselin, director of the Demonstration Orchard at Ste. Famile, discussed methods of planting. In the general discussion that followed, those that took part included Messrs. R. Brodie, Peter Reid, Mr. Solyme Roy, Father Leopold, Mr. Hitchcock and J. C. Chapais.

Cold Storage the Solution

Much money is lost annually by fruit growers, who owing to lack of proper facilities for holding their fruit till a favorable market offers, are obliged to dispose of their season's crop practically as soon as it is harvested, no matter what the condition of the market may be. Such conditions place the growers practically at the mercy of the buyers, and with many it is a frequent occurrence to dispose of their season's crop at a low price at the time it is harvested, and then later on to see other growers who had facilities for holding their crop without deterioration, sell at a considerably advanced rate.

Recent reports this season indicate that quite a number of fruit growers who usually sell their crop to local buyers in bulk have not yet disposed of their season's crop. The anxiety of some of these growers to sell is apt to lead them to accept prices less than what their fruit is really worth. A grower in the Niagara District with a fine crop of apples was recently seriously considering the prospect of sacrificing his whole crop, for said he, "What else can I do? No one has come to buy it." And in a few months fruit such as he had, in a good condition, would find a ready market at good prices.

Anything which offers them a local or temporary conditions in the handling of their fruit crop, means a return to the fruit growers. Many cooperative associations have accomplished this result for their members by the use of cold storage warehouses. But many growers are not in a position to take advantage of the facilities offered by these warehouses. To such the large cold storage warehouses, such as the New Brunswick Cold Storage of St. John, N. B., erected for this purpose, will appeal with special interest as a means of maintaining their crop in good condition until a favorable time for selling.

The advantages of terminal cold storage