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# THE CANADIAN HORTICULTURIST

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## The Apple Scab--How the Fungus Spreads\*

L. Caesar, Provincial Entomologist, Ontario

**A**PPLE scab, or Fungus as it is sometimes called, is by far the most destructive apple disease found in Ontario. It occurs in every part of the province where the apple grows. It is not the same disease as the Pear Scab, so common on Flemish Beauty and some other varieties of pears, but is very closely related. Its presence is of course most familiar to us in the form of the black spots on the fruit, the skin of the apple always being destroyed beneath these spots.

It attacks the leaves just about as readily as the fruit. This fact is perhaps not so well known to fruit growers. On the leaves it causes at first small nearly circular areas about one-fourth of an inch in diameter, and of an olive color. After a while the affected parts often become somewhat elevated making the surface of the leaf irregular or more or less crinkled. Before long these spots die. Sometimes there are numerous spots on the leaves. I have seen leaves of crab apple trees so badly attacked on blade and petiole or stem that most of them fall off by about the first of July.

\*Extract from an address delivered at the recent annual convention of the Ontario Fruit Growers' Association.

A fresh set soon took their place. Occasionally but not ordinarily the tender twigs themselves are attacked.

### LOSS CAUSED BY THE DISEASE

Loss comes in the following ways:

First: Scabby fruit must be rejected, as culls at any rate can never go as number one.

Second: In moist warm autumns the scabby areas on apples in a barrel will soon become attacked by a whitish or pinkish mould, known as pink rot. This makes the apple not only unsightly but unmarketable. Greenings are especially subject to the rot. Even apart from this disease scabby apples will not keep so well as clean apples.

Third: The scab fungus commonly attacks the stems of the fruit while it is still small and causes large numbers to fall. Sometimes it is evidently in a large degree responsible for the failure of a crop.

Fourth: By attacking the leaves and killing areas on these it not only interferes with the power of a tree to manufacture food (the food of a tree is manufactured chiefly in the green leaves) but also permits spray injury around the areas where the protecting skin has

been destroyed. Consequently the vigor of a tree may be greatly lessened by these combined injuries to the leaves. The following year the chances of a good crop are, therefore, greatly lessened through the failure of a tree to form fruit buds. This is one of the reasons why well sprayed orchards regularly yield larger crops than unsprayed and are healthier unless injured by over cultivation or over fertilizing and consequent winter injury.

### LIFE HISTORY OF THE FUNGUS

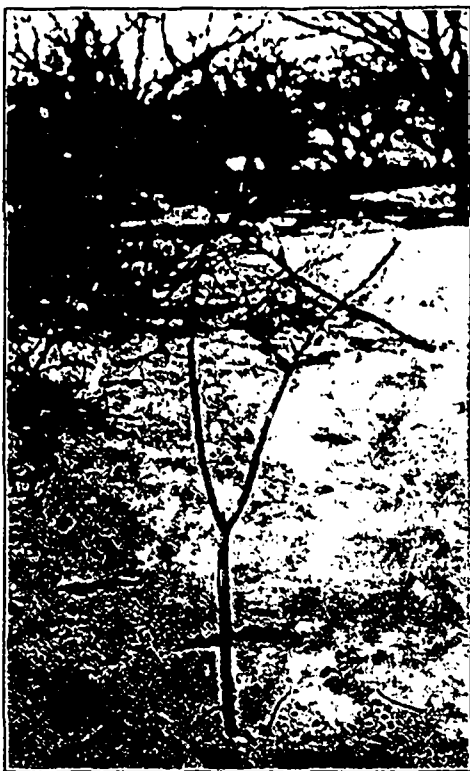
The fungus which causes apple scab is a very small microscopic plant which unlike green plants cannot manufacture its own food but feeds entirely upon other plants, or in other words is a parasite. It passes the winter almost entirely upon the old diseased dead leaves on the ground beneath the tree or wherever they may be blown by the wind. Occasionally it may also winter on the twigs. In the spring, about the time the leaves are expanding, the diseased spots on the dead leaves by a peculiar device begin to shoot out into the air in moist weather tiny little spores which are carried by the wind especially to the lower leaves.

These spores correspond to seeds, and



A Portion of an Eighty-Acre Orchard in the Trenton District of Ontario

The possibilities of the North Shore of Lake Ontario as an apple producing section are only beginning to become recognized. This orchard, owned by W. A. Fraser, Trenton, Ont., contains 4,200 trees, the oldest of which were planted four years ago. In time this will be one of the great apple districts of the continent.



**Young Trees Girdled by Rabbits**

Photo by R. S. Duncan, B.S.A., Port Hope, Ont. Like seeds they cannot germinate unless they get an abundance of moisture; hence if the days are bright and sunny they will not grow but if rain falls and does not dry off for about twelve or eighteen hours they will germinate, and begin to enter the leaves. Once the germ tube has worked through the skin of the leaf it grows rapidly and forms many little threads or rootlets as we may call them. From these in a few days a host of little threads burst up through the skin and keep producing on their tips crops of countless spores. These are constantly being blown by the wind from leaf to leaf and everywhere throughout the orchard, and get also on the stems of the young fruits, and on the fruits themselves. Here, again, if given sufficient moisture, they will germinate and produce scabby areas on all these places.

It is while the fruit and leaves are still small that the fungus spreads most. Once the fruit is three quarters of an inch in size it is not nearly so subject to attack. This is probably due to two reasons: First, the skin has been growing thicker and so is more difficult for the fungus to penetrate. Second, the weather is warmer and brighter, the nights are shorter and so there is seldom a sufficiently prolonged period of moisture for the spores to germinate. As to the time necessary for this, I have had them in the laboratory at a temperature of about sixty degrees F. germinate in between twelve and eighteen hours; at about fifty degrees they were a little longer, and outside at a temperature varying from a

little below freezing to forty degrees F. they had just begun to germinate in forty-eight hours.

It is probable that the germ tube soon enters the apple after beginning to grow. Once it enters it cannot be killed by any spray, hence spraying is to cover leaves and fruit and prevent spores from germinating. From about the middle or end of June until the last week in August there is seldom any noticeable increase in the amount of scab, but with the return of longer nights and lower temperatures, if there is an abundance of continuous wet or foggy weather, as happened in the fall of 1912, we may look for a fresh outbreak of the disease, and should spray to prevent it. The inky spot or sooty fungus of the fruit is also favored by this kind of weather. Leaves are apparently even more subject to this late attack than the fruit and hence there are always plenty of these diseased to carry the fungus through the winter.

### Methods of Cultivation

E. S. Archibald, Wolfville, N. S.

My experience with a part of my orchard for six or seven years in sod is that it gave returns both in quantity and quality equal to any other parts of the orchard of same variety of trees (Gravensteins.) I applied the same kinds and quantities of fertilizers as to the part of the orchard that was cultivated, and whatever grew on the ground I mowed and left as a mulch. I am strongly inclined to put one-half of the older orchard under this treatment from now on and test it as against that of annual cultivation and cover crop.

My feeling is that with heavy clay land not well drained it would not be good but with dry, gravelly or sandy land it might be better than our present method. The mowing of grass or weeds and application of fertilizer will keep a mulch that seems to suit the trees all right. I am not writing as an authority on this matter but have noted for many years trees that have no cultivation (in orchards not my own) and found them doing as well and sometimes better than where cultivation was thorough. Of course fertilizers of some kinds were annually applied.

I would not dare recommend sod culture as a general practice throughout the Annapolis Valley, for many farmers would rake up the grass mown and haul it to the barn for winter feed without putting anything back for mulch. I notice an up-to-date neighbor orchardist is treating his old orchard by alternate plowing and clover. That is, one side of the trees growing clover and the other side cultivated and clover sown for the next year's growth. It means half the orchard cultivated one year and the other half the next. This will enrich the



**A Young Tree in Mr. G. W. Noble's Orchard Wrapped with Tar Paper to Prevent Injury by Rabbits**

Photo by R. S. Duncan, B.S.A., Port Hope, Ont. ground, but is probably hard on the feeding roots to be cut off the second year.

### When to Prune

When is the best season to prune fruit trees?—W.L.K.

A heavy pruning of either young or old trees is conducive to wood growth, rather than fruit bearing, no matter at what season of the year the pruning is done. A pinching back of the growing shoots during the summer months is conducive to fruit bearing. Care should be taken not to pinch back too severely as severe heading in is equivalent to pruning and stimulates wood growth. If trees are making from twelve to eighteen inches of terminal growth, one-quarter or one-third of this may be taken off. This heading in tends to produce short twigs or branches in the centre of the top and with all fruits which bear from spurs this is the first requisite to fruitfulness. As a rule we should not expect results from pruning during the season when it is done, but the following year at the earliest. The German practice of bending the end of the shoot back and twisting it around the main branch lower down is probably better than pinching, as it checks the growth without removing the leaves.

To induce fruitfulness in mature

trees the practice of girdling is well known and in some cases advisable. Removing a circle of bark two-thirds of an inch wide right around the branch

early in the spring, thus permitting the sap to run up in the tree but preventing its return, will produce heavy bearing. Of course this practice cannot be fol-

lowed too closely or one might ruin the tree. The fruit buds that determine the crops of the succeeding year are formed the spring of the year previous.

## Wrapped and Unwrapped Fruit in Boxes

E. T. Palmer, Assistant Horticulturist, Ontario Department of Agriculture

**T**HE question of wrapping is attracting more and more attention each year from eastern growers, and rightly so. In the western states and British Columbia practically all number one fruit is wrapped. Conditions, however, are somewhat different in Ontario, so that wrapping should be governed by the variety of apples and the market. Western growers are building up a high-class market with this high-class product. At present, however, it is doubtful if it would pay the ordinary grower who has no special market for his fruit.

Briefly, the advantages of wrapping are as follows:

First: It improves the keeping quality by preventing disease spreading from fruit to fruit.

Second: Apart from the control of disease, it improves the keeping quality, in that wrapped fruit may be firm and in prime condition several weeks after unwrapped fruit has become mealy from over-ripeness.

Third: It protects the fruit from sudden changes of temperature and absorbs surplus moisture.

Fourth: It makes an elastic but firm pack, much less liable to shift than unwrapped fruit. This applies particularly to easily bruised varieties; it prolongs their life and good appearance.

Fifth: It gives a more finished appearance to the package. It indicates a high-grade product and the fruit finds a readier sale and a higher price in many markets.

Sixth: Once the knack of wrapping has been acquired, it is much easier in almost every way to pack wrapped fruit, as any packer skilled in both methods will testify.

### WRAPPED VS UNWRAPPED

The main disadvantage of wrapping is that in cases where the fruit is not cooled at the time of packing, the wrapper prevents rapid cooling. There may be a difference of ten degrees F. at the end of one day between a box of unwrapped fruit and one wrapped. Wrapping, however, has so many advantages that this one disadvantage may be practically disregarded.

It seems to be the general opinion of those unfamiliar with wrapping that it adds to the cost of packing. As a matter of fact the cost of the paper is almost saved by the weight of fruit displaced by it. Further, experienced packers can do as quick or even quicker work wrapping than without.

Again, it is easier to procure the proper bulke with wrapping, as the firmness of the pack can be varied considerably from the middle of the box to the ends without injuring the pack in any way.

By packing the apples closer in the centre the pockets between the apples are closed up more. The next layer then will not sink so deep, and therefore builds up the centre. The ends being left a little looser, the pockets are opened a little more and the apples drop in further, and therefore do not build up so high. Practice alone will give the know-

ledge of just how tight to pack the centre or how loose to pack the ends.

As this difference in firmness cannot be made with unwrapped fruit it is considerably harder to pack it and have as nicely finished a box. Again, as already noted, there is more latitude in the style of pack when wrapping the fruit.

Only number one fruit and possibly number two of the winter varieties should be wrapped. Usually all fruit intended for distant markets as Great Britain should be wrapped unless the market calls for unwrapped fruit, as the



A Well Loaded British Columbia Peach Tree

(Photo by G. H. E. Hudson, Kelowna.)



**A Duchess Tree After Thinning**

This tree was in one of the demonstration orchards in Durham county, Ont., where experiments in thinning showed a profit of over four dollars a tree in favor of thinning.

fruit carries much better. Wrap, too, for markets where there is competition with wrapped fruit from other districts.

In wrapped fruit the top of the box should be packed last, while in unwrapped fruit the top is packed first. Packing the top of wrapped fruit first is a very poor method and should be discouraged, as the smooth side of the wrapped fruit has to be turned down, and the loose ends sticking up are very confusing to the packer, making his work slower.

#### WRAPPING PAPER

The wrapping paper most commonly used is called the "Duplex," from the fact that one side is calendered and the other rough. This latter side is turned to the fruits as it more readily absorbs any surplus moisture. A white colored wrapper is decidedly preferable as it looks cleaner and neater than any others.

Having paper with the name or trade mark of the grower or association is an excellent method of advertising. It is not necessary to wrap all the apples in such paper, but if the outside layers are done and the trade mark is neat it adds much to the attractiveness of the package.

The paper is cut into several sizes to correspond with the different sizes of apples. The following figures give a good idea of the sizes most commonly in use:

Eight by eight inches, for five-tier and the smaller four and a half tier fruit.

Eight by nine inches and eight by ten for four and a half tier.

Ten by ten inches for four tier and the smaller three and a half tier.

Ten by twelve inches for very large fruit.

These sizes should be adhered to fairly closely, as fruit packed with too large a size paper gives a box light in weight, and also gives the consumer the impression that the price of the fruit is too high. Using paper too small is also objectionable in that a great deal of the advantage of wrapping is lost. It also increases the labor of wrapping and packing to a considerable extent, as does also paper that is too large.

Unstenciled Duplex costs about twelve cents per ream f.o.b. shipping point in small quantities. For larger quantities the price is correspondingly less. A ream contains five hundred sheets, which will pack about three boxes of apples, making the cost per box four cents.

#### TRAY FOR WRAPPING PAPER

For convenience and speed in wrapping, a tray for holding the paper is very necessary. They are made so that they can be placed on the side of the packing box.

To make one an applebox-end is usually taken and strips which project over the edge about two inches are nailed on three sides of it. On the under side a three cornered block is nailed so that one end of it is even with the open side of the tray. This forms a bracket or brace for supporting the tray when in position on the box.

Two long nails are driven into the open side of the tray, leaving about three-fourths of an inch of their length out. The heads are then cut off and the nails bent down over a piece of iron or wood a trifle thicker than the side of the box. This forms hooks for hanging the tray on to the packing box.

#### METHOD OF WRAPPING

Practically no time is lost in the operation of wrapping as a skilled packer picks up the apples with his right hand while he reaches for the paper with the left. To aid in picking up the paper it is advisable to use a rubber stole on the thumb or first finger. The apple is placed in the centre of the paper: in the left hand with the side or end of the fruit down which is to be packed uppermost. The wrap is then made with both hands by a couple of quick half-turns of the wrist, the last of which brings the smooth surface up and the bunch of paper on the bottom. An expert packer should wrap and pack fifty to one hundred boxes a day, depending upon the size and grading of the fruit.

Any permanent organization, with a large quantity of fruit to sell every year, under a uniform brand which will be a guarantee of excellence, can make an impression on the market.—Prof. Crow.

## Summer Pruning

When asked recently for his opinion concerning the summer pruning of fruit trees, Prof. C. L. Lewis, of the Oregon Agricultural College, replied as follows: "I believe with trees three to ten years old summer pruning, if properly done, will have a very good influence in keeping up certain characteristics and tend to bring the trees into bearing earlier. Certain trees, like the Northern Spy, have been materially benefitted. I have seen indications all over the coast of its being a hindrance. In some cases the work has been overdone and I feel that the trees have been damaged. The tendency in mature and bearing trees is to overdo. I have seen men cut off branches six inches in diameter. I have watched a number of orchards, two or three years old, and I fail to see any benefit from such work, in fact the effect, if anything, was injurious to the trees.

"Of course summer pruning can be done in two ways. One is to help shape the tree, correct the habit of growth, and perhaps time can be gained in that way, and this type can be done any time you desire. I believe, however, it should be done moderately and that one should work with the idea of avoiding undesirable growth and development by early pinching and moderate cutting. I believe in doing considerable work of this kind with trees from three years up, and perhaps two-year-old trees.

"The second type of summer pruning is to induce fruitfulness. You can increase the accumulation of tissues around the buds and around the branches by summer pruning, but whether this will result in more fruitfulness and stronger growth, is an open question. Probably it would, like everything else, be influenced by the general treatment of the soil, the drainage it is getting, any artificial stimulation it is receiving, and similar factors. This second pruning for fruit has to be done when the trees are just in the right condition of activity. If the trees are growing too strongly the results are not secured."

Six feet by three feet apart is not too much space to devote to raspberries. We find growing them in hills about six canes to a hill is the most profitable way to have them.—W. J. Kerr, Ottawa, Ont.

Mildew, the great enemy of the English gooseberry in this country, results from planting in sandy soil. The roots of gooseberry bushes run close to the surface and consequently they become scorched. They should be planted in soil that won't heat, such as heavy clay loam. Mulch for the surface will also overcome it.—R. B. Whyte, Ottawa, Ont.

# A Park System for Small Towns\*

C. E. Chambers, Park Commissioner, Toronto, Ont.

**N**O town, however small, can afford to grow up without providing suitably for the parks and open spaces it will surely need if its beautification and healthfulness are to receive proper consideration. In practically all of our

requirements when development has probably extended its boundaries far into the environs. In the preparation of the plan the location and distribution of the park areas should be given careful thought, to the end that each section or district

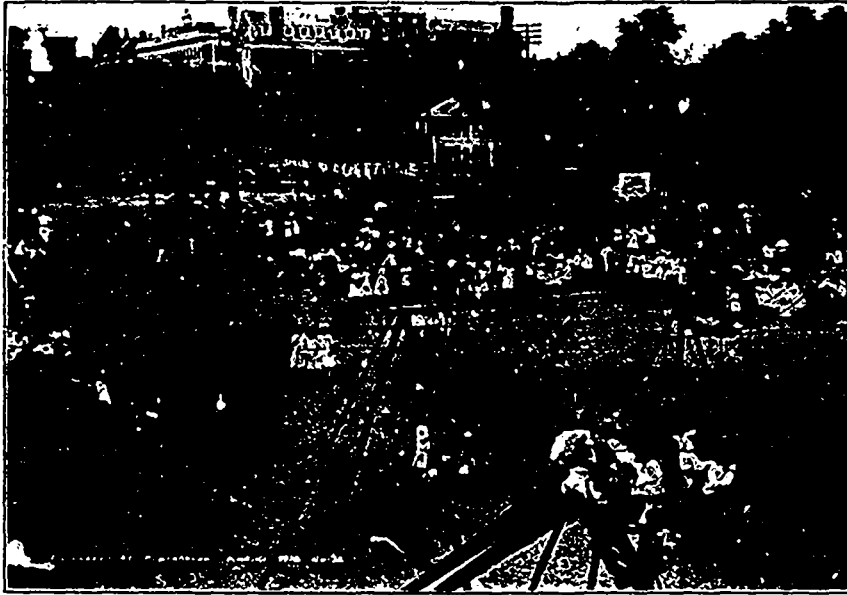
pleasure grounds. Wooded areas adjoining the town will, of course, be conserved, and park lands will be secured within its probable boundaries, as financial means will permit.

## THE PARK SITE

In selecting a park site attention should be particularly paid to the matter of its boundaries. It is a somewhat common error to neglect this. Where necessary to a complete picture, the whole of a hillside should be secured, the whole of a body of water, or the whole of a glen or ravine. The appearance of many parks is marred by an impression of incompleteness, brought about by the unnatural restriction and limitation of their boundaries. The park within the town will necessarily be bounded by streets, but on no account should its boundaries be built upon. Back yards as a frame to a park should not be tolerated. The park should be an aid to the town's beauty, instead of being concealed in the rear of buildings, however desirable.

## DEVELOPMENT OF SITE

The development of the park site involves a serious responsibility. It calls for the preservation of natural beauty, and the creation of that which should add its share of charm to the town's attractiveness. The location and topography of the site will, of course, govern to a considerable degree the treatment to be accorded it, but great care must be exercised in this, lest, in too great straining for ornamentation, the natural advantages which nearly every well-chosen area possesses be lost in the effort to improve, and an artificial and undesirable result be substituted therefor.



A Playground Festival, Elizabeth St. Playgrounds, Toronto

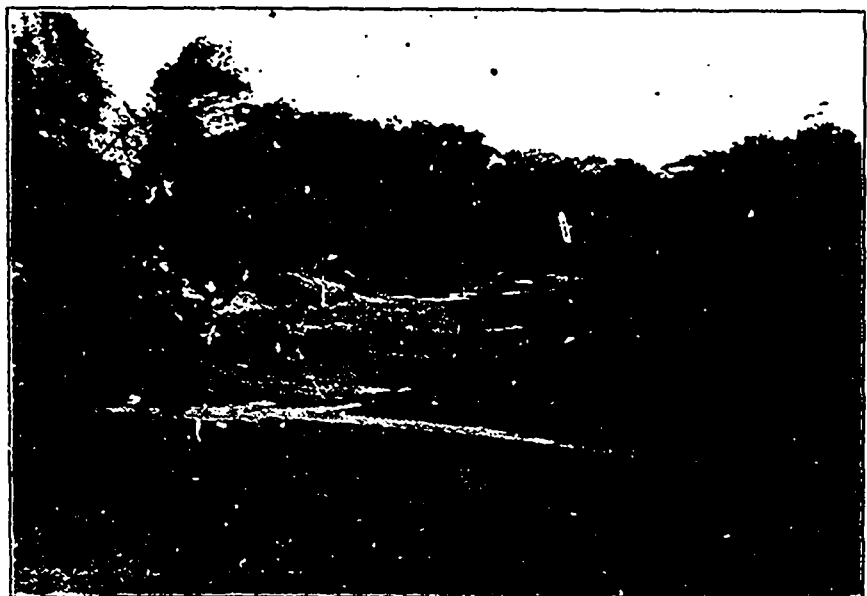
older cities we have examples of how rapid development and attending congestion have crowded out the open spaces which should have been preserved for the creation and enjoyment of the people. Railways and other undesirable features have been allowed to thrust themselves upon the lake or river front, despoiling it for ever of its natural charm and beauty, and robbing the city or town of its chief attractiveness, and areas which at one time possessed infinite possibilities in scenic value are pre-empted and needlessly destroyed for commercial purposes. There is no excuse for such conditions obtaining in the growing town if the lesson of properly planning for its development is learned in due season. With the wide world furnishing, as it does, a school in which this knowledge may be freely had there is no excuse for neglect to learn this lesson.

## PREPARATION OF PLAN

The early preparation of a comprehensive plan is the first step in the conservation of the features of natural beauty with which a town may be endowed or surrounded, and for the setting apart of areas for park and recreation purposes and the establishment of 'boulevards, playgrounds, squares, or open spaces. This plan will have largely in mind not only the town's needs of to-day, as evidenced within its present limits, but the

may have its proper complement of parks, squares, recreation grounds, and playgrounds, properly related in their location to the purposes to be served by them.

The most striking scenery of a district will naturally be reserved for park purposes, and especially the banks of a stream or the water front—where such exist. Waste or marshy areas may be profitably reclaimed and converted into



Recreation Area, Bellwoods Park, Toronto, Ont.

\*An address delivered at the recent annual convention of the Ontario Horticultural Association.





A Decorated Square, Exhibition Park, Toronto

Drives and pathways will be necessary to lead from point to point. These should be so arranged as to disclose along the way the most striking of a park's scenery and lead to points of greatest vantage. It is particularly essential that the roadways be good, if the popularity of the park is to be developed. Let at least the foundation for this be laid in their proper location, while the work of improving them is undertaken as resources will allow.

#### STORM SHELTERS

Where planting is necessary, it should be the aim to have this in accord with the surroundings, and it should be made with a view to its future effect on the landscape. Use largely native trees and shrubs, and do not make formal beds of flowers in natural parks—there is plenty of room for these in the town park or square. Water courses should be preserved, and where feasible, may be supplemented by artificially created lakes or ponds, stocked with water fowl. This may be made a most attractive feature in the park.

Certain buildings will be necessary in the park: shelters in case of storm, and booths where refreshments may be obtained. These, while being located in the most useful situations, should not be unduly obtruded upon the landscape, but placed where they will best harmonize with their surroundings. They should be simple in design and quiet in tone, for if we gain in the outstanding appearance of the building, we almost surely lose in the appearance of the park.

Gateways of proper character may be made a pleasing feature of the park plan, and serve to indicate the separation of the life of the town from the quiet restfulness to be found within the park.

A parks system is lacking in one of its essential features where the park areas are not linked together by suitable parkways or connecting links. It is a usual practice to omit parkways from the town plan until the thoroughfares which might have been used for that purpose are rendered more or less unsuitable by the laying of ill-placed pavements, sidewalks and boulevards; while, on the other hand, with a properly conceived plan, a street of even usual width might have a boulevard reservation sufficient to allow of a planting of shade trees and shrubbery which would serve to carry the park through from point to point in a pleasing and appropriate manner.

#### BOULEVARDS OR DRIVEWAYS

The boulevards or driveway, as differing from the parkway, will aim to give access to all points of special interest within driving distance of the town, and reaches of mountain, woodland, lake or river front will preferably be chosen for it. Land not being held for building purposes in the country traversed, it will be mostly available at low cost, making reservation for the boulevard feasible, from the financial standpoint, before the upbuilding of the country has interfered with its possibilities. Adjoining municipalities might well enter into a concerted plan for the acquisition and construction of the country boulevard, and thus secure to each the advantage of the linking up of their respective external driveways.

It is imperative that provision be made in every town for its adornment with open spaces or squares. Reservation should be made for these at important street intersections, in front of the railway station and public buildings, and in the residential district. These may

be furnished with fountains, monuments or ornamental lamps, or suitably planted, and lend much to the embellishment and attractiveness of the town, besides maintaining breathing spots where, as congestion increases, one may rest for a moment from the everyday stress and turmoil.

#### PLAYGROUNDS AND RECREATION AREAS

The supervised playground and the recreation area are among the most vital considerations in the life of a growing community, and it is the positive duty of every municipality to see well to it that every reasonable opportunity is taken to provide for the development of these features. The supervised playground, under the care of competent supervisors, and equipped with gymnasium apparatus, a swimming or wading pool, and a building in which are shower and other baths, and rooms which may be used during the winter for the instruction, enjoyment, and entertainment of the young folks, is an indispensable factor in their training for good citizenship, promoting, as it should, the development of the best qualities of body and mind. Locate the playground amid pleasant surroundings if possible. A relatively small part of a park will furnish the necessary accommodation, and the children will receive a lasting good impression through its elevating influence. If only a barren lot is available, plant the corners with shrubbery and flowers, and so bring to it something of beauty and refinement.

#### RECREATION AREAS

The recreation area is likewise indispensable, and here should be found facilities for the various summer games and winter sports, including baseball, cricket, football, tennis, skating and hockey rinks, etc., tending to the encouragement of a healthy outdoor life, and offering enjoyment, near at hand, to the toilers released for a time from the workshop, factory, or office.

The responsibility for the operation of the playground and recreation area should rest with a single organization, and should not be divided, as is commonly the case, between the school authorities, the town authorities or other bodies.

The carrying out of the phases of park development outlined will involve serious consideration on the part of the smaller town of the financial ways and means to that end, but with the needs of the situation fully recognized by its people, and with a plan of development determined upon, the raising and setting apart of a sum sufficient in each year to forward at least some part of its features should not be a task beyond those earnestly striving towards the ideals of a progressive municipality.

# The Gardens of Bagnell Hall

T. S. Hall-Abell, B. Sc., Cobourg, Ont.

**A**MONG the many folk that, from lands afar, come to Cobourg for rest or pleasure, for scenery or superlative ozone, there are very few who do not visit and admire the beautiful gardens of Bagnell

any rate, the work was a complete success, and not one of the trees thus planted succumbed.

Looking east one sees part of the garden in figure two. This view was taken from the tennis court.

of this, but not showing here, is the bowling green, where one might

Sit and dream the hours away

While Raleigh and his Captains play;  
The time they wait for Spain.

It seems almost impossible that such a complete transformation, of which only a most incomplete account has been given, could have been effected in so short a period; and any visitor to Cobourg possessed of a desire to see the "garden beautiful," should certainly not miss the opportunity of paying a visit to Bagnell Hall and its gardens. It is one of the beauty spots of Cobourg, and this is saying a great deal, as Cobourg itself is one of the beauty spots of Canada.

## Utilizing the Small Greenhouse

By Henry Gibson, Staatsburg

A popular plant that is easily grown, likes a comparatively cool temperature, and is perhaps as serviceable as anything that an amateur can grow, is the cyclamen. The one drawback to growing these plants is the length of time it takes them to reach the flowering stage. From twelve to fifteen months is required to produce a good specimen. Seed should be sown in August or September in pans of light, sandy soil, and kept growing right along for flowering the following autumn and winter. As soon as the seedlings appear, place them near the glass so that they do not get drawn, and when large enough to handle, prick off several into a six-inch pot. In the spring they may be potted singly into three-inch pots and grown in a cold frame all summer, with plenty of air, after becoming established, and shade enough to prevent bright sun from reaching them. By July they will require shifting into five or six inch pots, in which they will flower, and an extra good specimen would be better placed in a seven-inch pot. Good drainage must be ensured and a compost used of



Bagnell Hall: Front Approach, Showing Porte Cochere and Elms planted only three years ago—Fig. 1

Hall, the residence of Willis F. McCook, Esq. Surely this gentleman—who is widely known, being a prominent Pittsburg barrister—can truly say as did the Roman warrior of old, "Veni, vidi, vici."

He came.

He saw—a brickyard—a claypit—a mangold wurtzel patch—and by the all-powerful compound of brains plus brawn, he turned this place of ashes and brickbats into such a garden as one sometimes dreams of—old courts scented with sweetbriar and roses—shady nooks and nodding hollyhocks—a bowling green that Sir Francis Drake might have played upon, and in the centre of all a residence such that the most exacting critic cannot find the wherewithal to criticize.

He conquered.

His coming was in 1909. In October of that year work was commenced under the watchful eyes and to the plans of well-known landscape architects. A general idea was given to them to which to work; other than this, a free hand was theirs.

In figure one, one sees the driveway from the old Kingston Road about half a mile east of the Cobourg Post Office. This leads in a graceful curve up to and through a Porte Cochere, below and adjoining the south-west tower.

Notice the elms on either side of this drive. They were planted less than three short years ago by means of the misnamed tree-planting machines. At

Figure three shows the beds for cut flowers—on the left front where bloom asters, verbenas, gladioli, and roses. The ribbon border on the right of this picture was picked out with red and white geraniums and blue lobelias. One is thankful that a combination of red, white and blue is correct in Canada as well as in the United States of America.

Looking west and to the right of the drive may be discerned a small brick building. This is the one remaining vestige of brick kiln days. It is the hut in which the men's implements were stored.

The interior courtyard shows up well in figure four, the decorative effects being done in Roman Stone. To the left



Bagnell Hall from the Tennis Court, Looking East—Fig. 2



Bagnell Hall Looking West, Showing Ribbon Border and Cut Flower Beds—Fig. 3

equal parts of loam and leaf soil. Never use all rank manure.

The roots of cyclamen proceed from the fleshy rootstock or corm, and this should be about half-covered in potting, leaving the top roots, whence the leaves develop, clear. The after-culture consists of keeping the plants at all times in a light, airy place, and as near the glass as possible to prevent drawing and consequently weakening. Shade in bright weather only and syringe on fine

days to keep the plants clean and encourage growth.

Cyclamen may be grown on a second year by drying moderately and resting for a time, afterwards reducing the soil about the roots and repotting. They should receive similar treatment as that suggested for young plants, but the flowers are generally earlier and smaller the second year. It is not advisable to save plants after this age, as young stock is far more satisfactory.

## My Favorite Flower--The Sweet Pea\*

J. H. Wills, Mitchell, Ont.

**E**ACH year I plant my sweet peas in the same place along by a wire fence on the west side of my garden. The ground is clay loam and well drained. In the fall, after the old vines have been pulled up, I throw out the earth about ten to twelve inches wide and one foot deep. I then put in fresh earth, giving it a good coating of well-rotted manure and mix it thoroughly. Later on, before it freezes for the winter, I throw this earth outside of my trench into a ridge, keeping it as lumpy as possible so as to let it get full the advantage of the frost.

My experience has taught me that the earlier you get the seed planted the better bloom you have, and the flowers bloom for a longer period. As soon, therefore, as the ground is ready to work, I clean out the trench and put in about two inches of good manure. This is dug into the subsoil. On top of this I put about five inches of the prepared earth and then plant my seed, planting them in double rows. The seed is sown four to six inches apart and covered with about two inches of earth. This is pressed down with the hoe. As the vines grow up I gradually draw more earth around them till it forms a slight ridge about two inches higher than the surrounding earth, leaving a shallow

trench along the row for watering purposes.

My sweet peas are planted where they get lots of sunshine and plenty of fresh air, and I try to keep the soil cool and moist, but not wet and heavy, as this would cause a weak, yellow vine, and they would not get a good growth. As mine are well drained I always have a strong, healthy, tall vine.

For supporting the vines I prefer for a trellis a six foot wire netting. The

netting is put in place when the vines are two or three inches high so that the vines can get early support. The netting is left about two inches from the ground.

To help retain the moisture, keep the soil around the vines fine, and especially after heavy rains. Cultivate about two inches deep. This lets in the air and helps keep down the weeds. You cannot have the best flowers and weeds.

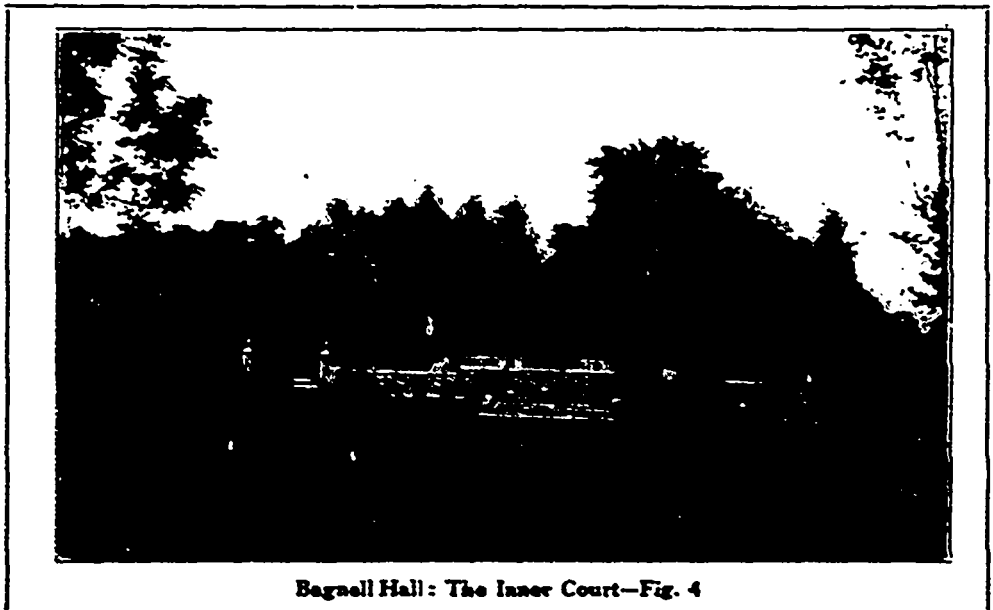
If the plants need watering give them a good soaking at least once or twice a week, as that is better than a sprinkling every night. I always water at night as I am away early in the morning. Water with a rather weak liquid manure, putting the liquid in the trench along the vines.

If the weather keeps dry and hot, spray the under part of the foliage with cold water or soap suds to keep down red spider and aphids.

When cutting the flowers pick them every day. Pick every flower that has all the flowers on the stem in bloom. Do not allow seed-pods to form if you want long continuance of bloom. Select certain plants for seed purposes.

To prolong the season of bloom, pick off the tops of the plants. They will then branch out again. If after a long period of blooming the flowers become small and the stems short, prune the vines. This brings longer stems and larger flowers.

If you decide to save your own seed, pick out the sturdiest vine, cut the poorest flowers, and save the seed from vines having a long, strong stem with three or four flowers to a stem. When they are ripe pick the pods and save the largest seeds. The smaller seeds are at the end of the pods. Discard these. By this method I have had stems sixteen to eighteen inches long and flowers two inches across.



Bagnell Hall: The Inner Court—Fig. 4

\*This article won the third prize in the essay competition on "My Favorite Flower and How I Grow It."

# New Year's Plans for Next Summer's Garden

Henry Gibson, Staatsburg

**W**ITH the advent of the New Year, most of us resolve that we are going to do something more satisfactory, or should I say accomplish something which comes nearer to our ideal, than we achieved during the year that is just past. To make such a resolution materialize is no mean accomplishment, and particularly is this so with gardening. This garden business is very much in the nature of a race—a race against conditions, weeds, insects, and last but not least, against time. If we only had time enough in spring, summer, and autumn, what a splendid garden we could have. But our time is always too short. The only way to get ahead is to save time in every possible way, and if you have resolved to do this and start to do it now, you have decided upon something well worth while. Anyone who intends having a garden, even if only a small one, and who wastes time, even in mid-winter, is accepting a severe handicap.

There is no greater saver of garden time than the planting plan. It means that when things open up in the spring every minute can be put into actual work, and that everything needed—seeds, plants, fertilizers, and so forth—will be on hand and in proper quantities. Thus there will be no waste of time or materials. More than this, it means vastly better results.

Perhaps you have not done anything as yet to improve your place, beyond keeping the front lawn cut and planting a few vegetables. Even so, if you only have a piece of ground twenty by twenty feet, make a plan of it now. This should be drawn to scale, using a T square and triangle for convenience, and should indicate the space for and amount of each vegetable wanted. Plan to have such vegetables as onions, beets, and carrots, which remain in the ground all the season, in one section as far as possible, and tall-growing ones, as corn, north of the dwarfier kinds, in order to avoid undue shading.

In preparing your plan, make careful use of the seed catalogues. The new ones will soon be out. Study them thoroughly, but be careful in the choice of novelties, as they may not be adapted to your locality. Try out a few, but go easy.

If you have no regular flower garden, devote part of the vegetable garden to flowers, or better still, mark off a long narrow bed or border along some path. Even if it means less vegetables, have a few flowers. Some of the choicest annuals and perennials are as easily grown as carrots. You can start them yourself with your early vegetables in the house or in a hotbed.

The hotbed should be got ready towards the end of the month. A few hours' work will see it an accomplished fact. Select a warm, sunny, sheltered position on the south side of the house or some outbuilding. Clear the ground off level, and if it is not frozen too hard, dig it out to the depth of a foot or eighteen inches, six feet square. This will give room for two three by six standard size sash, which you can buy either glazed or unglazed for a few dollars.

The frame you can easily build yourself or have someone do it for you. Make the back six inches higher than the front. Ordinary three-quarter-inch boards, supported by three by three posts and banked on the outside with rough manure, are all that are required, and the labor is slight when one considers the advantage of having a garden six weeks ahead of time.

Into the frame place the heating material, twelve to eighteen inches of stable manure. Some persons make a practice of taking the manure directly from the pit and using it. A far better way is to take a sufficient quantity, and build it into a square heap. This should be wet, but not soaked, while being put up. After the lapse of a week turn it, and build it up into a heap again, putting the "outside inside" as much as possible. After a few days, put this into the frame, tramping it down well, then cover with about four inches of good rich garden loam.

If you have your soil protected from frost in some convenient place, you will be saved the none too pleasant task of thawing it out over the furnace. When the temperature of the bed has receded to seventy degrees Fahrenheit, as indicated by a thermometer plunged into the soil, the seeds may be sown.

In the greenhouse, January is a busy month. Towards the latter part of the month the first sowings of early vegetables will have to be made. Stock plants should be given more heat and moisture to start new growth for propagating purposes.

Tomatoes that were sown in December, for early fruiting indoors, will now need repotting preparatory to being put into the beds or fruiting boxes. Cucumbers should be brought along to follow the last crop of lettuce, which should now be in the beds. If you are short on pansies start more now, and sow seeds of annuals for setting out in the spring.

If you are desirous of prolonging your display of bloom indoors next spring, start a batch of tuberous begonias now. There are many excellent varieties of these persistent blooming plants that may be purchased at a nominal cost. Start the tubers in boxes (flats) of sand and leaf mould, keep them warm and moist, and after the first watering damp rather sparingly until the young growth appears. Pot them into suitable sized pots (preferably two and one-half or three inch) before the shoots become too far advanced, using a light but rich compost, made porous by the addition of plenty of sand. Continue to pot them on as they permeate the soil with roots, until a six or seven inch size is reached. In these they should be allowed to flower. Feeding with liquid manure or some approved fertilizer is advisable at this stage if the best results are to be obtained. Don't, however, overdo it. Once a week or every ten days is quite often enough to apply stimulants. Once started and growing well, tuberous begonias succeed best in a comparatively cool house, fifty two degrees at night being sufficiently high.



Note the Floral Effect in Connection with this Modest Home, that of Mr. and Mrs. Wm. Knapton, London, Ont.

# Types of Greenhouses for Vegetable Culture\*

S. C. Johnson, B. S. A.

**V**EGETABLE growing under glass is becoming one of the important features of agriculture. The demand for more vegetables during the winter months is necessitating building more houses to grow such crops as lettuce, tomatoes, and cucumbers. The market is large and prices good, and the main point which the growers are trying to overcome is that of cost of production. The improved methods of growing and the improved forms of construction are cutting this down considerably. The following points are those which interest the prospective builder, and which may prove of some value:

## SITE

The selection of a suitable location for a greenhouse plant demands careful consideration. The progressive grower looks ten years ahead and works toward that end by building in an economical position, using good materials and grows produce of good quality which assure him an increase in trade. The first point which he should consider is location.

Long hauls of fuel and supplies cut down profits, and in locating a greenhouse plant the proximity to a railroad should be carefully considered. A man seeking a fresh location should select one close to a railroad, either steam or electric, which hauls freight. Nowadays the growers instal a siding and arrange their coal chutes so that the handling of coal is minimized. One handling is sufficient where a siding is used and no hauling is necessary. Some growers erect a trestle work so that the coal is simply dumped into the coal hoppers. Coal is one of the largest items of expense which the growers have annually to contend with, and anything that can be saved in its handling adds so much to the returns from the plant for the year. If a distant market is to be supplied in the future, shipping facilities should also be looked into and possibilities of quick transportation either by express or freight considered.

## POINTS TO CONSIDER

The grower who already has his land and is now ready to build should consider the following points and build accordingly. Ample means of drainage should be obtained and cold, wet spots avoided. There should be no possibility of spring floods ever reaching the houses, as was the case in several houses in the United States this past season where the crop was totally destroyed. Again the house should not be located in the direct line of drainage of any tract of land, for trouble may occur.

If the houses are to be erected in the path of the prevailing winds, windbreaks of some description should be provided to break the force of the wind from a direct blow on the glass. Greenhouse vegetable growers are realizing the value of the windbreak more than ever before, and are securing shelter by means of high light board fences, clumps of trees, and by planting rows of quick growing trees. If windbreaks of trees are used, the houses should be sufficient distance away from them that there is no danger of falling limbs.

In selecting the site for his first house the grower will do well to erect his house so that he can either add to it or have plenty of room for adding more houses in a line with it. The house first built should be of a size which can be duplicated right alongside of it. Many of the largest growers in the United States started some ten years or more ago with one small house, but at the same time laid out their ground so that they could expand and cover a certain area economically if the first venture proved a success. Some now have five, six, and ten acres under glass, with houses of the same length, and all joined by a main alley. No tearing down and rebuilding of houses was necessary, as each additional house went into the place left for it at the start.

## FOUNDATIONS

The question of foundation is the next point to confront the builder. Cement blocks, solid concrete, wooden sides with a shallow concrete base, are common. Solid concrete is generally used by growers. The walls are made eight to twelve inches in width, and are set in the ground to a depth of from eight inches to two feet as the grower sees fit, or the form of construction requires. The solid concrete is usually made in the proportions of six by one, and care is taken to keep all stones from the outside face in order to give an attractive and clean cut appearance to it.

Concrete blocks are rapidly coming into favor for the sidewalks of a greenhouse, and a good appearance is given by their use. The main point about blocks is that they should be so moulded that they will fit the wall posts or lone supports and not cause any extra cutting. In many instances these blocks were made by the growers during the winter months. They are made in all lengths, but the most common I have seen were sixteen inches by eight and eight. The cost of materials for a block this size is estimated to be twelve cents. The price of lumber has risen so much during later years that it is advisable to build as much of the foundation of concrete work as is possible. The upkeep for cement

work is practically nothing, and a good solid, lasting job is made at first.

It is advisable in houses where benches are to be used to leave doors along the side walls whereby earth may be thrown out or in. In smaller houses where no side ventilation is thought advisable, these small doors should be put in in the cement work for convenience.

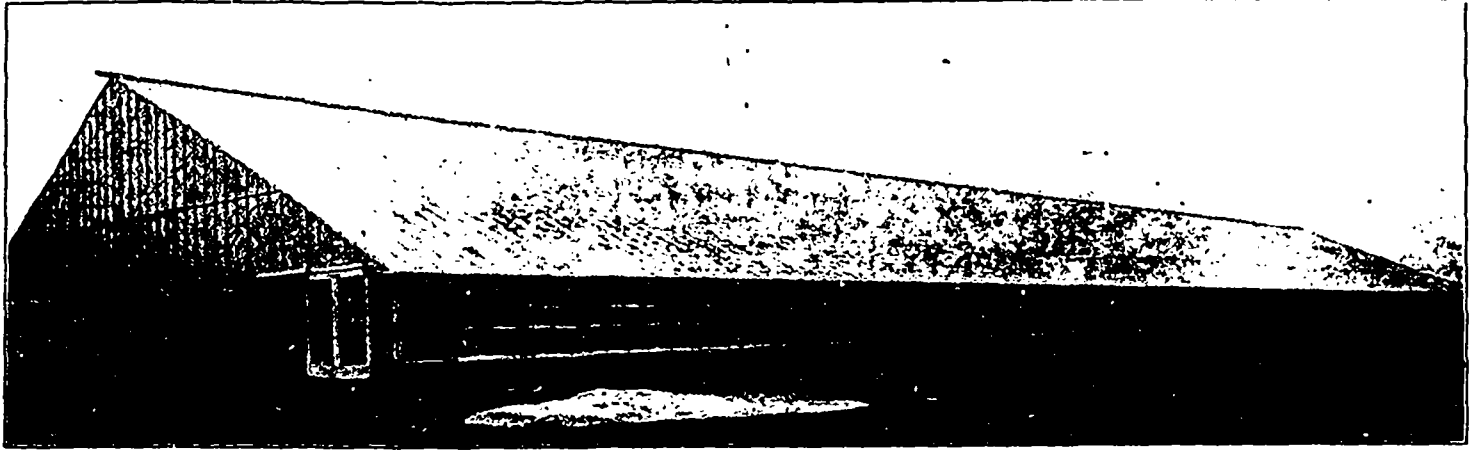
## JOINED OR SEPARATE HOUSES

Opinions of various growers in different sections differ as to which type of house is the better. Each has its own supporters. Some prefer the joined houses and others as emphatically assert that they could not grow half the crops they are now doing if they had to use joined houses. In sections where land is very valuable joined houses will cover all available land space and returns can be had from practically every inch. Connected houses cost less in the initial cost than separate ones, although the upkeep expenses are greater for them. Separate houses afford an easy control of side ventilation. Growers now realize the importance of this for their crops in late fall and early spring; in fact, their use is spread over the whole year. Side ventilation can be secured and controlled satisfactorily in the separate house, while in the joined house side ventilation is not so readily received when there are several houses in the range. Separate houses also give more light to the crop owing to the increased amount of glass, and with these houses the least amount of shading is received by the plants owing to the distance from the ridge of the next house.

Separate houses are usually built with a wider span, and while this does not use more glass than two joined houses the same width, the volume of air is increased, improving conditions for the plants. Some growers who have connected houses have had trouble with snow lodging at the gutters and breaking the glass on the roof. This is overcome in the separate houses, and no trouble has occurred where iron cane plates have been used. These seem to be the main points about the separate and joined houses, and there seems to be no question as to which it is advisable to build.

Where land is not too high in value it is best to select a good construction and build separate houses and connect them up by an alley house at one end or in the centre. In some plants this alley house is built large enough to accommodate beds or benches for growing young plants, and there is no waste room. With the separate houses the land between can be utilized by the growing of such crops as staked tomatoes, corn, cucumbers, or squash, and more

\*Extract from an address delivered at the recent Annual Convention of the Ontario Vegetable Growers' Association.



The Leamington District, Ontario, Has Long been Noted as a Great Vegetable Growing Section. The Vegetable House Here Shown, one of the Largest in the Dominion, has Recently been completed by R. H. Ellis, Leamington, Ont.

often hotbeds and cold frames are placed in it. In one case a permanent crop of rhubarb was giving good returns annually, in another an arrangement for forcing rhubarb in spring was in use, but the returns from the former method were larger.

#### WIDE HOUSES

The tendency seems to be to build one wide house to take the place of the two or three of narrower widths that were commonly built some fifteen years ago. The day is here when wide houses are being built by progressive growers. The twenty feet house of a few years ago is being replaced by thirty-five and forty feet houses. All of the newest additions to extensive greenhouse plants are being made with wide houses, and it is evident that the wide house has come to stay. It is quite common to see seventy-five feet houses in course of erection, and some are wider than this, running as wide as one hundred and twenty-five feet.

#### SAVING LABOR

Growers agree that the only way to overcome the labor problem is to use more horse-drawn machinery in the houses, and the wide house permits all operations of horse cultivation. Gable ends are so arranged that waggon loads of manure may be hauled in as if the field were simply enclosed with glass. Plows and harrows are then used to cultivate.

Wide houses are of necessity higher at the ridge. This gives an increased volume of air above the plants, and the atmosphere will not undergo such sudden changes as in the houses which are not so high. It may take somewhat longer to heat the wide house, but once it is heated it will be more satisfactory, as the temperature changes more gradually owing to the large volume of air. Tomatoes and cucumbers suffer a check easily from a lowering of temperature, and in the wide house this condition may be easily prevented.

Growers have told me everywhere that it takes less fuel to heat a wide house

than it does a range of two or three narrow ones making the same width. These houses also allow more light to reach the plants from the increased length of the sash bar and the glass sides which are usually built from six to eight feet above the grade lines. Full length side ventilators are being used and the whole side is of glass. Plants can be grown close up to the side walls, and all available spaces can be put under cultivation. The question of what is a suitable width must be answered by the grower himself. Judging from houses visited last summer, the prevailing width seems to be seventy-five feet, but a considerable number of forty feet houses are also being built. There are very few wide houses in Ontario, but they are beginning to become more popular, and growers never regret building the wide house once they have it up and have obtained a crop from it.

The high eaves and the increased ventilators have made the growing of cucumbers more simple and the vines can now be planted close to the eaves, as there is plenty of head room. Lettuce can be grown successfully on the solid beds and practically no land wasted. Some growers may raise the objection that they may not want a house so large for one crop or they may want to grow two crops which demand temperatures which are different. This difficulty has been overcome by one firm, and is accomplished by the building of partitions where required. This and the arrangement of their heating plant has given them what they require and yet they have the wide house. In short, the advantages of the wide house are:

First, atmospheric conditions can be better controlled.

Second, less heat is needed in a wide house.

Third, more light is received by the plants in wide houses.

Fourth, plants grow to marketable size without danger of a check.

#### Vegetable Pests\*

A. H. MacLennan, B.S.A., Guelph, Ont.

Two very important troubles of the market gardener are celery blight and the maggots which attack onions, cabbage and radish. Late blight of celery (*Sep-toria Petroselin*), appears first as rusty brown spots on the outer leaves. These gradually spread under favorable conditions until the leaf dies. The spots will also be found on the stems. A season of warm, moist weather is most suitable for its spread, and it will also appear in the storage house. It can be prevented by the use of Berdeaux mixture if applied at the right season. Our work here the past two years has shown that if we wish to grow celery at a profit, we must spray often and thoroughly.

Cabbage, onion and radish maggots are the larvae stage of two winged flies almost identical in appearance. The adult appears generally about May fifteenth till June fifteenth. The eggs are laid close to the host plant and are hatched in three to ten days time. The worm which hatches being without wings or legs, is helpless unless against its host plant. For the cabbage maggot the tarred felt paper disc is a sure cure. For the onion and radish maggot no sure cure has been found. Carbolic acid wash and kerosene and sand have been used. As a Vegetable Growers' Association we should try to have these tested commercially. In each branch of the Association where the crops are grown, a demonstration could be carried on to show the results obtained from such treatment.

For early celery, for cutting in August, the seed should be sown about the middle of February. It should be sown on a greenhouse bench, in flats or in a hotbed; if sown in a greenhouse it should be on the shady side of it.—F. F. Reeves, Humber Bay, Ont.

\*Extract from a paper read at the recent convention in Toronto of the Ontario Vegetable Growers' Association.



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boro (not called for at the Post Office) 25 cents
extra a year, including postage.

3. Remittances should be made by Post Office
or Express Money Order, or registered Letter.

4. The Law is that subscribers to newspapers
are held responsible until all arrearages are
paid and their paper ordered to be discontinued.

5. Change of Address—When a change of ad-
dress is ordered, both the old and the new ad-
dresses must be given.

6. Advertising rates, \$1.40 an Inch. Copy
received up to the 20th. Address all advertising
correspondence and copy to our Advertising
Manager, Peterboro Ont.

CIRCULATION STATEMENT

The following is a sworn statement of the net
paid circulation of The Canadian Horticulturist
for the year ending with December, 1911. The
figures given are exclusive of samples and spoiled
copies. Most months, including the sample cop-
ies, from 13,000 to 15,000 copies of The Canadian
Horticulturist are mailed to people known to
be interested in the growing of fruits, flowers
or vegetables.

Table with 4 columns: Month, 1913, 1912, 1911, Total. Rows include Jan, Feb, March, April, May, June, July, and Dec-ember.

Table with 2 columns: Average each issue in, 1907, 1908, 1909, 1910, 1911, 1912, 1913.

Sworn detailed statements will be mailed
upon application

OUR GUARANTEE

We guarantee that every advertiser in this
issue is reliable. We are able to do this because
the advertising columns of The Canadian Horti-
culturist are as carefully edited as the read-
ing columns and because to protect our readers
we turn away all unscrupulous advertisers.
Should any advertiser herein deal dishonestly
with any subscriber, we will make good the
amount of his loss, provided such transaction
occurs within one month from date of this issue,
that it is reported to us within a week of its
occurrence, and that we find the facts to be as
stated. It is a condition of this contract that in
writing to advertisers you state: "I saw your
advertisement in The Canadian Horticulturist."
Rogues shall not ply their trade at the expense
of our subscribers, who are our friends, through
the medium of these columns; but we shall not
attempt to adjust trifling disputes between sub-
scribers and honorable business men who ad-
vertise nor pay the debts of honest bankrupts.
Communications should be addressed
THE CANADIAN HORTICULTURIST,
PETERBORO, ONT.

EDITORIAL

DEATH OF ALEXANDER McNEILL

In the death of Alexander McNeill, Chief
of the Dominion Fruit Division and a
former president of the Ontario Fruit
Growers' Association, the fruit growers of
Canada have lost one of their staunchest
friends, warmest advocates, and greatest
benefactors. First as a practical fruit
grower, next as a farmers' institute
speaker and officer of the provincial fruit
growers' association, and of late years
as Chief of the Dominion Fruit Division,
Mr. McNeill has been a leader in all move-
ments for the uplift of fruit growing in
Canada.

The late Mr. McNeill was one in whom
the element of selfishness was lacking.
The public weal always took precedence
with him to his own welfare. Again and
again he allowed his own interests to
suffer in order that those of the fruit grow-
ers and of his friends generally might be
promoted. His neglect to take due precau-
tions in regard to the care of his own
health while he was engaged in his official
duties was largely instrumental in bring-
ing about sickness which ultimately led
to his death.

The spread of cooperation in the fruit
industry of Canada, but more particularly
in Ontario, is due in a large measure to
the earnest efforts of the deceased. Many
years ago Mr. McNeill pointed out the ad-
vantages of cooperation, and later wrote
various bulletins dealing with cooperation,
which were exhaustive and practical in their
treatment of the subject. These have had
a wide circulation. A recent bulletin by
him entitled "Modern Methods of Packing
Apples and Pears" is the best of the kind
that has ever been published in Canada,
and one which compares favorably with the
best issued in any country. The fruit crop
reports that have been issued of late years
by the Dominion Fruit Division with much
benefit to fruit growers were the result of
his efforts.

Mr. McNeill accepted office with the
Dominion Government about the time the
Fruit Marks Act was being brought into
force. Much of the credit for its success-
ful working is due to his earnest efforts
on its behalf. The great success of the
last two Dominion fruit conferences also
were due in a large degree to the careful
preliminary work of Mr. McNeill. His
death has created a vacancy in the ranks
of our fruit growers which will long be
felt and deplored.

THE HIGH COST OF LIVING

One of the enigmas of our day is the
solution of the problem involved in dis-
covering the reason or reasons for the in-
creased cost of living. Learned authorities
have advanced various and sundry explana-
tions that do not seem to satisfy the
public. In the meantime the cost of living
continues to advance.

Sir Wilfrid Laurier claims that it is due
to the tax on foodstuffs, and hopes to
climb back into power by advocating a
reduction in the tariff on such articles.
His remedy, would benefit the consumer to
some extent but very little. This is proved
by the fact that in spite of the reductions

that have been made in the United States
tariff, the problem has not been solved in
that country.

One of the main reasons, in our opinion
the main reason, is found in our increas-
ing land values. This tendency of land
to increase in value is apparent in all
countries as is also the increase in the
cost of living.

Three factors enter into the production
of material necessities. Land, labor, cap-
ital. Land receives its return in the form
of rent, labor in the form of wages, and
capital in the form of interest. If any one
of these factors receives more than its fair
share the other two of necessity receive
proportionately less than their just dues.

All wealth, including food and clothing,
is produced out of the land. Anything that
makes it difficult for the people at large
to produce wealth from the soil, restricts
to a corresponding degree, the production
of those things which the people require
to maintain life. The tendency of land to
increase in value has this effect.

Wherever land is high in value it is
difficult for people to acquire its control
or to pay the rentals demanded for its
use. Thus production is restricted. In
Ontario, for example, there are hundreds
of thousands of acres of good fruit and
farm land that are not being worked be-
cause they are being held at values which
are just high enough, when other factors
are considered, to keep them out of the
reach of those people who would be glad
to use them were there better reason to
believe that they could be worked with
profit. Anything which will help to bring
this land into use will immediately tend
to reduce the cost of living to a corre-
sponding extent. The reason there are
over fifty thousand less farmers on the
farms of Ontario to-day than there were
ten years ago is because farm land on
the average is so high in value farmers
have found that they could not earn from
it enough to allow themselves a fair in-
terest return for their investment and wage
return for their labor. Therefore, they
have preferred to sell their land and in-
vest the proceeds in other ways. In con-
sequence, production has been decreased,
the cost of living has increased, and people
do not seem anxious to try and bring into
cultivation the land which has been thus
discarded. This feature of the situation
should receive due consideration whenever
the high cost of living is under discussion.

THE FRONT LAWN PROBLEM

Most of us like to keep our front lawns
in the best possible condition. Most of us
also, who live in the larger towns and cit-
ies, have to contend with serious difficulties
in the achievement of our desire. These
very often take the form of postmen, paper
boys, and messengers, who persist in walk-
ing across our lawns and cutting corners
whenever they think that they are not likely
to be detected in so doing. The officers
of the horticultural societies in Ontario
might accomplish a good work by dealing
with this situation. A protest made to the
postmaster, to the newspaper offices, and
other agencies which employ such offend-
ers, would soon tend to bring about an
improvement, especially if followed up
vigorously upon the committal of second
or third offences. Were members of hor-
ticultural societies encouraged to report
such incidents, improvements would soon
become possible. If necessary, by-laws
might be passed by our different municip-
alities which would make it more easy to
deal with offenders.

The suggestion of Sir Wilfrid Laurier that the tariff on foodstuffs, including fruit and vegetables, should be reduced in order to benefit the consumer is not likely to meet with the approval of our producers. Sir Wilfrid has not made any suggestion that the duty should be taken off insecticides and spraying materials, off spraying machinery, fruit baskets, and a hundred and one other articles required by the average fruit and vegetable grower in the production and marketing of his crops. Were the duty to be lowered on fruit and vegetables and not on these other articles, our producers would be placed under a tremendous handicap, as compared with the producers in the United States, and these industries in Canada would soon show the effect of such a policy. Sir Wilfrid Laurier will show more of the qualities of a statesman when he takes all such factors into consideration, and not just those that are likely to meet with approval by the consumer.

At the time of the recent annual convention in Toronto of the Ontario Horticultural Association the suggestion was advanced by one of the delegates that the Department of Agriculture should send out speakers to meetings of horticultural societies as is done in the case of Farmers' Institutes. The superintendent of horticultural societies should follow up this suggestion more thoroughly than has been done in the past. With proper encouragement more societies might be induced to engage speakers than have yet done so, and a better arrangement of dates could be effected. What has been done in a more or less haphazard way hitherto, might be systematized with advantage to the department, and to the societies concerned.

**PUBLISHER'S DESK**

Our front cover illustration shows the interior of the magnificent conservatory in the private residence of Sir Montague Allen in Montreal. It reveals the comforts and pleasures which may be derived from a home conservatory. We would that all the readers of The Canadian Horticulturist who delight in having flowers in their homes might have similar conservatories.

The year 1913 proved the most successful in the history of The Canadian Horticulturist. This encourages us to anticipate even better things for 1914. Well we realize that the paper which is not better today than it was a year ago is falling behind in the race. Therefore, it will be our aim to make The Canadian Horticulturist during 1914 stronger and better in every way than it has been hitherto.

The February issue of The Canadian Horticulturist will be our Third Annual Spraying Number. It will include a special front cover, which will be in harmony with the issue and an attractive feature in itself. The articles and illustrations will give special emphasis to spraying. They will be furnished by some of Canada's leading authorities. Watch for this issue. It will be a particularly good one.

The February, March, and April issues of The Canadian Horticulturist are always crowded with advertising. Every year we find it difficult to give those advertisers whose copy is received late in the month

as advantageous positions as we otherwise might. Advertisers are urged, therefore, to prepare for this issue and to cooperate with us by forwarding the copy for their advertisements as early in the month as possible.

May the year 1914 be crowded with blessings for the readers of The Canadian Horticulturist, is the wish of its Publishers.

**SOCIETY NOTES**

**Plant Registration**

At the recent convention in Toronto of the Ontario Horticultural Association, the committee on "Names and Varieties" suggested the inauguration of work in connection with an official registration of plants, which it was pointed out will need the support and cooperation of kindred societies. The work of preparing lists giving the correct pronunciation of " " is frequently mispronounced had been continued and a commencement made on a series of lists giving the most generally accepted English or Common names of popular and desirable plants. Progress had been made also in the preparation of a series of lists giving various common terms used in plant nomenclature, together with the meanings of such names. The report was signed by Messrs. H. J. Moore, of Niagara Falls, and by Mr. F. E. Buck, of Ottawa.

Mr. C. W. Nash of Toronto gave an entertaining talk on "Wild Life About the Home."

**Weston**

The Weston Horticultural Society has had the most successful season in its history. Great interest has been taken in the lawn and flower competitions, and in many respects the appearance of the whole town has been transformed. In presenting his report to the society, S. A. Frost, of Toronto, who judged the competitions, said in part:

"During the past three years the improvement in the lawns, gardens and flowers of your town has been most marked. When in 1911 I judged the gardens, I saw some very nice ones and a few that were fair. In 1912 I noticed a great improvement. The lawns were cleaner, the grass was better grown, the edges were more neatly cut, and the surroundings improved. This year I have noticed a still greater improvement. Many lawns have been reseeded and are just like velvet. Although we have had a drier season, they have been better watered. Weeds have been kept down and flowers have been better arranged. The asters were fine. I have seen some asters in Weston better than I could buy in Toronto.

"This shows what the Horticultural Society has done for Weston. If we could only show other towns what an improvement can be made when a few people take an interest in their gardens and surroundings, what a lovely country we would have. Members, get busy! Hustle up some more candidates for the W.H.A. Get them interested in prize gardens. Push the good work along and make Weston worth while!"

**Ottawa**

Last summer there were one hundred and eighteen entries in the garden competitions inaugurated by Her Excellency Lady Grey, and now continued by the Ottawa



J. H. Bennett, Barric, Ont.

President, Ontario Horticultural Association.

Horticultural Society. Greater interest than ever is being shown in the work. A garden that has often been a prize winner is that of W. G. Black. Year after year it has been praised by the best judges of floral displays who have visited this city. A. G. Acres was the winner of the first prize for verandah effect. Some beautiful palms formed a suitable background for the various other splendid collections of flowers. Wm. Holtz, who this year exhibited for the first time, was much surprised when he learned that he had won first prize for box of flowers not exceeding five feet.

A garden that presents a splendid appearance from the street is that of Mr. J. B. Spencer. The garden of Mr. Wm. Graham is a fine example of what can be accomplished within a limited area. That the backyard can be made as attractive as the front lawn is the belief of Mr. C. A. Glendennin. The beautiful garden in the rear of Mr. Glendennin's residence is ample evidence that he has made his ideal a reality.

**Berlin**

That the citizens of Berlin appreciate the work that is being done by the Berlin Horticultural Society is evidenced by the interest which they take in the workings of the Society, the membership of which now numbers two hundred and eighty. The lawn and garden competitions are open to all. Last year the rivalry was even keener than ever.

On August 27 and 28 a most successful flower show was staged in the market building. Eighty-nine exhibitors showed over one thousand entries. The receipts from admission were one hundred per cent. ahead of last year's record. More prize money too was paid out—over four hundred and fifty dollars in all. During the season several lectures on gardening, which were open to the general public, were given in the hall of the public library.

The Canadian Horticulturist — It is strictly high-class, and I prize it very much.—Geo. E. Falconer, Port Elgin, Ontario.



# Ontario Fruit Growers and Transportation Problems\*

G. E. McIntosh, Forest, Ont.

A YEAR ago your Transportation Committee honored me by my appointment as transportation agent of your association to look into the conditions governing the transportation of fruit, and the facilities afforded by the different carriers. The work has become deeply interesting. It is high time the education being advanced by the various rural fruit growers' associations and also by the mother association be not directed only towards production, but to transportation and marketing.

The fruit grower must prepare his fruit for the consuming public in accordance with certain legislation under a penalty. No matter how great the quantity, or how good the quality, the success of the industry is then largely dependent upon the condition in which the common carriers of this province deliver it to the various markets.

The products of agriculture are second only in quantity of railway tonnage to the products of mines. Fruit and vegetables, of which the railways carried over a million tons last year, are third highest in the list of agricultural products, contributing to the railway receipts. In other words, the agriculturists are the second best customers the railways of the Dominion of Canada have, and are therefore entitled to at least equal advantages with the shippers of other commodities.

The problem of rates—and we believe they are all the traffic will bear—is not the essential point, nor is it the most important of the many complaints or grievances of the fruit growers and shippers. It is lack of railway equipment, inefficient terminal facilities, a service in transit that assures no certainty of reaching a market in proper time, delays in supplying cars, rough handling, lack of shelter, pilfering, neglect in icing cars or attending heaters according to season, and certain privileges that are accorded shippers of other commodities, but not for fruit. These are a few of the more important matters, attributable to some of which are the serious losses fruit growers have experienced, and to which the province as a whole is suffering because our Ontario fruit is not reaching the markets, especially the western markets, in a proper condition, to meet the competition it is subjected to there.

The task, therefore, confronting your Transportation Committee is one of great importance. I beg to submit, herewith, a synopsis of what has been attempted and accomplished during the past year.

Application was made to the Railway Commission to compel the railway companies under their jurisdiction to allow part carloads of fruit charged at carload rate and weight from original point of shipment to final destination to be stopped in transit for completion of load at an additional charge of three dollars a car for each stop. In support of this request it was pointed out that British Columbia fruit shippers had the advantage of an inward rate, covering a sixty mile radius of ten cents a hundred pounds, for assorting carloads, and that shippers of horses, cattle, hogs, sheep, live poultry, grain, canned goods, lumber, and poles were permitted to ship part carloads at carload rate and weight from point of shipment to destination and stop for completion of load for three dollars.

The ruling of the Board upon this request was given on March 6th, 1913, and was as follows: "That the application for the stop-over privilege be, and is hereby refused." It is established by various decisions of this Board, says Commissioner McLean, as well as by decisions of the Interstate Commerce Commission, that the transit practice is a privilege, not a right, and the Board is without power to direct that this privilege be given by the railway.

Section 317 of the Canadian Railway Act reads: "No Company shall make or give any undue or unreasonable preference or advantage to, or in favor of, any particular person or Company, or any particular description of traffic, in any respect whatever." Yet the Board of Railway Commissioners allow such to exist, and have ruled that they have not the power to compel a railway company to extend this three dollar stop-over privilege, preference, or advantage, or whatever you may call it, to the fruit shippers who are paying a rate double that of live stock, two and one-half times that paid for lumber, three times the rate paid for grain, and four times greater than that on poles.

## MINIMUM INWARD RATES

From December, 1904, when tariffs were first filed with the Railway Commission, down to March 23, 1911, both the G.T.R. and C.P.R. carried apples to concentration points for storage, inspection, or completion of carloads and reshipment, at a reduction of one-third from the local tariff rates. The combination of the inward and outward rates not to be less than the through rate from the first shipping point to the final destination, plus two cents per hundred pounds; and if to the concentration point, a point route had to be used, the reduction applied only to that portion of the earnings of the company that received the second haul, or reshipment from that point. On March 29th, 1911, the arrangement was modified by withdrawing the completion of carloads concession, and restricting the storage and inspection privileges to carloads.

The Commission was asked jointly by the Simcoe Fruits and your Transportation Committee to order the re-establishment of these concessions in the event of not granting the stop-over privileges. The Board's ruling upon this request, dated March 6th, 1913, was as follows: "That the railway companies subject to the jurisdiction of the Board re-establish the arrangement formerly in effect, whereby apples were carried to concentration points for storage, inspection, and for completion of carloads and reshipment, subject to certain conditions, at a reduction of one-third from the local tariff rate to the concentration points, so as to become effective within thirty days from the date of this order, the railways having not satisfactorily justified the abrogation of the arrangement which has been shown to have been in existence in Ontario for a number of years."

On July 5th, 1913, I am informed by Mr Cartwright, secretary of the Commission, that the railway companies had applied for permission to refer this ruling to the Supreme Court, on the grounds that the Board had not jurisdiction to issue such an order. Their request was granted, but I am given to understand the order issued by the Board on March 6th, as above read, remains in effect until either quashed or withdrawn, and the rebate concession is therefore available for those requiring it.

As several shippers were annually paying out large sums of money for providing slat floors for refrigerator cars or box cars when refrigerators could not be supplied, to protect their shipments, the Commission was asked for a ruling compelling the railways to pay shippers for providing such.

Their request was granted by an order, issued June 30th, 1913, No. 19570, reading as follows:

"It is ordered that where shippers furnish slats for the floors of refrigerator cars not equipped with permanent slatted or double floors, or for the floors of box cars tendered to and accepted by shippers in lieu of refrigerator cars, for the carriage of fresh fruits, railway companies subject to the jurisdiction of the Parliament of Canada shall allow the shipper three dollars per car for the said slatting; the shipper to be permitted to deduct the said allowance from the freight charges payable by him upon the shipment in such car in which the said slatting has been furnished; the shipper's receipt for the amount so allowed to be given the railway company's agent at the forwarding station, and to be accepted by him as so much cash in the prepayment of the freight charges on such car."

This is three dollars better than it was up till this order went into effect, but your Transportation Committee are not yet satisfied in this matter. Some shippers put in floors and have done so this season that cost considerably over three dollars, and weigh probably one thousand pounds, but under the Canadian classification no reduction is allowed off the minimum carload weight for these floors, and consequently the shipper has to pay freight on same. We might take the case of a Simcoe shipper fitting a car as outlined; he gets no allowance from his freight minimum. In Port Huron—a mile away—another shipper fits a car, and under the official classification he is allowed one thousand pounds for such fittings, from the car minimum.

## RECIPROCAL DEMURRAGE

The Ontario Fruit Growers' Association, the Toronto and Montreal Boards of Trade, the Canadian Millers' Association, the Ontario Associated Boards of Trade, the Ontario Coal Dealers' Association, and the International Harvester Co. were heard in Ottawa, June 16th and 17th, by the Railway Commission on the question of reciprocal or average demurrage. It was my privilege to also represent your Transportation Committee at this hearing, to endeavor to show the great need of something being done to ensure a better service in the supplying of cars, a better mileage rate in transit, and a more prompt delivery at terminals for fruit shipments.

At present a shipper who allows his car to remain more than twenty-four hours of free time at intervals before unloading is fined one dollar a day for every day beyond such free time. Last winter the Board raised this to two dollars and three dollars for the first and second day, for four months as an experiment, but the experiment did not bring about the results which the railways claimed would be forthcoming, viz., that cars would be released, by consignees, and could then be supplied promptly to the shippers. The fact then is apparent that the fault is really congestion at terminals, which can only be remedied by the railways providing better terminal facilities.

(Continued on page 16)

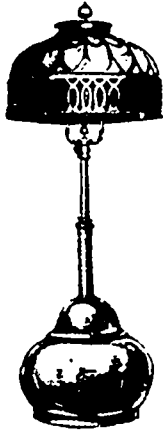
\*Extracts from a report presented at the recent annual meeting of the Ontario Fruit Growers' Association.



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Write for circular

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**Nova Scotia**

The Nova Scotia Department of Agriculture is determined that the apple mag-gots shall not gain a hold in the orchards of that province. So far this pest has not made its appearance, except in a very few localities. Infested fruit, however, has been coming in from Ontario and the New England states. When preventative measures are taken in time this pest can be controlled. It spreads very slowly, sometimes confining its attack to only a few trees for a number of years. This habit is a very fortunate one. It is hoped that all persons interested in the fruit industry in that province will be on the lookout for this insect and report any appearances to Robert Matheson, the Provincial Entomologist.

**Ottawa Flower Guild**

The Ottawa Flower Guild continues to progress. At a meeting last fall over forty new members were admitted. The bulbs chosen for this season are Narcissus Trumpet Victoria, Narcissus Trumpet Princeps, and Hyacinth Gigantea. The plants are Whitmanii Fern, Begonia Luminosa and Asparagus Plumosus.

Children up to twelve years of age receive three of each set of bulbs. Children over twelve are given a choice between plants or bulbs. A bulb exhibition will be held in February at which the children will be given an opportunity to compete for prizes. President R. B. Whyte has been giving instructions recently on the growing of bulbs. Marked benefit is following the work of the society.

With one organization handling a large volume of apples it will be possible to secure better terms from the railways.

**Douglas Gardens**

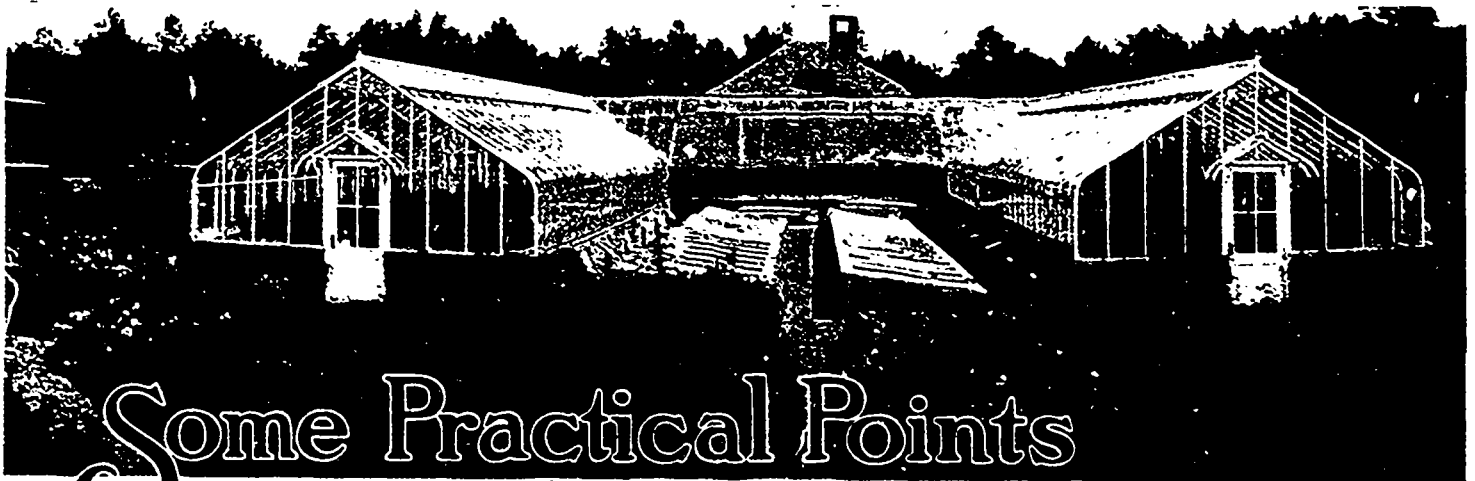
OAKVILLE, ONT.

A Happy and Prosperous  
New Year  
To All the Readers of  
The  
Canadian Horticulturist

Our Spring Planting List will be ready for mailing on the 1st of February.

If not now on our mailing list please send Post Card giving name and address, and a copy will be sent.

**JOHN CAVERS**



**Some Practical Points  
On Greenhouses**

HAS it ever occurred to you that the construction of greenhouses is decidedly different, and that a great deal of the success of your flowers depends on the construction?

Haven't you thought that practically the only difference in greenhouses, aside from design, was the difference in price?

With everything else, isn't there always some one kind that is generally conceded to be better than the rest, and taken as a standard for comparisons?

Then, isn't it only logical it should be so with greenhouses? When other greenhouse builders claim their houses are

"as light as the U-Bar's." It's significant that the U-Bar is the lightest of them all.

If the other builders are constructing their houses with curved eaves as near as possible like the U-Bar's, there must be a distinct advantage in the U-Bar curved eaves.

Now, the truth of the matter is No one can or does

**U-BAR GREENHOUSES**

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build a house anything like the U-Bar, because it's a patented construction and we are its sole users.

That it has distinct advantages, greenhouse experts admit. Whether these advantages are worth the difference in cost is a question that you can settle only after a careful comparison.

Before you put any money in a greenhouse, it might be well to go into the matter a bit.

Our catalog will be a great help. To have one of our representatives call would doubtless be the most satisfactory. Which shall it be?

# GLORIOUS GARDENS from ENGLAND

**K**ELWAY'S famous Hardy Herbaceous Perennials—Gaillardias, Pyrethrums, Pæonies, Delphiniums and others—are from strong, country-grown stocks which flourish under almost all conditions of soil and climate and make it possible to reproduce successfully in this country much of the charm and beauty of the finest old English gardens.

Choice named collections (specially picked to suit Canadian conditions) of Pæonies from \$3.75 to \$17.00; Delphiniums from \$2.25 to \$13.50; Gaillardias from \$1.50 to \$4.50; Pyrethrums, \$1.50, \$3.00 and \$5.10 a dozen.

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write for to-day

## Ontario Fruit Growers and Transportation

(Continued from page 14)

Our request was for reciprocal demurrage, that is, a system by which the rail ways as well as the shipper would be fined for delay in unloading, according as one or the other was responsible. The same would apply in the ordering of cars, if cars were not supplied in forty-eight hours, the railways would pay the shipper demurrage for each day's delay thereafter, and if supplied and not loaded in proper time, then the shipper would pay the same rate. Delays in transit or in placing would or should be in the form of a penalty.

By the average demurrage system the charge on all cars held for loading or unloading by shipper or receiver would be computed on the basis of the average time of detention to all such cars released during each calendar month as follows:

First—A credit of one day allowed for each car released within twenty-four hours of free time, and a debit of one day charged for each twenty-four hours beyond the first forty-eight hours of free time.

Second—At the end of the month the total number of days credited will be deducted from the total number of days debited, and one dollar a day charged for the remainder.

In supporting the reciprocal plan, I believe its adoption would be a fair settlement of the question, whereas the average plan would discriminate against the small shipper in favor of the big one. Let the railway as well as the shipper be penalized, but we must be prepared and willing to accept any ruling whereby the service will be improved.

From returns furnished me by shippers who kept records of shipments, as requested, last season, I was enabled to present to the Board accurate data showing losses sustained by shippers through delays in supplying refrigerator cars, etc. Out of forty shippers, requiring one thousand one hundred and eighty-six refrigerator cars, twenty-six experienced delays of from four to thirty-eight days in getting them, and in some instances were compelled to use box cars. An instance may be given of one shipper, who ordered eight refrigerator cars from the M.C.R. Co. on October 24th. He received two on November 23—35 days; one on November 30—thirty-seven days; one December 1st—thirty-eight days; and no more until December 13th. Another ordered six refrigerators from the P.M. Railway Co. on November 4th, and received the first car on December 10th, and so on all through the list.

Regarding delays in transit, the evidence submitted covered everything required by the fruit grower, from the nursery stock to the orchard product, including spray material. On fruit shipments to the western market, Winnipeg shipments travelled as slow as two and three-quarter miles an hour; Brandon, from four and three-quarter to ten miles an hour; Regina, four and three-quarter, five and one-half, and six miles an hour, and several other points about as bad. Conditions at export points were also referred to, instances being quoted where cars were held a full week and more during severe cold weather, and were badly frosted. Fifty-seven shipments of nursery stock by one shipper to points in Ontario, during the month of May, was even acknowledged by the railway representatives to be a most shameful condition of affairs. Some of these required seventeen days going twenty-three miles, fifteen

**BLACK CURRANTS**

We have some excellent plants of the Black Naples variety, grown from the most productive patch in the district. Also some Lawton Blackberry plants.

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Your copy of our Strawberry Catalogue is now ready. A Post Card will bring it. It describes all the best varieties of Strawberries and Raspberries. Cultural directions and lots of other valuable information.

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**Strawberries**

(Summer and Fall Bearing)



and All Small Fruit Plants

Strawberries and all Small Fruit Plants mean big and quick profits for you at a small outlay of money. We

are headquarters for Summer and Fall Bearing Strawberry Plants, Raspberries, Blackberries, Gooseberries, Currants, Grapes, Fruit Trees, Roses, Ornamental Shrubs, Eggs for Hatching, Orates, Baskets, Seed Potatoes, etc. Best varieties, lowest price 30 years' experience. Free catalogue is full of valuable information. Write today I. J. FARMER, BOX 436 PULASKI N. Y.

**Bee-keepers' Supplies**

SEASON 1914

Early Cash Order Discount 5%—November 1st to December 31st.

Send for our New Catalogue

**Bees-wax Wanted**

Best Market Price  
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**BEEKEEPERS' SUPPLIES**

BEES, QUEENS, HONEY and WAX

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**THE BEEKEEPERS' REVIEW**

would like very much to enroll a goodly number of new subscribers for the year 1914. Listen! Besides the 3,000 colony series managed from one office, we will begin with the January number of the REVIEW a series of articles by a beekeeper "grey with experience" that we will call the Farmers' Series; or, How to Produce Comb Honey with Two Visits a Year. The editor of the REVIEW has looked into this system quite thoroughly, and believes that, with this method that will be described in the REVIEW during 1914, the busy man or farmer can harvest much more comb honey per colony, with about a fourth the work that is required with the ordinary system now in vogue. We are printing 400 extra sets of the REVIEW for the last half of 1913; and as long as they last they will be included free to all new paid-in-advance subscribers for 1914. All progressive beekeepers should subscribe for two or three good bee journals. We are making a special low price on the REVIEW when clubbed with other bee journals.

To take advantage of this low price all remittances should be addressed—

Here is a good one: { GLEANINGS, one year, \$1.00 } Both, one year, for \$1.50  
 Here is another: { GLEANINGS, one year, \$1.00 } All Three for \$2.00  
 Here is another: { AMER. BEE JOURNAL, 1 yr., \$1.00 }  
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 Extra for Canadian postage. Gleanings, 30c. American Bee Journal, 10c. All three listed above 40c.

**THE BEEKEEPERS' REVIEW - - - NORTHSTAR, MICHIGAN**



View of James Carter & Company's trial grounds at Raynes Park, London, England.

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It pays to get the best seeds grown. That's why you will be interested in the new Catalogue of Carter's Tested Seeds. Write for it to-day.

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Carter's Seeds are cleaned and packed by unique methods and come to you absolutely true to name.

We maintain complete stocks in our Toronto store and warehouses to insure immediate delivery of your order.

Our catalogue, "Garden and Lawn," ready about January 1st, lists not only hundreds of vegetables and root crops, but has a complete list of flowers for garden and conservatory.

It gives also many useful hints on planting and cultivating.

Write to-day. Mailed Free.



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MY BEST FRIEND

# ROYAL

## YEAST CAKES




IN BUYING  
YEAST CAKES  
BE CAREFUL TO  
SPECIFY  
**ROYAL YEAST CAKES**  
DECLINE SUBSTITUTES.

E. W. GILLETT CO. LTD.  
TORONTO.  
WINNIPEG. MONTREAL.

days going twenty-eight miles, twenty-two days going thirty-seven miles, twenty-six days going seventy-two miles, etc., throughout the whole fifty-seven shipments. Similar reports to the foregoing were submitted on the placing of carload shipments of fruit after arrival at destination.

In reply to Chairman Drayton's inquiry as to what rate of transit the fruit shipments should be given, my suggestion was ten miles an hour, and I am satisfied this is not an unreasonable request, considering the freight rate, and the volume of business we tender. For instance, between New Orleans, La., and Chicago, for fruit and vegetable shipments, the run is made in fifty-five hours, a distance of nine hundred and twenty-two miles, or an average speed of sixteen miles an hour, while the actual running speed would be greatly in excess of this. The schedule for banana trains between these points is forty-seven hours and thirty minutes, an average of twenty miles an hour. Fruit trains from Southern Illinois are run from Centralia, Ill., to Chicago, two hundred and fifty-two miles, in ten hours and five minutes, about twenty-five miles an hour, and this service dates back as far as 1901. In the district comprising Delaware and the eastern shores of Maryland and Virginia, which ship probably ninety per cent. of its production north of Philadelphia, growers have the accommodations of specially constructed cars for fruit, and a service almost on passenger schedule.

#### FAST SERVICE ELSEWHERE

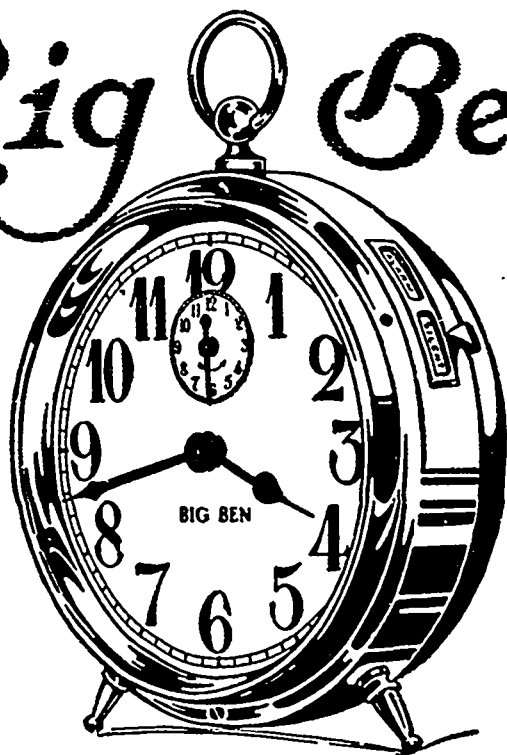
From Wilmington, N.C., to New York, fruit trains average better than sixteen miles an hour. Florida, like other southern states, is provided with a special fast freight service for the transportation of fruits, trains making the run between Jacksonville and New York, including all delays, at the rate of over seventeen miles an hour. All through the fruit producing states, we find similar service provided. From the Jacksonville, Palestine and Tyler districts in Texas to New York, one thousand five hundred and twenty-three miles in five days, and even to Montreal we find deliveries of peaches and cantaloupes made for sixth morning market. Between Southern California and New York, three thousand and twenty miles, an average speed of nearly thirteen miles an hour is attained. Washington, Oregon, and Idaho, competitive states in Western Canada with our Ontario producers, also have a special schedule during the heavy movement, and in some instances fruit shipments are handled on passenger trains.

To the great fruit industry of the province, then, the decision of the Railway Commission upon this problem means considerable, as it is a stepping-stone to the more important requirement—that of better service in transit.

We pay high rates because of the perishable nature of our commodity and deserve, therefore, the service for which we pay. The reports now coming in from Ontario shippers are an improvement over last year, but show a serious state of affairs yet. No company obtaining its right of operation from the Government, which in reality is the people, should be allowed to so serve or humbug those who make their operation possible.

When the decision of the Board will be given, I cannot say. I hoped it would be in time to apply this season, but was advised under date of October 13th, 1913, that it will be some time yet before the question can be disposed of.

# Big Ben



## Hitch Your Sleeping Schedule to Big Ben

Big Ben will wake you early enough for profitable before-breakfast action. His gentle get-up call starts the day with a flying start on thousands of farms.

For your accommodation he rings TWO WAYS. He'll get you up by degrees or in a hurry. Set him either way you wish—to give one long five-minute ring, or ten short rings at one-half-minute intervals, until you're wide awake.

He stands 7 inches tall: is triple-nickel plated over a treated Inco-steel coat, the handiest and truest thoroughbred in the clock world. He has big, bold numerals and hands that show the time plainly at a glance, large keys that anyone can wind easily, and such a pleasant tone that you are glad to get up when he calls.

Big Ben makes early rising easy. He's the leader of the early morning brigade. His cheerful

"good morning" ring calls millions of live wires to action. Thousands of successful farms are run on a Big Ben schedule. He starts you off right in the morning and keeps you right all day. From "Sun up" to "lights out" he regulates your day. He'll work for 36 hours at a stretch and overtime, if necessary. The only pay he asks is one drop of oil a year.


He is sturdy and strong—built to last a lifetime. Yet under his dust-proof steel coat is the most delicate "works." That's why his on-the-dot accuracy has won him fame.

Big Ben's wonderful sales are due to his having "made good." His biggest hit has been with folks with the "make good" habit. He stands for success—that's why you'll like him for a friend.

When 3 million families find Big Ben a good clock to buy and 20,000 dealers prove he's a good clock to sell, it's evidence that he is worth \$3.00 of your money. Suppose you trade \$3.00 for him today.

A community of clockmakers stands back of him. Their imprint, *Made in La Salle, Illinois, by Wm. S. Clark*, is the best alarm-clock insurance you can buy.

# Planet Jr.




**No. 16**  
Planet Jr  
Single  
Wheel Hoe,  
Cultivator, Rake  
and Plow

The highest type of Single Wheel Hoe made. It is light, handy, and adapted to use by man, woman, or child. Has leaf guard for close work, and a durable steel frame.

Nearly two million soil-tillers all over the world are saving time, lightening labor and getting better results by using Planet Jr guaranteed farm and garden tools. For all requirements, \$2 to \$100.

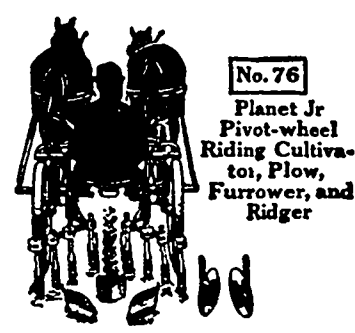
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**No. 4**  
Planet Jr  
Combined  
Hill and  
Drill Seeder,  
Wheel Hoe, Cul-  
tivator and  
Plow

This is a practical every day time, labor, and money-saver. It combines in a single implement a capital seeder, an admirable single wheel hoe, furrower, wheel-cultivator, and a rapid and efficient wheel garden plow. Every owner of a vegetable garden can save the cost of this tool in a single season.



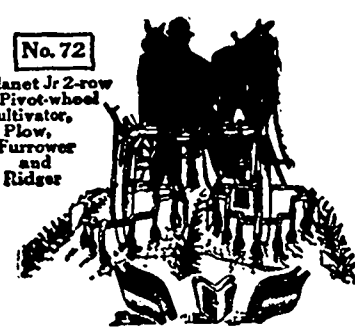
**No. 76**  
Planet Jr  
Pivot-wheel  
Riding Cultiva-  
tor, Plow,  
Furrower, and  
Ridger

A wonderful implement in extensive cultivation of corn, potatoes, etc. Light in draft, simple and strong in construction and comfortable to ride upon. Works rows 28 to 44 inches, and cultivates crops until 5 feet high.



**No. 11** Planet Jr  
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Wheel Hoe,  
Cultivator,  
Plow and  
Rake

The greatest cultivating tool in the world for the grower of garden crops from drilled seeds. It has steel frame. The plow opens furrows for manure, seed, etc., and can be reversed for covering. The cultivating teeth are adapted for deep or shallow work and for marking out. Crops can be worked both sides at once until 20 inches high.



**No. 72**  
Planet Jr 2-row  
Pivot-wheel  
Cultivator,  
Plow,  
Furrower  
and  
Ridger

Cultivates at one time two rows of potatoes, corn, beans, etc. in rows 28 to 44 inches apart. Works like a charm in check rows, crooked rows, and rows of irregular width. Can be equipped with roller-bearings, spring-trip standards, and discs.

## Apple Shippers

Read this before disposing of your Apples



**IT'S ONLY NATURAL** to give your own property **THE PREFERENCE** — Blood is thicker than water.

Having no bought apples of our own, we are in a position to look after your interests. Consign your apples to us—we can take care of them for you.

Have ample storage to hold for improved market.

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32 West Market St., TORONTO  
PHONE MAIN 1471

For the Land's Sake

Use the best Manure and get

**GOOD CROPS**

For Nurseries, Fruit Growers and Gardeners.

**Sure Growth Compost**

Makes poor land fertile and keeps fertile land most productive.

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**CENTRAL NURSERIES, ST. CATHARINES, ONT.**  
 Have a Fine Assortment of  
**Trees, Vines, Plants, Ornamentals, Etc.**  
 For Spring Planting  
 For Satisfaction, Plant St. Riges, Himalaya and Ever Bearing Burn's  
 Our prices are right and so are the trees. Send for priced catalogue if you have none, also your want list for special prices on Apple Trees. We can please you.  
 Look over our Price List No Agents  
**A. G. HULL & SON**




**NEW COAL OIL LIGHT BEATS ELECTRIC OR GASOLINE**  
**10 Days FREE—Send No Money**  
 We don't ask you to pay us a cent until you have used this wonderful modern light in your own home for ten days, then you may return it at our expense if not perfectly satisfied. We want you to prove for yourself that it gives five to fifteen times as much light as the ordinary oil lamp: beats electric, gasoline or acetylene. Lights and is put out just like the old oil lamp  
**BURNS 70 HOURS ON 1 GALLON OIL**  
 Gives a powerful white light, burns common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Guaranteed.  
**\$1000.00 Reward**  
 will be given to the person who shows us an oil lamp equal to this Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge to the world if there was the slightest doubt as to the merits of the Aladdin? We want one person in each locality to whom we can refer customers. Write quick for our 10 Day Absolutely Free Trial Proposition. Agents' Wholesale Prices, and learn how to get ONE FREE.  
**MANTLE LAMP CO., 715 Aladdin Bldg., Montreal & Winnipeg**



**AGENTS WANTED**  
 to demonstrate in territory where oil lamps are in use. Experience unnecessary. Many agents average five sales a day and make \$200.00 per month. One farmer cleared over \$500.00 in 6 weeks. You can make money evenings and spare time. Write quick for territory and sample.

In conclusion, I beg to submit for consideration, the following recommendation:  
 (1) That an effort be made to have all navigation companies handling freight, and operating upon Canadian waterways, placed under the jurisdiction of the Railway Commission.

That power be given the Railway Commission to adjudicate claims against railway or express companies not settled in 60 days.

That the Railway Commission be given jurisdiction in the matter of fixing a penalty for rough handling and pilfering of freight and express shipments.

That fruit inspectors be also cargo inspectors.

That the express minimum be reduced from twenty thousand pounds to fifteen thousand pounds.

That, if necessary, the Railway Commission be asked to compel the railway companies to allow free transportation both ways for a man sent in charge of heated cars.

That the railway companies be asked to provide a special fruit train service from central points in Ontario to Winnipeg, during the shipping season.

**Packing in Barrels**

D. E. Lothian, B. S. A.

In beginning to pack a barrel of apples, we lay in first of all what is known as the heading, which is the first layer of apples. According to their size the outer ring should consist of fifteen or sixteen, the second ring of ten or eleven, and the third or inner ring of three or four. Apples under that size will be of inferior grade, and may be packed with five in a ring and one in the centre, the centre apple should never be larger than those on the outside of it, otherwise the surface will not be smooth, and when pressure is applied the centre apple will suffer and the package as a whole will not be a tight fit. The stems, if long, should be removed and the stem end placed downward, that is to say, next to the head.

**RACKING IMPORTANT**

After the first layer has been placed in position the succeeding baskets of fruit should not be allowed to drop into the barrel, but the basket should be lowered close down to the layer and poured in gently. Damage is frequently done by allowing apples to drop even six or seven inches from the surface of the first layer. The damage varies with the particular variety in question. After the addition of each basket the barrel should receive what is known as racking, which consists in giving the barrel a sharp jerk. This allows the apple to settle into a good secure position, hence when the lid is nailed on there is no sinking, and consequent loosening of the package. When the barrel is nearly full a flat board should be applied to smooth the surface.

After the follower has been applied, which is the name used by apple packers for this board which they utilize to smooth out the surface, what is known as tailing may be performed. This consists in finishing the barrel by putting in the last two rows of apples, stem upwards. The top of the last row should be as nearly in line as possible with the chime of the barrel, or if anything, a little higher. The lid may then be applied and the barrel subjected to preferably a hoop press. In nailing on the hoop care should be taken not to drive the nails through so that they will project on the inside of the barrel and so damage the fruit.

**TREE PRUNERS**  
 ALL PATENTED  
 BEST IN QUALITY  
 EASY TO OPERATE  
 THE STRONGEST MADE




Happy Thought



Orchard King

Sold by all good Hardware Stores

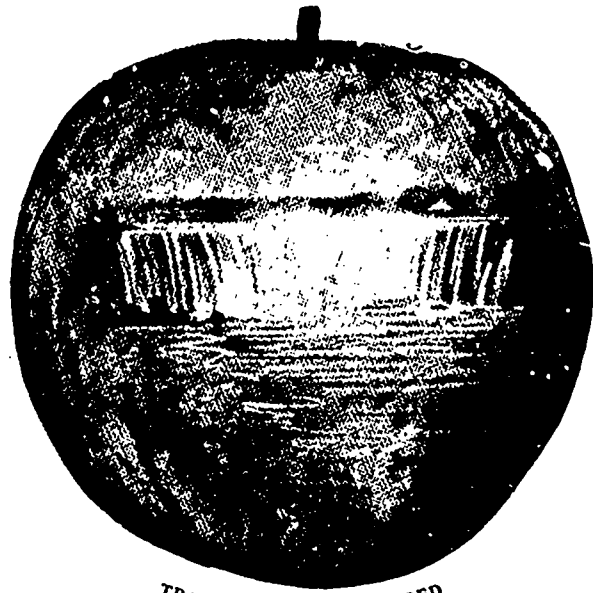
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**TAYLOR-FORBES COMPANY**  
 Limited  
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"Wherever Fruit Excels, NIAGARA SPRAYS are Used"

DON'T PAY FREIGHT ON WATER

# NIAGARA

The spray that makes fruit growing profitable.  
 The spray that always gives results.  
 The spray that produces all the prize winners.  
 The spray used by all successful fruit growers.  
 If you are not getting the results you should,  
 don't experiment any longer—  
 Get in the winning row. Use NIAGARA



TRADE MARK REGISTERED

DON'T PAY FREIGHT ON WATER

**SOLUBLE SULPHUR.**—The most talked of spray in America. In powder form. Dissolves immediately in cold water. Keeps indefinitely. A 100-lb. can makes more spray than a 600-lb. barrel of Solution. No leakage or loss. No heavy barrel to handle, return or pay for. Easy to mix and apply. No clogging of nozzles. SOLUBLE SULPHUR is a perfect control of San Jose Scale and all other Scales. It is stronger and better Fungicide than Lime-Sulphur Solution. It is cheaper and more efficient than any other spray. SOLUBLE SULPHUR was used by hundreds of growers in Ontario this past season with wonderful results. It will be used by thousands this year. No grower will ever use anything else after using Soluble Sulphur. Our supply is limited. We were forced to disappoint many growers last year. Order now so as to be sure and be supplied.

**Remember—Soluble Sulphur** is a patented product. It can only be procured from us. Let us send you further information and testimonials from growers and experts you know.

**LIME SULPHUR**—We will still supply the famous Niagara Brand.

**ARSENATE OF LEAD—Swift's Brand**—The highest grade only. Everybody says so.

**SPRAY PUMPS—Bean and Niagara—Hand and Power.** Famous from coast to coast for their High Pressure, Large Capacity, Durability, Efficiency, Low Cost of Maintenance. They are built for work. These pumps will run all day and every day and maintain their uniform high pressure and capacity. Always on the job. Never balk when there is work to do. We would like to send you full particulars of our patented pressure regulator and other special features and testimonials from hundreds of satisfied customers.

Write for complete information on SPRAYS and SPRAY PUMPS.

**NIAGARA BRAND SPRAY CO., LIMITED**  
**BURLINGTON, ONT.**



Branch Warehouses:  
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 Porcupine

Send for  
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WE GET YOU BEST PRICES

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.

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

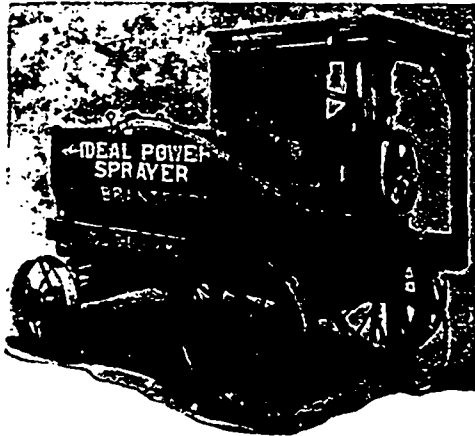


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CANNOT BE EXCELLED



We also manufacture complete lines of Gas and Gasoline Engines, Windmills, Tanks, Grain Grinders, Steel Saw Frames, Water Boxes, Pumps, etc.

Catalogues describing our different lines, sent on request

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## Fruit Growers' Requests

During December Messrs. D. Johnson and G. E. McIntosh, representing the Ontario Fruit Growers' Association and a large delegation of the fruit growers of Lambton County, met J. E. Armstrong, M. P. for East Lambton, at Forest, and laid before him certain complaints regarding railway facilities and service in handling fruit shipments. The resolutions, as approved by the Ontario Association and submitted to Mr. Armstrong, were as follows:

That an effort be made to have all navigation companies handling freight and operating upon Canadian waters placed under the jurisdiction of the railway commission.

That power be given the railway commission to adjudicate claims against steamboats, railway and express companies, which have not been settled in sixty days.

That an amendment be made to the criminal code whereby handlers of perishable shipments will be liable to a fine for rough handling and for pilfering.

That fruit inspectors be also made cargo inspectors.

That where a privilege has been given by a railway company under section 317 of the Railway Act, the railway commission be given power to order the extension of such privilege.

### REQUESTS REASONABLE

Mr. Armstrong said he believed the requests reasonable, and he would see they were placed before Parliament, with a view to bring about legislation that would adjust at least some of them.

Mr. Armstrong touched upon a matter that met with approval, that of nationalizing the express companies of Canada. The express companies are demanding six million dollars for handling the parcel post business to be inaugurated very soon, and Mr. Armstrong thought that the Postmaster-General should direct attention to governmental control of the express companies.

### Nova Scotia

The annual meeting of the Nova Scotia Fruit Growers' Association will take place at Kentville, January 20th, 21st and 22nd. A three days programme is being prepared. The question of the control of black spot will be especially dealt with.

### British Columbia

Developments in the system of fruit production and distribution in British Columbia, which may involve changes in methods now used by the orchardists, are possible as a result of a recent tour of the Pacific coast undertaken by J. Kidston of Vernon, a member of the Provincial Agricultural Commission, and R. M. Winslow, provincial horticulturist and secretary of the B. C. Fruit Growers' Association. They have recently returned from a trip which took them through American fruit growing districts extending from the boundary line south into the heart of the California citrus belt. They interviewed the officers of many growing and selling organizations and secured a large amount of valuable information covering the growing and distribution of deciduous and citrus fruits.

In the orchard districts of the Northwest the idea of close cultivation between trees is not looked upon with general favor, although this method is accepted here in

# FRIEND Sprayers



Western King

**Mr. Fruit Grower**

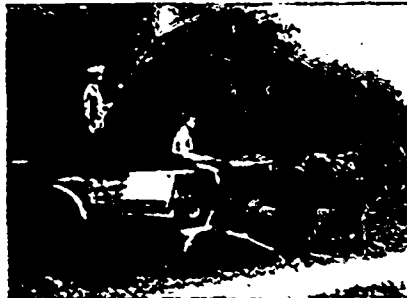
You have heard of the celebrated

**"Friend" Power Sprayer**

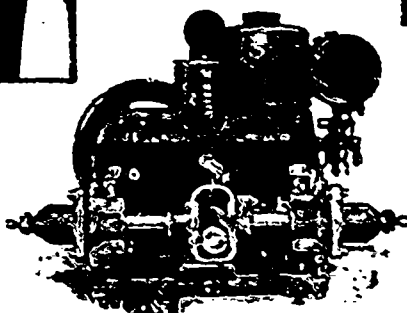
But you have not heard of the 1914 MODELS.

**Western King and Queen**

If you have a power sprayer, EXCHANGE engine and pump for our POWERFUL UNIT MOTOR-PUMP and PROPELLER AGITATOR, or sell it and buy a whole new outfit. "FRIEND" outfits are now made in many styles. TO SUIT YOUR TASTE. in-



Western Queen



The "Friend" Motor-Pump

cluding motor-pumps, units on bed without trucks, and complete machines - built in large and small sizes. The SIMPLEST, MOST COMPACT, MOST POWERFUL and FINEST WORKING power sprayers ever produced. Many Westerns sold in Canada last year to growers who are STANCUH FRIENDS this year.

WRITE FOR CATALOG TO-DAY, STATING REQUIREMENTS.

**"FRIEND" MFG. CO., GASPORT, NEW YORK**

The question of selecting an Arsenate of Lead for fruit-tree spraying is an important one.

There are a great many brands on the market, but only a few of them have all the requisite characteristics which will make your spraying successful.



TRADE MARK

THE CANADA PAINT CO  
LIMITED

**NEUTRAL  
ARSENATE OF LEAD**  
(Paste)

This product is soft and fluffy in character and mixes readily with water and other spray mixtures, and stays well in suspension. It is very fine in texture so covers the foliage evenly and goes farther than more granular and coarser Arsenates.

Before putting our new Neutral Arsenate of Lead on the market, we experimented and thoroughly tested it out in practical use, and we are confident here is no superior Arsenate of Lead made. As manufacturers of Arsenate of Lead we have been enabled to make use of a new formula for the manufacture of a Dry, Powdered Arsenate. Hitherto Arsenate of Lead in dry form was not satisfactory but this new product has all the good qualities of a paste Lead and some advantages beside. It is lighter in gravity and more fluffy in texture and so has greater covering qualities. It can be safely carried over from one season to another without deterioration. Probably the greatest advantage is the saving effected in freight charges, as the dry Lead weighs just half the amount of the paste Lead. Ask us for prices on our Paste and Dry Arsenates before you decide on the Lead you will use this year.

THE  
**CANADA PAINT CO.**  
LIMITED

PAINT-VARNISH AND DRY COLOR  
MAKERS-LINCOLN OIL CRUSHERS  
MONTREAL-TORONTO-WINNIPEG-CALGARY-EDMONTON  
608E NINE SIXTH QUEBEC

**Gladioli at Less than  
Wholesale Prices**

AMERICA, the standard pink, 1 1/2 in. and up in diameter. \$1.50 per 100.  
TACONIC, Ivory pink (perfect), 2 in. up. \$1.00 per 100.  
Order now before too late. These prices are made to close out circular.

H. P. VAN WAGNER  
R.R. No. 5 - HAMILTON ONT.

600,000 ft. Belting for Sale, all makes, at 1/4 to 1/2 less than regular value. Also 500,000 ft Iron Piping, 80,000 rods new Wire Fencing, Rails, Cable, Galvanized Iron, etc. at 1/4 to 1/2 saving. Price list free. Write to  
**IMPERIAL WASTE & METAL CO.**  
6 Queen St., MONTREAL.

**Imperial Bank**

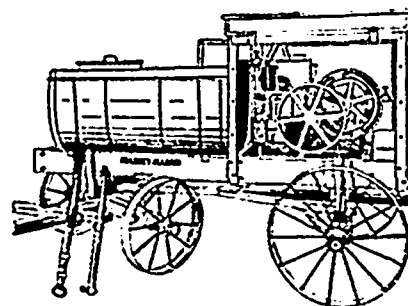
Established OF CANADA 1875

Capital Authorized - \$10,000,000  
Capital Paid Up - 6,925,000  
Reserve and Undivided  
Profits - - - 8,100,000

D. R. WILKIE, President and General Manager

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**Massey-Harris  
Spray Outfits**



Double Cylinder Vertical Pump  
with Bronze Plungers.

Tank is made of selected Cypress  
put together by Experts.

Simple, direct connection between Engine and Pump - No Sprocket  
Chains to get tangled up in branches of trees.

Agitator is positive in its action and is operated from the top—No  
holes through side of Tank to leak and cause trouble.

The Cab protects all working parts from the solution.

Front Wheels turn under the Frame—Handy in close quarters.

The Engine is described below.

**Massey-Harris Gasoline Engines**

The Ideal Engines for Spraying and general farm work as they run  
in all kinds of weather and under changes of position caused  
by working on side hills, etc.

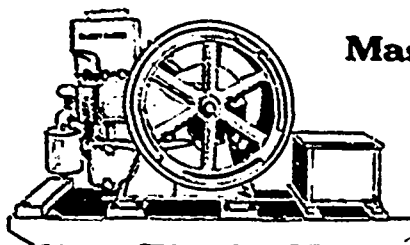
Hopper cooled with exceptionally large water space.

No gaskets or packing about the Cylinder to blow out or leak.

Valves are in Removable Cages—either can be taken out by  
removing two Screws.

Carburetor has no moving parts—is simple, effective and  
“easy on the Gasoline.”

— 1 1/2 to 20 Horse Power—Stationary, Portable, Semi-Portable. —



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Unique collection. Hundreds of varieties adapted for the Canadian climate. Perennial and perfectly hardy. Own sowing. Catalog free.

**Perry's Hardy Plant Farm**  
ENFIELD, MIDDLESEX, ENG.

**Roses Roses**

Irish, Dutch and American. Hybrid Perpetual Hybrid Teas and Climbing. Strong 2 year field-grown bushes that will bloom the first year—none better, none cheaper.

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**Trees, Shrubs, Vines, Perennials**  
Get Catalogue

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St. Thomas - Ontario

Make your garden a blaze of glorious colour from Early Spring to late Autumn. Learn how, from  
**KELWAY & SON**  
The Royal Horticulturists  
Langport, Somerset, England

**ARE YOU GOING**  
To Build  
**GREENHOUSES**

We Design and Manufacture  
**Iron Frame, Pipe Frame and All Wood**  
We Use Only The Best  
**All Heart Red Gulf Cypress Woodwork**  
We Also Supply  
Ventilating Machinery, Bench Material and all kinds of Greenhouse Hardware

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**PARKES CONSTRUCTION CO.**  
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many instances for young orchards. It is claimed that clean cultivation has the result of permitting the disappearance of humus and thus the soil fertility decreases and the tree foliage turns yellow, the tree's fruitfulness naturally becoming less. In the Yakima and Wenatchee districts the growers have adopted the plan of growing alfalfa between the rows and have found that where this policy was in force for some years orchard production was thereby greatly increased.

In Hood River clover is grown in the orchards with similar results and the deep concern of the grower over this problem of keeping the fertility of the orchard soil is giving place to confidence. In the younger districts in Southern Oregon and Spokane the soil fertility problem as in British Columbia is not yet so acute. It has been found in Hood River that whereas formerly forty thousand dollars worth of hay was imported every year, now there is no importation of hay whatever, the green crops in the orchards being sufficient for hay purposes. This method has resulted in a lower cost of cultivation although more irrigation water has been required. It is considered that a good deal of experimental work will be necessary before it is decided absolutely how far the system of growing alfalfa or clover between the rows of trees may be followed out in British Columbia.

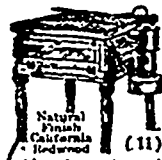
Generally speaking, wages are from twenty to thirty per cent. below those paid in the fruit districts of British Columbia, while the cost of materials, such as boxes, paper, orchard equipment and so forth, was from thirty to forty per cent. lower. Taxes were on the whole higher. The cost of fruit production generally, would seem to be about thirty per cent. lower than in British Columbia. This fact would lead to the conclusion, it is thought, that more general study will have to be given in this province to reducing the cost of growing, packing and marketing.

One difficulty now facing the fruit men of British Columbia lies in the fact that the American growers market their best apples, called "extra fancy," and "fancy," in the high-priced city markets at a figure about twice as high as that obtained for the third grade apples, described as "choice." These "choice" apples are sold at little above cost, the profit being made on the others; nevertheless the third grades are good apples, forming between ten and forty per cent. of the crop. They are in demand on the Canadian prairies, where an extra fancy apple is not desired.

In British Columbia the growers have no large cities in which to sell their finest apples, and the prairies do not seem to desire to pay the extra price for the British Columbia "fancy" and "number ones," consequently, in many cases the British Columbia growers have to put them on to the prairie markets at prices low enough to compete with the American "choice." The duty on apples is only thirteen cents a box, which is not enough to cover the margin of difference. Were the British Columbia growers to find a market willing to absorb the high-priced fruit it could meet the American competition and make money in the same way as followed across the line.

An effort is now being undertaken here to develop a market in Australia where, it is pointed out, there is a demand for the very cheapest apples, but then the advantage of any duty on American apples is lost.

Some attention was paid by the secretary of the B. C. Fruit Growers' Association to the question of fruit marketing. It was



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If ordered together we send both machines for only \$13.90 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Five year guarantee—20 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money—it pays to investigate before you buy. Remember our price of \$13.90 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time. Write us today. Don't delay.  
**WISCONSIN INCUBATOR CO., Box 316, Racine, Wis., U. S. A.**

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*Progressive Jones, Says:*

**"Good for Your SOIL and Your CROPS"**

Your soil will receive the proper plant foods to stimulate your crops and the land will also be nourished if you use

**Harab FERTILIZERS**

There are other fertilizers which, while they force your crops the first year, impoverish your land and eventually put it in such condition as to be almost worthless. Do not run any risks of this kind. Consider results not only for this year but for many to come.

Harab Fertilizers are true plant foods. They are good for both land and crop.

Be well advised and write to The Harris Abattoir Co. for a copy of their Fertilizer Booklet. That's the first step in the right direction.



*Plans for bumper crops  
Progressive Jones*

**The Harris Abattoir Co.**  
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Spraying with proper materials will increase both the quantity and the quality of your crops in orchard and garden.



### SPRAYING A Profitable Investment

*A new edition of this book has just been printed. Its distribution among fruit growers will result in a complete and reliable guide for exterminating insect pests. This book contains 120 pages and many illustrations regarding the life history of the important insect pests and the best methods of destroying them. Send us your name and address on a post card, asking for the book, we send it free of cost.*

Here are six reasons why it will pay you to use

**THE SHERWIN-WILLIAMS CO.**  
of Canada, Limited  
**NEW PROCESS  
ARSENATE OF LEAD**

- 1.—It kills all leaf eating insects and is used and recommended by large growers in all the fruit growing districts.
- 2.—It is a neutral Lead and cannot cause arsenical poisoning of your trees, foliage burning, or fruit russetting.
- 3.—It is very fine, fluffy and floury in texture so stays well in suspension and
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- 5.—It has a peculiar adhesive-ness that enables it to stick to the foliage in spite of rain.
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# ANNUAL FEBRUARY SPRAYING NUMBER

OUT FEBRUARY 1st

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As usual special articles on Spraying, and other special articles have been secured.

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Knapsack, Pack Saddle or Horse Drawn  
Power Sprayers

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MADE BY THE COTTAGERS OF BUCKINGHAMSHIRE.

This is the old-fashioned lace made on the cushion, and was first introduced into England by the Flemish Refugees. It is still made by the village women in their quaint old way.

Our Laces were awarded the Gold Medal at the Festival of Empire and Imperial Exhibition, Crystal Palace, LONDON, ENGLAND, for general excellence of workmanship.

BUY some of this hand-made Pillow Lace, it lasts MANY times longer than machine made variety, and imparts an air of distinction to the possessor, at the same time supporting the village lace-makers, bringing them little comforts otherwise unobtainable on an agricultural man's wage. Write for descriptive little treatise, entitled "The Pride of North Bucks," containing 100 striking examples of the lace makers' art, and is sent post free to any part of the world. Lace for every purpose can be obtained, and within reach of the most modest purse.



COLLAR—Pure Idem.  
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DAINTY HANDKIE—70c.  
No. 920—Lace 1 1/2 in. deep.

Collars, Fronts, Neckties, Jabots, Yokes, Fichus, Berthes, Handkerchiefs, Stocks, Camisoles, Chemise Sets, Tea Cloths, Table Centres, Wafers, Mats, Medallions, Quaker and Peter Pan Sets, etc., from 25c. 60c., \$1.00, \$1.50, \$2.00 up to \$5.00 each. Over 100 designs in yard lace and insertion from 10c., 15c., 25c., 45c., up to \$3.00 per yard.

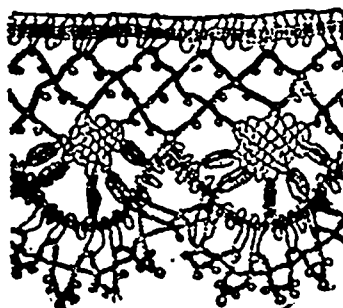
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Mrs. Armstrong having over 100 Irish peasant girls connected with her industry, some beautiful examples of Irish hand-made lace may be obtained. All work being sold direct from the lace-makers, both the workers and customers derive great advantage.

Every sale, however small is a support to the industry.



(1 1/2 in. deep.) STOCK—Wheel Design.  
Price 25c. each. (Half shown.)



No. 122—30c. per yard.

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are offering for sale a general assortment of first-class Fruit Trees, Bushes, Vines and Ornamental Shrubs, etc., at very low prices. Our catalogues are just out. It will pay you to send for one.  
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**Fruit Machinery Co.**  
INGERSOLL, ONT.

Manufacturers of Sprayers and a complete line of  
**Apple Evaporating Machinery**  
Installing Power Evaporators a specialty  
**OUR LEADERS**  
**Ontario Power Sprayer**  
Model 2-B, and the  
**Improved Pacific Apple Parer**  
Write for catalogue on Spraying and Evaporating

**FLOWER POTS**



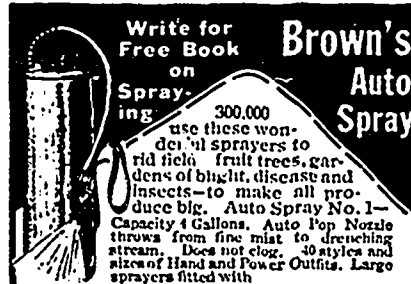
Large stock of all sizes for the Spring trade.

Send us your order NOW and receive your supply before the Spring rush.

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HAMILTON, ONT.

**Dahlia Bulbs for Sale**

Order early for spring delivery. All varieties of Dahlia bulbs offered for sale, being the best that money could obtain.  
Send for Price List  
**J. T. Payne** Dahlia Specialist  
Campbell Street Strathroy, Ont.



**Non-Clog Atomic Nozzle**  
only nozzle that will spray any solution for days without clogging. Fits any make of sprayer.  
Write for valuable Spraying Guide Free.  
The E. C. Brown Co., 57 JAY ST., ROCHESTER, N. Y.



**SMALL FRUIT PLANTS**

Gooseberries, Josselyn! Josselyn!! Red Jacket, Downing, Pearl, Houghton.—Currants, Perfection, Perfection!! Ruby, Cherry, White Grape, Lee's Prolific, Champion, Black Naples, Victoria.—Raspberries, Herbert! Herbert!! Herbert!!! Outlbort, Marlboro, Brinckle's Orange, Golden Queen, Strawberry-Raspberry.—Garden Roots, Asparagus, Rhubarb. Write for Catalogue  
**WM. FLEMING, Nurseryman, Box 54, Owen Sound, Ont.**

found that in the United States the organizations fall into three classes: First, where the growers simply pack and sell to local jobbers, second, where the growers pack and sell f.o.b. cars, thus retaining control of the fruit until shipped. In the third class the growers' organization have selling agencies or brokers to which they consign fruit, or else through auctions upon arrival. In either course, the fruit is generally disposed of to jobbers. There seems little evidence of direct selling to retailers as it is shown that this would demand a great credit system. No serious effort has been made to eliminate the jobber.

The one note of doubt was sounded by the peach growers across the line, who failed to make money this year, even with the shortage in peaches. Thousands of trees are being removed in the peach belts to the south."

**Eastern Annapolis Valley**  
Ernie Buchanan

The weather continues mild and damp, although we had a few days' sleighing in the beginning of December. Mayflowers were gathered as late as December ninth.

The potato crop is very short owing to alternate rains and frosts during the prolonged harvest. For the past few years several apple growers have found it more profitable to buy potatoes for home use than to grow them; now they are finding it a difficult matter to buy them as many of the little growers have only enough for themselves or are holding them for better prices. The present market price is one dollar and sixty cents a barrel at the warehouse. Nova Scotia supplies much of the seed of special varieties of potatoes to Bermuda farmers, who grow three crops a year for American markets. This year they have been disappointed as many barrels of their seed have been frozen in Nova Scotia, and prices have gone up.

Reports from Old Country markets are discouraging, but the low prices may be a blessing in disguise, emphasizing the fact that we need cold storage, and that it neither pays to grow or to ship number three apples. In London the number threes and spotted special twos will not make enough to pay shipping expenses, not counting the trouble and toil of growing them.

Silver black, patched, blue, and red Foxes supplied for stocking fur farms.  
\$40.00 per pair paid for sound live Mink  
**JOHN DOWNHAM, Strathroy, Ont.**

FOR A BRIGHT AND CHEERFUL KITCHEN  
**BLACK KNIGHT STOVE POLISH**  
A PASTE NO WASTE NO DUST NO RUST

We pay highest Prices for  
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A book of 96 pages, fully illustrated. Game Laws revised to date—tells you how, when and where to trap, bait and traps to use, and many other valuable facts concerning the Raw Fur Industry, also our "Up-to-the-minute" for quotations, sent ABSOLUTELY FREE for the asking. 459

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SURE GROWERS  
GOVERNMENT TESTED  
Write for Catalogue  
**Wm. RENNIE Co., Limited**  
Cor. Adelaide and Jarvis Streets, TORONTO.

**Fighting the Railways**

The proposed abolition by the Canadian Pacific Railway of certain less than carload and concentrating privileges formerly afforded to the fruit districts near Toronto, occupied part of a session of the Railway Commission during December. The main point at issue was the question of the Railway Board's jurisdiction in the matter.

The privileges hitherto afforded by the C.P.R. were those for the movement of fruit in carload lots to distributing centres such as Brighton, Ont., their concentration into carloads there and reshipment, all at a low rate. These the railway proposes to abolish. The Canadian Pacific took the stand that the Railway Commission had no jurisdiction in the matter.

**Items of Interest**

Experiments with rot in apples, particularly with the dry black spots which appear on the surface of the fruit, are being conducted at St. Catharines by W. A. McCubbin, M.A., of the Dominion Laboratory of Pathology. He is inoculating perfect specimens with the rot to observe the effect. He is also treating the peach tree canker, and has discovered an apparently new rot on tomatoes which he is following up. Mr. McCubbin, who has found that many shade trees in the city are suffering from sores caused by injuries in which a fungus disease gets into the wood and eats it up, recommends painting these sores, as no fungus can thrive under paint.

I read The Canadian Horticulturist with pleasure and profit.—J. D. Murray, Saskatchewan.

**Goulds No. 423  
A Great Farm  
Pump for  
General Use**

**Avoid Pump-Buying Mistakes**

This is one of our latest types—adjustable stroke, force pump standard.

The adjustable stroke adapts the standard for connection to any windmill or pumpjack.

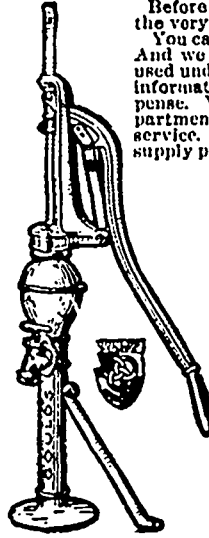
Revolving bearer top permit the lever to be set and operated at any angle with the spout.

Large air chamber gives steady, even flow at spout.

Nut and hose tube spout for connection with garden hose.

Outlet back of spout tapped for iron pipe connection.

Extra strong construction throughout. Ask your dealer for Goulds No. 423.



Before you buy a pump or water system of any kind, be sure it is the very one best adapted to your needs.

You can choose from over 300 types of Goulds Reliable Pumps. And we will tell you which type will give the best results when used under your particular service conditions. By getting exact information first, you'll save yourself worlds of trouble and expense. Write our Mr. Gould, in charge of our Consultation Department. His lifelong knowledge and experience are at your service. You can get his help without charge on any water supply problem.

**GOULDS  
RELIABLE  
PUMPS**

**OUTSELL ALL OTHER PUMPS**

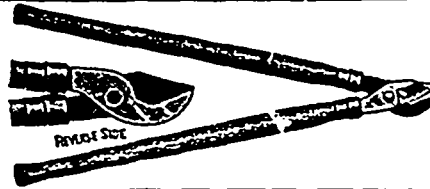
For 65 years Goulds Pumps have been preferred by pump buyers who wanted longest and most satisfactory service. As a result, today we make more pumps than any other concern.

And due to our enormous output, you pay no more for Goulds quality than for pumps of less merit. The best dealers in every locality handle Goulds Reliable Pumps. Look up the one in your section.

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This luxury is possible on your farm. Send for our free book, "Water Supply for Country Homes." It describes and pictures the most practical systems—hand, windmill, power, and hydraulic run, with the most desirable type of pump necessary. Write for book today.

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**Cronk's Pruning Shears**

To introduce a high-grade pruning shear at a very low price, we are now offering direct, provided your dealer does not have them, our 25-inch No. 09 1/2 guaranteed pruner at \$1.25 per pair, via parcel post, prepaid; cash with order. CRONK & CARRIER MFG. CO., ELMIRA, N. Y.



**The Greenhouse  
As a Paying Proposition**

THE assumption that a greenhouse on a private place cannot be made to pay; or that it is an out and out luxury—is a fallacy.

By way of comparison—the man who buys a touring car and devotes it solely to pleasure jaunts and then states that "it is nothing but a continuous bill of expense," certainly is not to be classed with the one who, in addition to the pleasurable side, also uses his car to the undoubted advantage of his business, either direct or indirect.

By the same token, greenhouses can be either a delightful expenditure; a combination of pleasure and profit; or

a strictly business proposition.

The owner of the houses above makes his living by furnishing flowers and vegetables to a big city hotel, in addition to a local trade of no mean proportion.

Why don't you investigate the three above named phases and convince yourself that you ought to have a greenhouse?

We will gladly help you in every way by sending our printed matter, suggesting places to visit, or better yet, come right to your home and talk it over. Which shall it be?

**Lord & Burnham Co., Ltd., of Canada**

Greenhouse Designers and Builders Toronto, 121 Queen Street East  
New York Boston Philadelphia Chicago Rochester

**FOR SALE AND WANTED**

Advertisements in this department inserted at rate of 3 cents a word for each insertion, each figure, sign or single letter to count as one word, minimum cost, 30 cents, strictly cash in advance.

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

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

RELIABLE HELP, SKILLED AND unskilled, supplied horticulturists and others. Canadian Employment Bureau, Proprietor member of B. G. A., London, England, 65½ James St. South, Hamilton, Ont.

ASK DAWSON. He kows. IF YOU WANT to sell a farm consult me. IF YOU WANT to buy a farm consult me. I HAVE some of the best Fruit Stock, Grain and Dairy Farms on my list at right prices. H. W. Dawson Ninety Colborne St. Toronto.

FOR SALE.—Large Greenhouse establishment paying big dividends. Over fifty thousand feet of glass, 3 dwelling houses, barns, fruit, etc. Will sell all or part. Owner retiring from business.—Frank Whitehall, R.R. No. 2, London, Ont.

WANTED—100 Colonies of Bees; also a small Farm of 1 to 3 acres, with a cottage, in good bee pasturage.—B. P. Wood, 159 Keele St., Toronto, Ont.

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

**RHODES DOUBLE OUT PRUNING SHEAR**

Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

536 S. Division Ave. GRAND RAPIDS, MICH.

**Notice to Horticultural Societies**

Give Bezzo's Famous Prize Aster Plants as premiums next spring. Prizes at New York State Fair, 1910-11; Canadian National Exhibition, 1912. Highest awards at Berlin Horticultural Society Exhibitions, 1911-12-13. Write for prices.

C. MORTIMER BEZZO - BERLIN, ONT

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Artistic Plans, Sketches furnished for all kinds of LANDSCAPE CONSTRUCTION WORK.

Ornamental Trees, Shrubs, Conifers, Hardy Perennials, etc.

ASK FOR PRICE LIST

17 Main Str. East - HAMILTON, Ont.

Phone 148

Stanton Kerr, the twelve year old son of W. J. Kerr of Ottawa, secretary of the Ottawa Branch of the Ontario Vegetable Growers' Association, was accidentally killed on Saturday, November 22nd. At the time of the accident the father was in Toronto on a lecturing tour, and the mother had gone into the city. Stanton had been riding one of his father's horses. When he went to alight his foot caught in one of the stirrups, and the horse became frightened and dashed off, dragging and mortally injuring the lad, who expired in a few minutes. Stanton was in every way a promising boy, and the highest hopes for a useful life were entertained by all who knew him.

**Ontario Agricultural College**

The Fruit Growers' Short Course and Packing School will be held at the Guelph Agricultural College from January 27th to February 6th, inclusive. These short courses are most valuable to experienced fruit growers and also to beginners. The dates for the packing schools, which are entirely separate from the short course proper, are February 2nd to 7th, and February 9th to 14th. The instructors in box and barrel packing will be W. F. Kydd and Mr. Leslie Smith, of the Fruit Branch, Toronto.

Those who may not find it convenient to spend the entire week in the packing school may arrange for two or three days instruction in either the first or second week.

**British Columbia**

Estimates made in the agricultural department at Victoria of the probable fruit crop of the interior for 1914 indicate that the fruit crop, particularly of apples, will be from one and a half times to twice as large next year, as in 1913, and one of the largest on record.

All records in the rapid transit of fruit were broken in the shipment of two cars of apples, which recently went forward to the Old Country. The apples were exactly eleven days on the journey from Vernon to Liverpool.

The suggestion has been made that the Provincial Government agricultural departments establish pruning classes in the various fruit districts and it is said that the department is now giving serious attention to this question.

A resolution will also be presented at the provincial convention urging the provincial government to appoint a permanent official whose duty it would be to conduct an educational campaign in various parts of British Columbia regarding cooperative marketing and to aid in the formation of organizations.

The provincial fruit pests inspector and his assistants have been active during the past year. In a recent fruit condemnation, in Vancouver four car loads of apples from Hood River were condemned for codling moth and sent back to the United States.

The Vernon Fruit Union reports that Chinese grow fully two-fifths of the vegetables handled by the Union.

**EGGS**

EXPRESS PREPAID—all the standard breeds of Chickens, Ducks, Geese and Turkeys. HIGH-CLASS STRAINS. Write today for catalog describing breeds—also poultry supplies. ITS FREE.  
J. H. RUTHERFORD, Box 62  
Calder East, Ontario

**Protect Your Property With Peerless Lawn Fencing**

Ornamental fencing serves a double purpose. It not only enhances the beauty of your premises, but also protects it and your children, as well. It keeps out marauding animals and trespassers. It protects your lawns and flowers and always gives your property that orderly, pleasing appearance.

**Peerless Ornamental Fencing**

is the result of years of fence building. It is built to last—to retain its beauty and grace for years to come and should not be confused with the cheap, shoddy fencing offered by catalog houses. Peerless fence is built of strong, stiff wire which will not sag and the heavy galvanizing plus the heavy zinc enamel is the best possible assurance against rust.

**Send for Literature**

Shows many beautiful designs of fencing suitable for lawns, parks, cemeteries, etc.

Agencies almost everywhere. Agents wanted in unassigned territory.

The Banwell-Hoxie Wire Fence Co., Ltd.  
Winnipeg, Man. Hamilton, Ont.

Send your consignments of APPLES to the Home Country to

**Ridley Houlding & Co.**  
COVENT GARDEN  
LONDON, ENGLAND

who specialize in APPLES and PEARS during the Season. Personal attention, prompt account sales and remittance

Correspondence invited

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DO you know of the many advantages that New Ontario, with its millions of fertile acres, offers to the prospective settler? Do you know that these rich agricultural lands, obtainable free, and at a nominal cost, are already producing grain and vegetables second to none in the world?

For literature descriptive of this great territory, and for information as to terms, homestead regulations, settlers' rates, etc., write to

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Parliament Bldgs., TORONTO, Ont.