

# THE CANADIAN HORTICULTURIST

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FOR FRUITGROWERS, MARKET GARDENERS & AMATEUR HORTICULTURISTS  
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## The Canadian Horticulturist

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# Planning the Apple Orchard

Information For Those Who Are Thinking of, or Preparing to Set Out New Orchards

This summer is the time to lay your plans and to commence your preparations for the orchard you intend to plant out next spring. Much of the success of your future orchard will depend on the preparation of the soil this summer, including efficient drainage (if necessary), ample fertilization, and thorough cultivation. Rich soil, well prepared is most essential if you wish your trees to do well and your orchard to return the ultimate profits of which it is capable.

## Varieties and Arrangement

A rectangular style of planting as shown in illustration, will be found one of the best arrangements for apple trees. The permanent trees marked X are placed in rows 40 ft. apart each way, on very rich soil; on ordinary soil 35 ft. Fillers are placed midway between these in the rows and in the centre of the squares thus formed. This leaves the trees 20 ft. apart each way. There are three fillers to each permanent tree.

In 15 to 20 years, or as soon as the trees commence to crowd, remove two out of every three fillers—the one marked O in illustration—leaving the centre filler. This leaves just one-half the trees originally set out. There is now one filler for each permanent tree. These can stand for approximately 25 years, when they should also be removed, leaving only the permanent trees.

The best permanent varieties for Southern Ontario are Spy, Baldwin and Blenheim. Farther north plant Stark instead of Baldwin. For fillers use heavy and early bearers such as Duchess, Wealthy, Ontario, Wagener, Ben Davis, Gano and Pewaukee. McIntosh is a splendid fall apple which can be used either as a filler or a permanent variety, but as it is being planted pretty heavily just now, it is just as well not to plant too many of this variety.

Watch This Page for Further Information on Orchard Care and Management

**E. D. SMITH, Nurseryman**

**Winona, Ont.**

## GARDENERS AND FLORISTS

ATTENTION

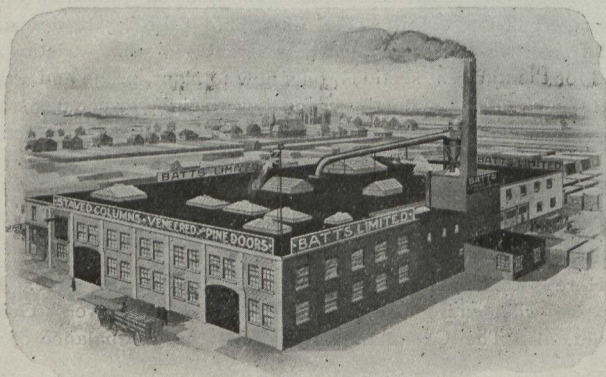
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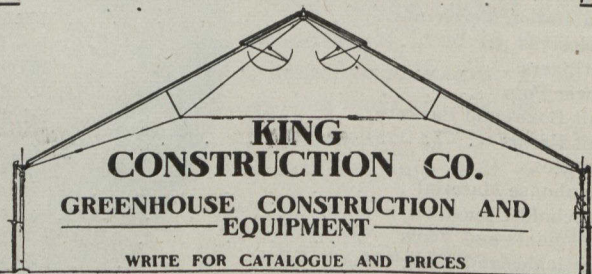
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# The Canadian Horticulturist

Vol. XXXV

JUNE, 1912

No. 6

## Summer Spraying

R. J. Messenger, Bridgetown, N. S.

ALL men know, and a few practically realize, that any work thoroughly done gives better results than the same work carelessly put through. This knowledge should be applied to the work of spraying.

### THE BUD MOTH

The bud moth is the earliest insect we are up against in Nova Scotia, and for many years we have felt that we had his life history down pat as well as the means necessary to combat him. But now our scientists are working hard to upset old theories and recommend new ones as well as new practices, and we very soon will be viewing the bud moth from another standpoint, and accomplishing his destruction in a different manner. My reason for the doubt expressed is that one of our new scientists stated to me recently that our early spray was for the bud moth. Certain it is, he is a destructive little wretch, and we have felt that his work was of sufficient importance to warrant the necessity of a strongly poisoned spray early in the season just as the fruit buds were swelling or as the warm days come.

The bud moth is alive all winter as a small brown worm with a black head. He hides himself under a little rubbish in the axil of a bud or the angle between the twig and the bud. He bores a very small hole into the blossom and eats out the vital part, and later emerges and rolls himself in the leaf that has opened.

The fact that the hole he makes in entering the bud is small is the reason we want a strong spray thoroughly applied on those buds when the little fellow leaves his winter quarters. At least! so scientists of the last decade and experience have taught us, and this spray generally is applied in May from the fifth to fifteenth.

Our other enemies in Nova Scotia are brown tail moth and canker worm, of which we have just finished a cycle. A little codling moth and a few lesser enemies all controlled by the later sprayings with which we will deal, and the great enemy of growers who want clean-skinned fruit—the apple scab fungus.

### MATERIALS TO USE

In the use of materials also, we are transitory and know not what a season

may be financially interested to draw after them the whole unthinking flock in a scramble after the new thing. We all like to be popular, but still I would not condemn our old friend bordeaux, even if many lay the russetting of fruit at his door. In any case, I shall use bordeaux for spraying potatoes, and we may not find in lime-sulphur, after ten years' unprejudiced use, the bonanza it appears at present.

By buying it in commercially prepared form much-wanted time is saved and we will use it for a while at least. For dormant spraying, we use of the commercial preparation, such as is sold by the Niagara Spray Company, about one gallon to ten of water. For the later sprays, about one gallon to thirty or forty of water.

### USE OF ARSENATE

For insecticides, the only spray strongly recommended is arsenate of lead on the ground that it is harmless to the foliage and yet kills the bugs. It is also found to increase the fungicidal properties of the lime-sulphur with which it is mixed.

In my own experience it is not extremely harmful to anything except the orchardist's pocket, and unless severely agitated it settles to the bottom of the cask and stays there. However, its expense spells profit to the sellers, and the former are always legitimate prey. It is safe and won't burn your trees. It is mildly active, and if you put it in in sufficient quantities to allow for what settles to the bottom of the cask and give the bugs a good feed, you will be doing the popular thing, and no one will criticize. In the meantime, we realize that we have not attained the perfect spray mixture. After two years' experience, I am strongly tempted to go back to the bordeaux and the quick-acting, sure, inexpensive, and if intelligently used, non-



A Power Spraying Outfit suitable for use in Large Orchards and on Tall Trees

may bring forth. Outside of the great mass of trash of a proprietary nature that is constantly being brought to the notice of the public, and which no intelligent orchardist bothers with, unless it is strongly recommended by our experiment stations, there are two principal mixtures of fungicidal value. These are the old bordeaux, which we all know how to mix, and the newer lime-sulphur, which none of us liked to mix before we got the commercial ready-to-wear stuff. Now the strain of spraying has shifted from our muscles and time to our pockets and we save the former and pay the other fellow to prepare our material.

Men are like sheep, and it only needs a little recommendation from men who



A Western Irrigated Orchard in Bloom

injurious to foliage home-made arsenite of soda, as an insecticide to add to the fungus-destroying bordeaux. As this is an article on summer spraying, it should contain the information that summer spray should contain: Commercial lime-sulphur 32B, one to ten gallons of water; arsenate of lead, three-quarters of a pound to ten gallons of water.

#### THE APPARATUS

Use a pump of sufficient power to give a fine spray from the nozzle. If a hand pump is used, have the handle long, the cylinder large, the strainer fine, the intake pipe of good size—any other packing except cotton wick—a large air chamber, and a good strong half-inch hose. A quarter-inch hose loses too much power through friction. It would be all right on a power pump. I have used and seen used about fifteen different makes of nozzles, and the best, in my opinion, is the aluminium nozzle, sold by the Niagara Spray Company. It is light, effective, of great delivery, and with sufficient power to make a fine spray.

#### HOW TO APPLY

Spray may be applied on any day, in any kind of weather, and a given area finished at once, and all this work may be done from the platform of a wagon; but these conditions do not attend thorough spraying. I submit that a tree cannot be thoroughly sprayed at one time, with the wind in one direction, though we often try to do so. An orchard should be sprayed on one day with the wind, and three-quarters of the tree sprayed. It is not impossible to find in any week the wind in such a direction that the remainder of the trees can be sprayed. The spray should go into the tree from the ground as well as from a wagon. A fine dry day, with a slight wind, is the best for spraying. A bent connection at the nozzle will allow the spray to be easily directed by turning the rod.

In the application of lime-sulphur, some advocate the use of coarse nozzles

and an abundance of spray to wet the whole tree and surrounding country.

## What Cultivation Shall I Give My Orchard?

T. G. Bunting, Central Experimental Farm, Ottawa, Ont.

(Continued from May issue)

**A**N excess of water in the soil at any time is never advantageous to trees, but rather injurious, and should be removed by drainage, as before stated, and the sooner the water is removed in the spring the better, for then cultivation can begin, and after it begins it is desirable not to have any great loss of moisture other than that which is taken in through the roots of the trees. Each rain will destroy this soil mulch, so then cultivation should be given as soon after each rain as possible in order to restore this mulch.

During a dry period, or a prolonged drought, the soil mulch will largely lose its efficiency if not renewed at intervals of from ten days to two weeks. Therefore, during the season of two or three months, ranging from say the middle of April to near the end of July, it will be necessary to cultivate as soon after each rain of consequence as possible. These cultivations should be as frequent during this season as every ten days or two weeks whether there is rain or not.

#### FREQUENT CULTIVATION

This will mean that the orchard will require to be cultivated from five to seven times during this period. The first cultivation will quite likely be by means of the plow, or if the land is in very good condition the disc may be used to advantage. The depth of plowing will depend on the accustomed depth of plowing in the orchard, and it should never be much deeper than four inches, and preferably between three and four inches.

Some, in using the disc, will cultivate just as shallow as they possibly can. The following cultivations may be by means of the disc, acme harrow, or any

As this seems to be uselessly expensive and not really as efficient as a fine mist, I try to get the latter and give the foliage a good coat of spray that will stick and dry.

We generally give three applications during the summer, besides the one in early May. One is given just before the blossoms open. This keeps in check the hunch caterpillar, canker worm, and brown tail moth, if any winter pests have escaped, as well as the black spot fungus.

One spray is given as the little apple forms and while it is yet sticking its calyx into the air for the codling moth and black spot. The third is given about two weeks later, if there is wet, muggy weather, for black spot. I am aware that the foregoing is not all orthodox, but it might excite criticism and thought, the latter being the most important thing on earth.

of the spike or spring tooth harrows, but it is a good plan to use the disc harrow occasionally as this tends to loosen up the soil more than the other harrows referred to. Some, I know, will think that this is more cultivation than is necessary in the orchard, but if they turn to the methods followed by the best fruit growers they will see that this method is being followed because it pays.

#### COVER CROPS

The object of ceasing to cultivate the orchard by the end of July, or at least the first of August, is because the growth of the tree has been completed by this time and there should now be an ample supply of plant food for the trees' requirements during the balance of the season. This also affords us an opportunity of sowing a crop to serve as a cover in the orchard during the fall and winter, and besides, the crop so sown takes up the available and surplus supply of soluble plant food, and holds it until the following spring, when the cover crop may be turned under and on decaying the plant food will again become available to the trees. At the same time we are increasing the supply of organic material in the soil which plays a very important part in the soil reactions, and if legume crops are occasionally used we can increase the supply of nitrogen, which is the most valuable and costly element that is required by the orchard.

If we faithfully cultivate as we should for the above two reasons, we will never be troubled seriously with weeds in the orchard. Even should the orchard be full of twitch or couch grass it can be got rid of in a very few years by the careful following up of this cultivation

in the early months of the season and then by smothering it in the fall by the use of a cover crop such as rape or hairy vetch, which makes a rank, dense growth during the fall months.

**CULTIVATION THE BEST**

In regard to sod versus cultivated orchards the advantages that the cultivated orchard has are pretty well understood. The great majority of profitable orchards are cultivated. The best advice to follow if one has a good, profitable, bearing orchard in sod is to leave it as it is, for there would be no good reason in changing to cultivation, and in changing from sod to cultivation one might easily lose one or two seasons' crops. If the sod orchard is unprofitable and not in a good, thrifty condition, change to cultivation, and by the use of manure and cover crops it can soon be brought into a profitable condition. It is safe to say that in future

plantings that are properly handled, the method followed will be cultivation right through the life of the orchard. Were cultivation systematically followed from the beginning of the orchard we would have a much larger number of annual bearing orchards. It has been amply demonstrated in the west by many growers, and also in the east, particularly in the orchards of Mr. B. J. Case, of New York State, that orchards should bear annually profitable crops, and these crops are secured chiefly by the methods of good cultivation adopted.

Some growers are often discouraged, for after giving one season's good management in this respect they do not get the results they anticipate the following year; but this is not to be expected, for it usually takes from two to three or more years of good cultivation to get the orchard into good bearing.

**The Value of Bees in the Orchard**

Morley Pettit, Provincial Apiarist, Guelph, Ont.

THOSE who have driven a horse and cultivator close to the hives in the orchard may say their value is negative. Nervous fruit pickers wish them on the other side of the fence; but the observant grower considers bees a necessity in the orchard during the blooming period, even if the hives are placed elsewhere.

By persons of a poetic turn, bees have been called the "Marriage Priests of the Flowers," because they bring together those opposing elements which produce fruit and do it more effectively than any other agency.

There are three media by which pollen is carried from flower to flower. Water operates in the case of certain aquatic plants. Wind does duty for such trees as pines. Animal life, principally insects, do this work for the flowers which produce the orchard fruits. Take a simple illustration: At the Maryland Experiment Station, a Grimm's Golden apple tree of medium size and very symmetrical was taken just before the blooming period and divided into three equal portions. One-third of the tree was covered

with muslin to exclude all insects and wind; one-third was covered with mosquito netting to keep out insects and ad-

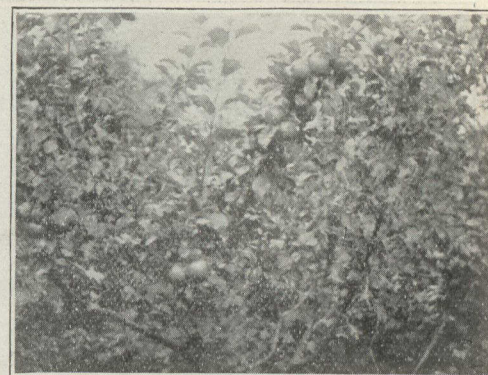


**An Unprotected Bush—Fig. 2**

This bush produced an excellent crop of fruit. mit wind; the remaining one-third was left open to admit both wind and insects. The tree was kept covered in this manner during the entire blooming period. The part covered with netting set one apple. The part left open set nine apples. The observer did not report on the part covered with muslin; but from our own and other experiments, we should judge that it was barren.

Each fruit blossom offers a double invitation to the insect. Showy petals attract the eye, and aromatic nectar invites the appetite. Honey bees accept most readily and are most welcome. They are more valuable than others for several reasons:

First, nature compels them to seek food in the hearts of flowers, because they cannot secure it elsewhere. Besides water and a little salt they eat nothing but honey and pollen. Even when other sweets are offered them they only eat it when no nectar is to be found in the flowers.



**Cox's Pomona—Fig. 3**

Insects were excluded from the branch to the right and it bore no fruit.

Second, their bodies and legs are comparatively large, and thickly covered with branched hairs, making it impossible for them to reach the nectar of the blossoms, without carrying away on their persons the pollen which will be distributed on the next blossom they visit.

Third, their numbers in the orchard can be controlled. Wild bees and other insects may or may not visit the orchard, depending on the season and the weather. Bees can be protected through a severe winter and they can be hived in sufficient numbers where they will do their work. In catchy weather wild insects seldom visit the orchard, but one hour of sunshine brings out the bees and sets them buzzing thickly on the nearest flowers.

**WHAT INSECTS DO**

To show the value in the orchard of insects, of which I have shown that hive bees are chief, I cannot do better than tell the story of the accompanying illustrations, taken from the British Journal of the Board of Agriculture, March, 1911. Professor W. B. Little, instructor in horticulture, Armstrong College, Newcastle-on-Tyne, tried the experiment on two Comet red currant bushes, which were alike in every respect, except that he covered number one with netting during the blooming period to exclude insects; and left number two exposed. Insects worked freely on the blossoms of



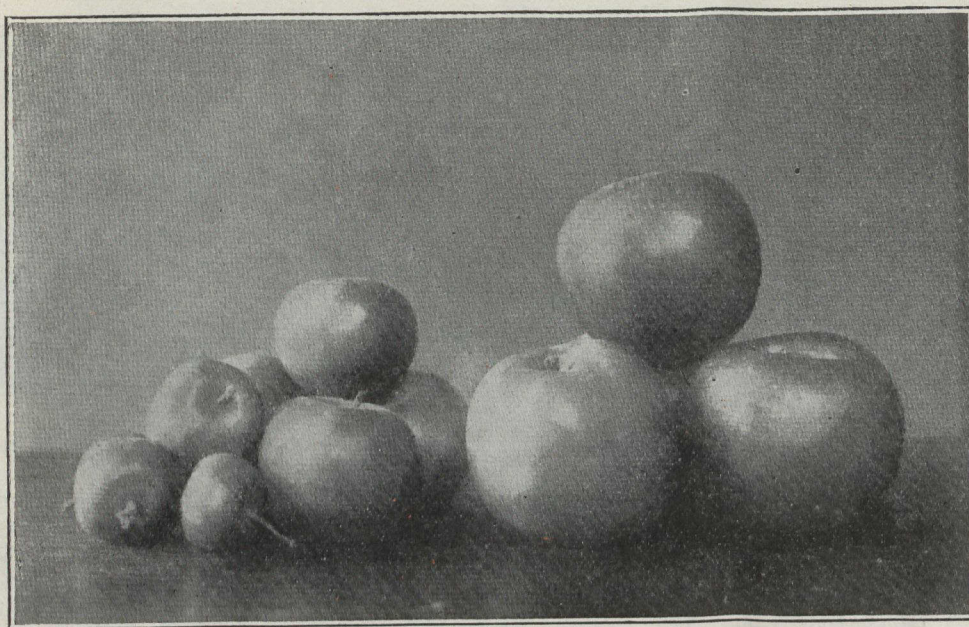
**Early Victoria—Fig. 4**

The middle branch was not protected from insects until after pollination had taken place, and this branch produced well-developed apples.



**Comet Red Currant—Fig. 1**

Note absence of fruit.



**Results of Experiment in Pollination at the Oregon Experiment Station**

On the left are shown some self-pollinated Newtons that produced at least one-third of the apples under sized. On the right are some Yellow Newtons that were pollinated with Grimes Golden. There were no small apples.

number two, but of course were unable to touch those of number one. As will be seen by the illustration number one grew a profusion of leaves and no fruit. Number two was heavily laden with luscious currants. He tried a further experiment with apple trees. Figure three represents a tree of the variety "Cox's Pomona." The branch to the right of the illustration was covered with netting to exclude insects from the blossoms, and as a result bore no fruit. Lest some one might say that the covering prevents development of the fruit he took the tree illustrated in figure four, variety "Early Victoria," and left it all exposed to insects until immediately after the blossoms had been pollinized, then the branch in the middle of the illustration was covered with netting in the usual way; but the deed was done—the bees had fertilized the blossoms, and the fruit developed quite as well as though the netting was not there.

At the Oregon Agricultural Experiment Station, C. I. Lewis and C. C. Vincent tried experiments to show the value of the cross pollination by insects over self pollination, of apples. The illustration showing the result of their experiment requires no explanation.

A student of the Ontario Agricultural College, P. C. Dempsey, wrote his graduating thesis on the results obtained by careful investigation in the old Bay of Quinte Experimental Station orchards, near Trenton, in the season of 1910, the object being to ascertain the importance of cross pollination, and the best pollinizers for the Spy in this district. The system followed was that of bagging the clusters of blooms just before they were ready to open. Bags

were tied over the fruit spurs and blossoms and left until the danger of other fertilization was over. The blossoms so bagged were left to fertilize themselves. As soon as danger of cross fertilization was over the bags were removed. The number of clusters setting fruit, and the number of fruits set were counted and a record kept. Apples were counted as set when they reached a diameter of five-sixteenths of an inch, and gave every indication of reaching maturity. After danger of June drop was over, and the apples had reached a little better than the half grown stage, the apples resulting from the self pollinized flowers were tied up in small mosquito netting bags to prevent loss. As the variety reached maturity the fruits maturing were again counted and checked off.

Of the seven thousand and forty-five blooms bagged, two hundred and forty-eight flowers set fruit, while only nine apples matured from the whole number. The great loss of small apples set was during June and July, which seemed to indicate that June drop may be caused by self pollination.

Mr. Dempsey very aptly concludes that these results indicate clearly the need of insects for the pollination of orchards; for while some varieties can produce apples with their own pollen, a very small percentage of bagged flowers set fruit; whereas, on the other hand, flowers exposed to insects set and mature from thirteen to twenty per cent., which makes a good crop.

There are two hard, solid facts I would leave with fruit growers in this connection. The first is well recognized—the necessity of insects for the production of well developed fruit. The second may

not have been presented in just this light. It is that hive bees, which are good for the purpose, can be placed in the orchard in sufficient numbers to ensure the work being done. Fruit growers who make no provision for bees in their orchards, and growers who trust to luck for help to pick their fruit, are in exactly the same class. If they get a good set of fruit and get it properly picked it is not the result of their own business organization.

### **Refrigeration in Relation to Fruit Growing\***

**I. A. Ruddick, Dairy & Cold Storage Commissioner, Ottawa**

It is one thing to keep apples merely from rotting and another thing to preserve them in that crisp, juicy condition which adds so much to their value and encourages large consumption. Some varieties may be preserved in ordinary storage as long as it is desirable to keep them but most of the standard varieties could be delivered to market in better condition and with less loss from decay if they were promptly cold stored after picking. I want to emphasize this point. It is of the highest importance that there should be as little delay as possible. A delay of one week between picking and storing will shorten the life of the apple even in cold storage by many weeks. This applies particularly to the early or quick ripening varieties.

Before we attempt to carry apples much past their regular season we must consider carefully whether we are likely to find a profitable market for them or not. It would not be advisable to carry some varieties into the season for others of superior quality, but choice dessert apples like the Fameuse and McIntosh Red, for instance, will always find a market if in good condition. I mention these two varieties because I have made careful tests with them more than once, and have had no difficulty in keeping them in perfect condition until April or even into the month of May.

The Gravenstein is a variety which responds to cold storage treatment. I do not know of any variety which is so much improved in carrying quality by prompt cooling after picking. The season for the Greening has been extended in New York State by at least two months. In the month of April, 1910, our Department sold two hundred boxes of Greenings in Calgary after keeping them all winter in cold storage. Although apples of the color of the Greening are not in demand in the western markets, these apples sold well because of their excellent condition. There was absolutely no waste, and the whole lot was sold in the original boxes as packed in the orchard.

The King is another variety which

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



does well in cold storage, especially if it is well colored and stored promptly. Always with that provision. In the fall of 1910 I procured twenty boxes from Mr. W. H. Bunting for the exhibition

which was held in London in 1911. They were in perfect condition when shipped from Montreal in April last, and were reported as having kept exceedingly well several weeks later.

## Cultivation and Size of Fruit

F. E. Ellis, B. S. A., Peterborough Co., Ont.

**T**HERE is an intimate relationship between the amount of cultivation that we give our apple orchards and the size of fruit. Good size for the variety is an essential quality in a first-class apple that will produce "Fancy" or "No. 1." And this is the class that we are all aiming to produce. Mr. John Beemer of Brant Co., Ont., whose orchard we visited last summer, unwittingly performed an experiment that shows with remarkable clearness the relationship between size of fruit and orchard cultivation.

Mr. Beemer's regular orchard practice is to cultivate intensively until July, and then seed to a cover crop of clover, which is plowed down the following spring. Last spring, however, Mr. Beemer undertook to spray several orchards beside his own and was kept so busy that the cover crop was not plowed down in part of his own orchard, and at the time of our visit, on the first of July, there was a rank growth of clover in one-half of the orchard while the other half was being cultivated as usual.

The apples on the trees in the cultivated portion were more than twice the size of those on the adjoining trees that were surrounded by cover crops. "The explanation," said Mr. Beemer, "is easy. That rank growth of clover has been robbing the trees of both moisture and easily available soil fertility ever since growth started. The food that should be devoted to producing me a good crop of apples is being used to produce a good crop of clover that will simply be plowed under."

### LESS FRUIT SETS

Another serious loss that is almost sure to follow, will be a smaller setting of fruit the following spring. It is in the spring of the year that the fruit buds that determine the next year's crop are developed. Having the orchard in sod, or allowing the cover crop to grow as Mr. Beemer did, will interfere with the proper setting of fruit buds.

We believe in orchard cultivation. One cannot cultivate the orchard too frequently up to the first of July but after

that, cultivation will be a detriment. It is then well to sow the cover crop in order that the fruit may mature and develop a good color. The cover crop by robbing the tree of moisture will also tend to harden up the wood to withstand the cold of winter.

There may be some soils that are so dry that cultivation the year round is advisable. On other soils unusually rich or moist it may be well to leave the orchard in sod for a few years. But with the most of us intensive cultivation in the early part of the summer, followed by a cover crop, will give us the best quality and the largest sized fruit.

## Sweet Pea Culture

W. T. Macoun, Ottawa, Ont.

As soon as sweet peas are well up they should be staked or trellised. Wire netting is quite satisfactory, and as it can be obtained much easier by city people than brush, it is most commonly used. Brush is unsightly, in our judgment, reminding one for a long time before covered with the vines of dead branches which should be removed. The trellis or brush should be at least six feet high, and if the soil is rich nine feet or more will be found necessary.

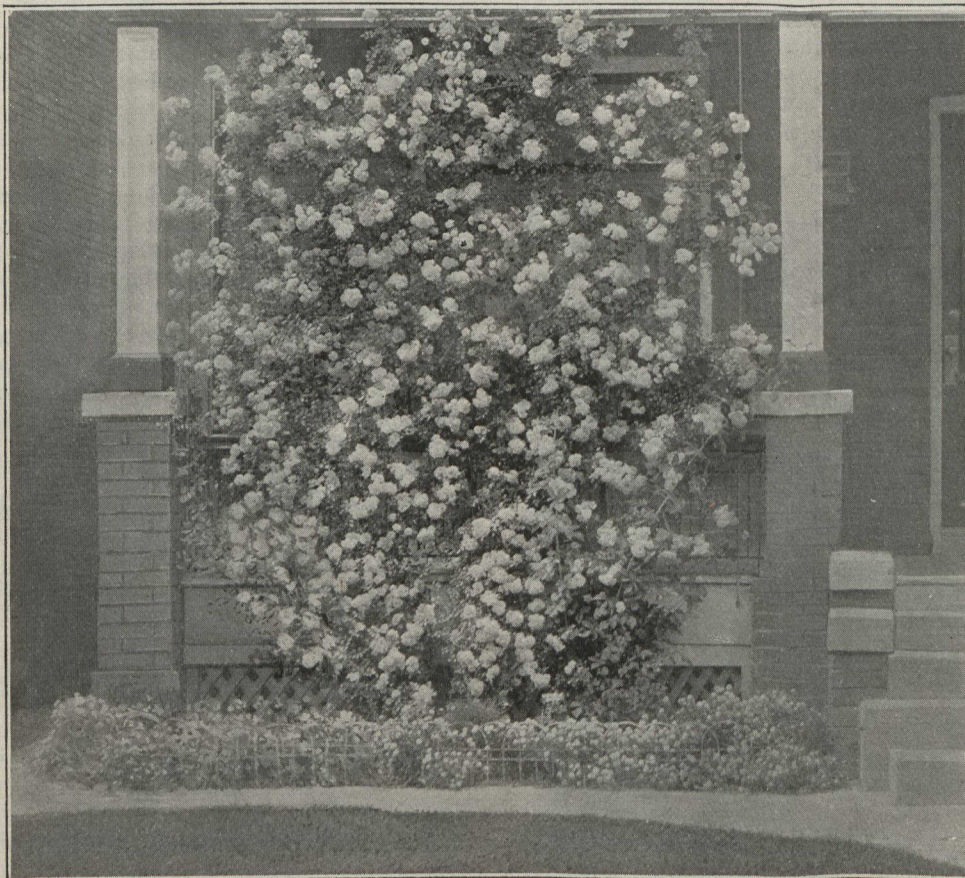
Sweet peas usually require little or no watering until they begin to bloom. In Ottawa where nearly every one has a hose and nozzle, and where holding these helps to keep one cool on a summer's night, I fear that too frequent watering is the rule, with the result that the plants are made soft and when conditions are favourable disease attacks them, or in other cases where the ground is very rich they run too much to vine. When sweet peas begin to flower they need an abundant supply of water, but it should be judiciously given.

The farmer and market gardener cultivates his soil in order to conserve moisture and let air into the soil and he gets luxurious growth without any artificial watering. In many cases the keeping of the surface soil loose on each side of the row of sweet peas will conserve sufficient moisture until well on in the summer without watering. Even when watering is done it is desirable to loosen the surface soil afterwards, as the roots of the plants require air as well as moisture.

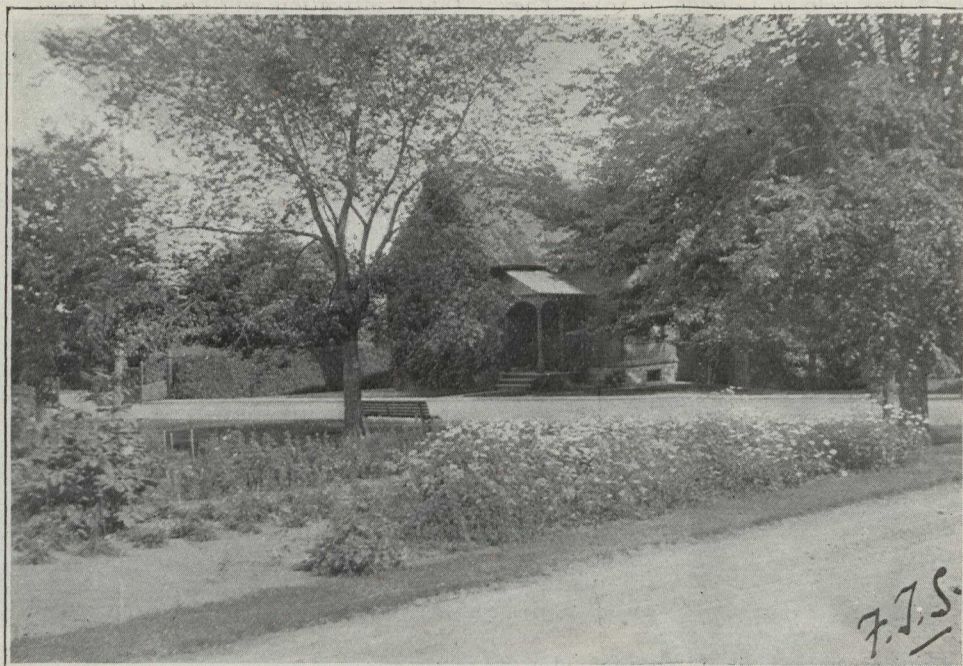
### WATER IN A TRENCH

In order to keep the stem of the plant hard, so that it may resist disease in the ground, we recommend watering in a trench about six inches away from the plants. The water soaks down, cooling and moistening the lower depths of the soil but leaving the surface of the soil about the stems fairly dry.

On some soils a very important assistance in the conservation of moisture and cooling of the soils is the mulch. This may be altogether of lawn, or, better



A Three Year Old Dorothy Perkins Rose Grown by Mr. Hornshaw, 40 Simpson Ave., Toronto, Ont.



The Gardener's Lodge, Experimental Farm, Ottawa, Chrysanthemum Maximum in foreground

still, short, rotted manure over which are put lawn clippings. A mulch of this kind eighteen inches on each side of the row of sweet peas and two or three inches in depth will also prevent the surface soil from being tramped hard. While the mulch should come near the stems it should not actually come in close contact with them.

#### KEEP SWEET PEAS CUT

A thorough watering twice, or even once, a week is better than watering every day. It is scarcely necessary to say that no pods should be allowed to form if continuity of bloom is to be obtained. The peas should be cut every day or at most every other day. A difficulty most gardeners experience is to get the sweet peas kept cut as they should be. A short row kept well cut is much more satisfactory than a long row neglected. One row twenty to twenty-five feet long will more than keep a household supplied with flowers and even ten feet would give an abundance of bloom, and from this length it is not too great an effort for anyone to keep the peas cut, even in the hottest weather. Peas should not be pulled from the vines; they should be cut off with as much of the stem as possible.

### Growing Dahlias

J. McP. Ross, Toronto, Ont.

The culture of dahlias is so simple, anyone may soon have a stock of dahlias by starting with a few tubers. Of course, like everything else, they respond readily to good care and liberal cultivation, by using plenty of manure, bone meal, nitrate of soda, and water.

As a rule, dahlias do better when the hot sun in the afternoon is shaded from them. The flowers last a long time if

cut in the early morning or after sun-down, placing the stalks in water and keeping them in a cool place.

Varieties that have been cultivated a great many years gradually deteriorate, becoming more or less single. All plants do this more or less, and this deterioration may account for the blighting of the young flower buds. This necessitates new varieties possessing vigorous habits of growth. To counteract this decay florists have to resort constantly to raising new sorts from seed. This restores the plant to its natural type.

A good guide for planting out very tender plants is to test the temperature of the soil. Unless the temperature of the soil is at least as high as 50 degrees it is better to keep them out of the ground a little longer. If the ground strikes cold to the hand when planting it is best to go slow with setting out very tender plants of any kind. It is better to let them harden well in cold frames where they can be protected, than to chill or freeze them in the border. Even should there be no actual frost, continuous chilly wet weather will often give them a set back they do not recover from until quite the end of the season.

#### DAHLIAS

Dormant roots of dahlias, or roots barely started, can be planted out of doors about the end of May. Roots that have been started indoors or in a hot bed should be hardened off gradually to outdoor conditions, the same as recommended for bedding out plants. The roots of these started early should not be planted out until about the first or second week in June after all danger of frost is over. The foliage of the dahlia is very easily touched by frost. Dahlia roots should be set about eighteen inches

to two feet apart, if planted in rows. Place a stake to each plant when set out, it sometimes means saving the plant from being broken off later for want of tying, something that often happens to the growth of dahlias. A fairly rich, light, loamy soil suits dahlias best.

### The June Care of Flowers

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

Chrysanthemum plants that have been grown indoors from cuttings or slips, or from divisions of old roots, in March or April, may be planted out in the garden, or potted into large pots, in rich soil in June. If potted treat them as you would geraniums in pots. These plants like plenty of water at the roots.

Stand old plants of Calla or Arum Lily out of doors in the shade in June. Do not dry them too much at the roots in the summer.

To have good geranium plants that will flower all winter, they must be prepared in the summer. The best plan is to secure some strong young plants of good varieties in June, in four or five inch pots. Re-pot the plants into six or seven inch pots. Pinch out the tips or terminal points of each shoot or branch so as to take off a very small piece of the stem as well as the topmost leaf or two. Keep the tip of each shoot pinched out as soon as it is six or eight inches in length until about the middle of August. Keep all bloom buds and blossoms picked off, stem and all, as soon as they appear until September, when the plants should be allowed to grow and flower.

After the plants have been re-potted in June, plunge or sink the pots to the rim out in the open ground in the garden. Put an inch or so of coal ashes underneath the pots when sinking them into the ground. This will keep out earth worms. Pot the plants in good rich potting soil and put in the bottom of each pot nearly an inch of broken flower pots, coal cinders, or gravel for drainage when re-potting them. Give them plenty of water during the summer.

Impatiens, or Bloom-for-Ever, will grow out of doors from June until the end of August. Plant them out about the end of June in light, rich soil in the open. Spray the foliage frequently to keep down red spider and other insect pests.

Old plants of begonias should be stood out of doors in partial shade during the summer.

Valotta and Amaryllis may also be stood out in partial shade from June until the end of August. If they require re-potting it should be done about the end of July. Do not re-pot them too often. A top dressing or mulching with good rich soil is often better than re-potting these plants.

## Canadian Gardens--Picturesque "Inglewood"

Wm. Hunt, Ontario Agricultural College, Guelph

ARTICLE No. 6

THESE are few places in western Ontario that are more beautifully situated, or that have more natural beauty, than have the gardens and lawn of "Inglewood," in the city of Hamilton. Occupying as they do an elevated position several hundred feet above the level of Lake Ontario, on the steep incline of land leading close up to the

texture, its spacious verandahs, and the stone sculpture work that adorn its walls being prominent features of its architectural beauty. Members of the Royal Family who have visited Canada, as well as almost all of our Governor-Generals, have been hospitably entertained within its walls at various times in its history.

It is, however, of the lawns and gar-

to my readers for this slight deflection from the subject proper of this article.

### THE APPROACH

The residence is approached by a winding carriage drive, from which almost the whole vista of the lawns can be seen through the openings between the fine ornamental trees and shrubs growing along its edge. Among these last-named are to be found magnificent specimens of the *Liriodendron tulipifera* (Tulip Tree), Catalpas, Flowering Chestnut, Double-flowering Peach, and others, and a splendid specimen, upwards of fifty feet in height and almost as much in breadth, of the double-flowering Chinese Cherry (*Cerasus sinulata*). This beautiful specimen is, literally speaking, a huge pyramid of pure white, and a landmark that can be seen for several miles, when it is in full flower. It is a pity that this kind of tree is not more hardy than it is. It seldom succeeds well outside of the Niagara district on this account. The tree in question was planted about sixty years ago, soon after the residence was built. The ice storm that played such havoc with the telephone and telegraph wires some twenty years ago in Hamilton damaged this fine old tree very materially. Since then it has never flowered as luxuriantly as before.

### SOME FINE TREES

The irregular fringe of trees skirting three sides of the five or six acres of lawn must not be forgotten. The groundwork of this beautiful belt of trees is made up of fine specimens of the Norway Spruce, many of which are upwards



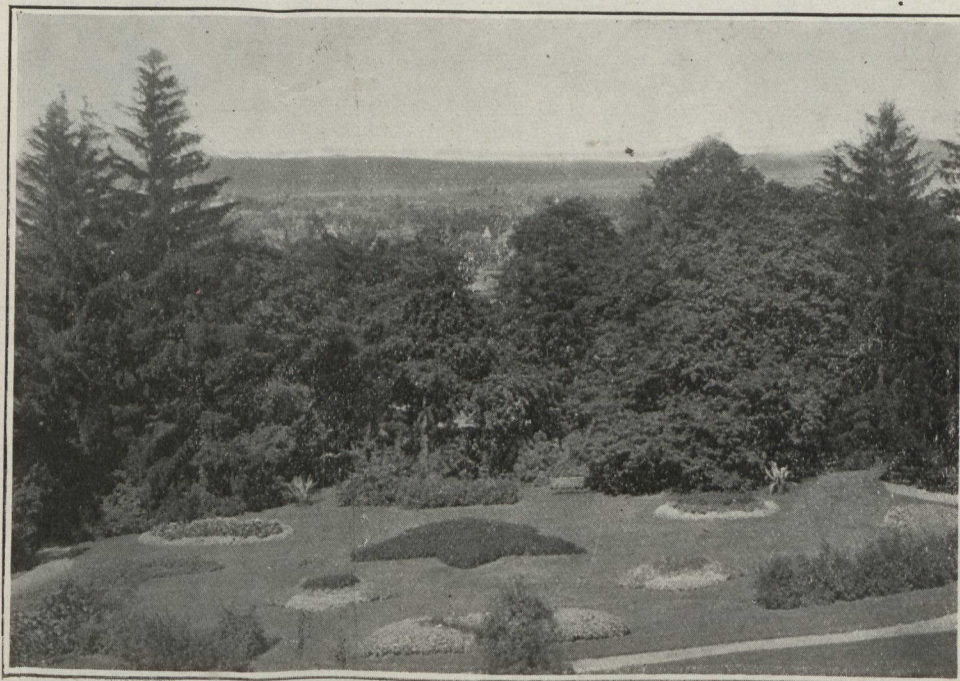
"Inglewood"—The House and Part of the Lawn

cliff-like limestone formation of the Niagara escarpment, these grounds are naturally very attractive.

The panoramic view from the terraces on the lawn is strikingly beautiful. The lawn with its fringe of fine ornamental trees, through which can be seen glimpses of parts of the rapidly extending city, as well as of Hamilton Bay and the strip of land known as "The Beach," make up the foreground of a very beautiful landscape picture. The town of Dundas nestled below the high hills to the west, and the thickly wooded heights of East and West Flamboro, and as far eastward as the eye can reach over the blue waters of Lake Ontario—even as far east as the city of Toronto—form a background to the picture of which words will utterly fail to convey anything like an adequate conception. The scenic beauty unfolded to the eye from the points mentioned can scarcely be equalled in Canada. The view is still more extensive and beautiful when seen from the cupola and promenade platform on the top of the residence, or from the top of the cliffs or mountain to the south of the residence.

The residence itself is a fine stone structure of the Gothic style of archi-

dens that I am expected to write about, so that I must not linger over scenes and incidents, many of which the writer was closely interested in. The latter statement will, I trust, be sufficient excuse



A Portion of the Lawn and Flower Beds at "Inglewood"

of sixty feet in height. Interspersed through these are large specimens of the European Larch Fir, its pale yellowish-green foliage showing up very conspicuously against the more sombre-like green of its near relative, the Norway Spruce. Here and there in openings between the spruce are to be seen some fine specimens of the Kilmarnock or Weeping Willow (*Salix pendula*). The long pendulous racemes of its yellowish-green growth, often four or five feet in length, hanging quite perpendicular, present a very unique and pleasing relief to the dark green of the spruce.

The foreground of this belt is made up of many varieties of trees that are quite rare. Numbers of the Cerasus or wild Cherry, including *C. mahaleb*, *C. avinum*, and others, many of which are seedling varieties of merit, some of which can be seen in the illustrations. These and many others, such as Locust, Weeping Birch, and Maple, help to relieve the sombre hue of the evergreens. In the immediate foreground are dotted groups of rare shrubs, such as *Forsythia Fortuneii*, *Weigelas*, English Hawthorn, *Spireas*, *Deutzias*, *Halesia* or *Snowdrop Tree*, and *Altheas*. The very rare European *Laburnum alpinum*, with its long drooping racemes of bright yellow flowers, can be found among the hundred or so varieties of flowering shrubs to be found scattered about on the extensive lawns. Two nice specimens of the Manitoba Maple are also to be seen. These trees were brought from Manitoba on the first through train over the Cana-

dian Pacific Railway when the distinguished party of some of Canada's most noted statesmen went through to Vancouver for an inspection trip of this gigantic railway enterprise. These trees are now about twenty feet in height and are of more than passing interest for the reasons given.

One very pleasing feature of these lawns is the naturalization of the wild English Violet. Some years ago some seed of these was obtained from England by the writer and sown very early in the spring. The lawns are, at the time of writing (May 3rd), literally

purple with these dainty little flowers, more especially on the partially shaded portions of the lawn. The perfume from them is very pleasing and noticeable some distance from the lawns. These violets are specially adapted for this work on partially shaded lawns.

Winding walks through the lawns lead down to extensive vegetable gardens and fruit orchards. Alongside of these paths are to be seen some fine pillar roses and flowering shrubs.

The vegetable gardens cover a space of about an acre in extent. The walks  
(Concluded on page 159)

## The Perennial Border and its Best Flowers

F. E. Buck, B.S.A., Central Experimental Farm, Ottawa

**I**F you make a perennial border, plant in it only the best flowers. Don't be satisfied with the inferior kinds which appeal to you personally.

It may be that you wish to specialize in native plants. That is a worthy ideal. Or you may prefer the old-fashioned flowers. Or, perhaps, to have a little of everything striking in order to get some color effect. Very good; suit and cultivate your own taste. Don't attempt to copy other people's borders too much. Remember, the flowers you plant are to be your friends, and, as was said before, choose those you like best. If you are furnishing a house you plan and consider the appropriateness of the furniture. Just so with a border. Remember also that the flowers are to stay where you put them for several years. Choose, there-

fore, the most suitable place in the garden for them. Some will want sun, some shade, others light, others shelter from wind. Some will require light soil, others heavy; all this you can arrange for them simply enough.

### VARIETIES FOR ALL

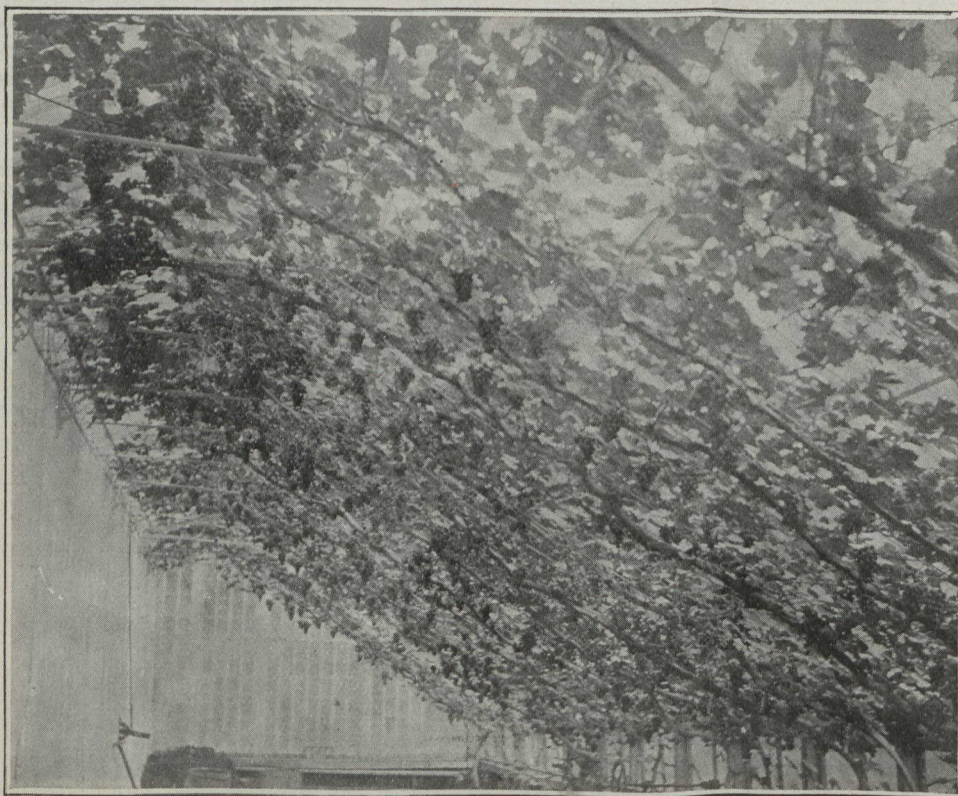
You may be very ambitious and want flowers to admire in their places, or flowers to cut for the house, flowers for the buttonhole, flowers for the church jardiniere; flowers of all colors, flowers of all fragrances, and flowers of all sizes; all these you may have in a perennial border, because the flowers of a well-planned perennial border will last from the time when winter's snow gives place to the timid whiteness of the snowdrop until that time when the maple leaves glow in the evening of the year.

Besides the joy of tending and picking the flowers of this long season there is also the distinct pleasure of planting, replanting and re-arranging your plants both before and after their seasons of bloom. Bear in mind that intimate personal attention is the key to success with plants of any kind. There is no substitute for this.

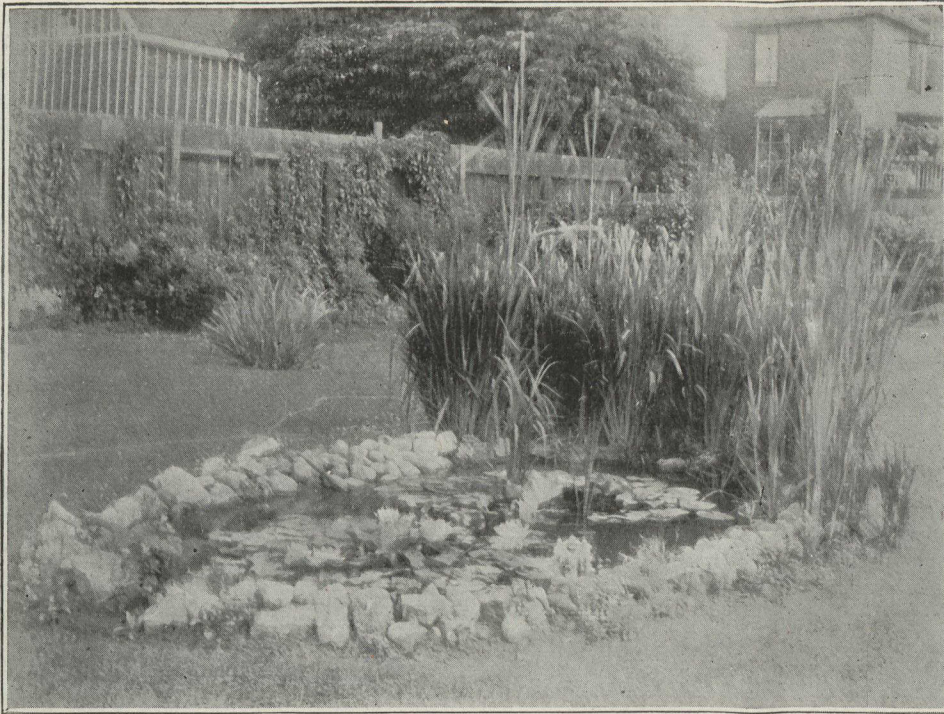
The perennial border should add to the beauty and dignity of your home. It should be conspicuous, but not too prominent; dignified rather than gaudy. It should reign supreme wherever it is placed, but it must not look isolated. Do not hurry yourself in its making. It takes time to make a good border, and there is infinite pleasure in the making.

The arrangement of the plants in the border will depend upon the owner's taste, but with one exception the rule is to plant in the order of height, with the tall plants at the back. There is no rule for the distances apart at which the plants should be set, but don't overcrowd.

When first starting the border, plant without considering color effect. Work out your ideal in this and other ways gradually.



A Section of the East Vinery, "Inglewood"



The Lily Pond in Mr. Armitage's Garden, Toronto

## A Simple Aquatic Garden

J. McP. Ross, Toronto, Ont.

ANYONE who has even only a small piece of land may have an aquatic garden in it if they so desire, as its construction is simple and the expense light. The illustration on this page shows an aquatic garden created by Mr. and Mrs. Armitage, of Toronto, just west of Exhibition Park, and was pronounced by R. Cameron, superintendent of parks, to be the happiest effect he ever saw.

It is just a shallow basin dug out of the earth and similar in shape to a gigantic spoon. Over this was a coating of cement to the edge of the pond. The excavation was filled with water from a hose nearby, and in it, as may be seen in the illustration, were placed water lilies and other suitable flowers. A border of rough stones was placed around the edge of the basin to separate it from the flat lawn.

Around one end of the pond there were grouped a dozen or so Japanese Iris. These were placed in several groups so that one could see through them, and the surface of the little pool reflecting the blue or white of the sky above, while nestling on its placid surface were the nodding crowns of the lilies. The effect was simply sweet, and cost only a few hours' pleasant labour. It was generally surrounded with some birds bathing and drinking, and at all times, from spring till fall was a place of interest.

### VARIETIES GROWN

The plants grown in the pond by Mr. Armitage were the *Nymphaea Odorata Luciana* (rosy pink flowers), interspersed

with water hyacinths, water poppy (*Limnocarum plumerii*), the Common Arrowhead (*Sagittarius*). Amongst the tall plants were the Common Cattail Flag (*Typha Latifolia*), *Calla palustris*, *Eulalia Japonica*, *Eulalia Japonica variegata*, and the Japanese Iris in several varieties. Bordering on the low edges were the swamp forget-me-not, *Myosotis palustris*. The soil was rich garden soil, mixed with rotted vegetable muck or peat from the marsh edge, and mixed with rotten cow manure.

The average depth of water in any lily pond should be two feet, though their cultivation is successful in shallower water. Of course, when shallow, the water must necessarily be warmer. Two feet allows one foot for soil and one foot for water.

For outdoor cultivation of tender kinds the roots may be planted in pails or boxes, and placed in the pond, and then towards winter the water is gradually drained off and the plants are carried into a frost-proof cellar till spring. It is not necessary to have any fountain or continuous flow of water, as the plants flourish better and bloom more freely in still warm water.

### MAKING THE POND

When making a small pond, if the soil is too porous after the bottom is properly smoothed, pound it firmly, then put a layer of blue clay to a depth of six inches, and pound this firmly and smooth. If possible, put on a thin layer of concrete right up to the edge and over

it. Finish up with a crown of small stones around the edge. This is not necessary, but it gives a nice effect.

Place here and there around the pond a clump of marsh plants with as natural an outline as possible. A hillock of rockwork on one side planted with rock plants, hardy grasses, and an occasional shrub or herbaceous plant, is very attractive. Leave spaces through which you can observe the water lilies and the water effect with its sky reflections. Seeds of water lilies enclosed in a ball of clay can be dropped in the pond at various distances. A few plants of the marsh marigold and other water-loving plants will do well, particularly any of the iris family.

## Bulbs After Blooming

Rev. Jos. Fletcher, Whitby, Ont.

If you wish to use the same bulbs year after year, it is important that they should be properly cared for after blooming. If they have been planted deep enough, annuals or bedding plants may be grown between the rows or groups of bulbs, or even on top of them, without injury. The bulbs may remain in the same bed for about three years, after which they will need to be taken up and divided, or they will deteriorate through overcrowding.

If preferred the bulbs may be taken up as soon as blooming is over, care being taken not to break the foliage. Place them in a trench or box separating the varieties, and cover well with earth. Let them remain there until the foliage has withered away, and the bulbs are thoroughly ripened, after which they should be taken up, sorted and stored away until required again for planting in the fall. Those who would find the treatment here out-lined too much trouble to undertake, need not be discouraged, as they can obtain good results by planting in rich garden soil, if the culture is deep and drainage good.

A Good Support for perennials, or other plants needing stakes, can be made out of young cherry, elm, or other straight growing saplings. The twigs support the heavy heads of bloom, such as phlox, in a most natural manner, and if the bark shows it looks harmonious. Some double white petunias supported in this way last summer made a fine show. They were three feet high and nearly as broad. Every flower seemed to show. Little or no tying is necessary.—A.T., Queensboro, Ont.

It is a question whether petunias, annual phlox and verbenas ever do badly once they acquire a few leaves, and all three are very brilliant in the late summer and early fall.

## Potato Growing in Ontario

C. A. Zavitz, Professor of Field Husbandry, Agricultural College, Guelph, Ont.

**T**HERE are probably more people in Ontario growing potatoes than any other single crop. This is owing to the fact that potatoes may be grown extensively on the large farms for commercial purposes or they may be grown on farms and gardens of all sizes for home use.

According to the Census and Statistical Report of the Dominion of Canada, there were 152,887 acres of potatoes grown in Ontario in 1911. In that year, Ontario had fifteen thousand acres of potatoes more than the province of Quebec and about four times as great an area as that devoted to potatoes in any other province of the Dominion. Although about one-third of the potato land of the Dominion was located in Ontario in 1911, the supply of potatoes in this province has been insufficient to satisfy the home market. This, of course, is partly due to the fact that the yield of potatoes per acre in Ontario last year was less than that of any year since 1898.

Owing to the scarcity of potatoes, the price has become abnormally high. When prices are high there is usually a desire to considerably increase production. It is hardly probable, however, that there will be an over-production in the potato crop of the present year, as the scarcity and the high price of the seed will tend to restrict the amount planted.

While potatoes thrive on a great variety of soils, they grow particularly well on a rich sandy loam, which contains a considerable amount of vegetable matter. They generally do well on a thoroughly prepared clover sod. If it is desirable to use a commercial fertilizer to supplement the farmyard manure, we find, according to the results of the co-operative experiments throughout Ontario, that a complete fertilizer containing nitrogen, phosphoric acid, and potash, gives more economical results on the average soil than one containing a single element of fertility.

### TOO MANY VARIETIES

There are altogether too many varieties of potatoes grown in Ontario. If only three or four of the most important varieties for general crop were used, larger yields of potatoes of better quality for home use and for the market would be obtained. The Empire State, the Rural New Yorker No. 2, and the Davies' Warrior have given excellent results for general use both in the experiments at Guelph and in the co-operative tests throughout Ontario. The Delaware and the Green Mountain, which apparently have given good results in New Brunswick, have been tested at Guelph

for a number of years, and the results have been fairly satisfactory. Of the early varieties, the Extra Early Eureka and the Irish Cobbler have made fine records. In testing one hundred and ten varieties of potatoes for table quality in the spring of 1912 in which flavour, mealiness, and appearance were taken into consideration, the Empire State secured the highest score, which was closely followed by the Crown Jewel, the Westcott, and the Pearl of Savoy. The Delaware gave thirteen points lower than the Empire State in table quality.

A considerable proportion of the seed potatoes in Ontario appears to be more or less infested with the scab. It would be well to treat the whole potatoes before they are cut for planting. This can be readily done by immersing the potatoes for two hours in a solution made by mixing one pint of formalin with thirty gallons of water. After the potatoes have been treated, they can be dried and prepared for planting. The scab is produced by a fungus growth and cannot be reproduced except from living spores; hence the importance of treating infested seed before planting.

### PREPARATIONS FOR PLANTING

A large number of experiments have been conducted at the Ontario Agricultural College in preparing seed potatoes for planting. It has been found that, on the average, potato sets taken from good sized potatoes will give a little larger yield per acre than potato sets of the same size taken from smaller potatoes. The size of the sets which are planted have a very marked influence on the yield of potatoes per acre. The number of eyes per set exerts a slight influence, but not nearly as much as does the size of the pieces.

Under average conditions it is wise to cut good sized, smooth potatoes into pieces which will weigh from one to two ounces each, and which will have two, three, or four eyes in each set. If there is only one eye in a set the yield is lighter and if there are five eyes in each set there are too many small potatoes. In some sections large seed potatoes will likely be very scarce and very expensive this spring. A potato set one ounce in weight, cut from a two ounce potato, will likely give a greater yield than a half ounce set taken from an eight ounce potato.

I would suggest that where potatoes are very scarce a comparatively small quantity of good sized potatoes be cut into sets and used for seed for the production of potatoes to be used for planting in the following year. For the main crop for table use, however, potatoes

weighing two or three ounces each might be cut into ounce pieces and used for planting to good advantage.

A marked advantage is usually found from cutting potatoes and throwing the freshly cut pieces into land plaster or gypsum allowing as much as possible of the plaster to adhere to the freshly cut pieces. This treatment usually increases the yield of potatoes per acre from sixteen to eighteen bushels.

### PLANT PROMPTLY

Potatoes should always be planted immediately after being cut. In some sections of Ontario it has apparently become the custom to leave the potatoes a few days before planting, believing that an advantage is obtained thereby. This practice was probably originated by cutting the potatoes on a rainy day or on a Saturday when the children were home from school and the sets were kept a few days before planting, and the results have apparently been good. As the result of some ten years' experiments at the College and five years' co-operative experiments throughout Ontario it was found that potatoes which were cut and planted immediately gave an average of about fifteen bushels per acre more than those which were cut four, five, or six days before they were planted.

If the land is a sandy loam the potatoes can be planted to a depth of four or five inches and the land cultivated on the level. If the soil is a heavy clay, however, it is probably better to plant to a depth of only about three inches and to slightly ridge or hill the land at the proper stages in the growth of the potatoes. In experiments conducted for ten years on an average clay loam, the yield was practically the same from level and from ridged cultivation.

Experiments have been conducted carefully by planting potato sets in drills about twenty-eight inches apart with the sets a foot apart in the rows in comparison with the planting of the same amount of seed in rows thirty-three inches apart both ways. Considerably larger yields were obtained from the closer planting.

It is found to be a detriment to use more than one set in each place, as for instance, one potato set two ounces in weight is likely to give a larger yield of potatoes than two sets of one ounce each which are planted close together.

Some people are very particular in planting cut potatoes to so place the potato sets in the land that the eyes will be turned upwards. The results of experiments, however, show that it does not matter whether the eyes or the sur-



**A Productive Vegetable and Fruit Garden in Norfolk County<sup>1</sup> Ont., That of John Trinder, of Port Dover**

This garden comprises about three acres. Mr. Trinder finds onions and celery his most profitable crops, but grows, also, cabbage, cauliflower, tomatoes, parsnips, melons, strawberries and other varieties of produce. He sells most of his products to farmers living to the east of him on land not suitable for the production of these crops. The balance is sold in Port Dover.

face of the cut potatoes be turned towards the surface of the soil.

It is usually wise to harrow the potato land after the potatoes are planted and before the growth appears. This tends to break the crust of the soil and to check the growth of weeds. On many soils the harrow can frequently be used after the potato tops have made a growth

above the ground. The first cultivations between the rows can be fairly deep, but when the fibrous roots penetrate the ground it is wise to cultivate more shallow. Shallow cultivation after the potatoes get a good start keeps down the weeds and forms a mulch which has a marked influence in retaining the moisture.

in the spring as the soil permits. The seed is slow to germinate, and will stand a heavy frost. In heavy soil, the turnip variety is best, as it grows chiefly on the surface. For light soil, the long varieties are better suited, and are rather better keepers than the round sort, though both kinds can be kept during the winter and spring by packing in a box or barrel, mixing in dry earth, and covering with three or four inches of earth.

Early Eclipse, Early Blood Red are good round varieties, and Long Blood Red and Covent Garden half-long are good sorts for lighter soil. Sow seed rather thick and two inches deep. Thin out the plants four to six inches apart in the rows.

#### CELERY

Celery is rather difficult to grow successfully, especially when water is not available. The trench system has been found the best, although it entails a little more labor than planting on the level or in frames. The advantage of the trench is that the roots do not dry out as fast as either of the other two ways. Less water is required and bleaching can be better done.

#### CUCURBITS

Citron, cucumber, squash, pumpkin, and so on, can be started in a box or hot-bed April 20th to 25th, and planted in the garden June 1st, or sown direct in garden June 1st to 10th. Protection at night requires to be given plants when set out, for two or three weeks. Satisfactory varieties are: Citron, Preserving; Cucumber, Short Green, White Spine, Giant Peru and Chicago Pickling; Squash, Crookneck.

## Garden Vegetables for the West

Angus Mackay, Superintendent Experimental Farm for Saskatchewan

**A**T the beginning of the vegetable alphabet is found asparagus. It should be found also in every garden in the west, as it is one of the easiest to grow, and never fails. While some advocate trenching and heavy manuring before planting, it is sufficient if our soil is plowed or dug twelve inches deep, the roots planted in rows thirty inches apart and two feet apart in the rows, each fall after frost sets in a heavy coating of well rotted manure applied, and in the spring dug in about the roots. For asparagus, a bed should be set apart by itself, as the one set of roots will continue for years to produce abundantly. Conover's Colossal and Barr's Mammoth are good sorts.

Beans are not a sure crop. They are easily injured or killed at any stage of their growth, and should never be sown too early, and only the earliest varieties grown. They are never out of danger if the plants are above ground before June 1st. Dwarf Extra Early, Early Six Weeks, and Dwarf Kidney are among the best varieties.

In connection with the growing of cabbage, cauliflower, and other plants, cut worms are very destructive. Poisoned bran—one part of Paris green to one hundred parts of poisoned bran, not too wet—scattered on the soil about the plants, and repeated occasionally, is a reliable remedy.

Cauliflower can be grown in much the same way as cabbage. Only a few of the early cauliflower should be planted at one time, as the heads soon spoil. Planting at intervals of two weeks will prolong the season.

Early Snowball, Early Dwarf, and Early Paris are good and sure varieties. Late varieties, such as Autumn Giant and Le Normand, seldom mature, but can be pulled before severe frost, placed upright on two inches of earth in a cellar or other frost-proof place, and the roots covered two inches and kept moist, but not wet. The heads will mature and produce as good cauliflower, through November and December, as in the open.

#### BEETS

This vegetable can be sown as early

# The Canadian Horticulturist

Published by The Horticultural  
Publishing Company, Limited

PETERBORO, ONTARIO



**The Only Horticultural Magazine  
in the Dominion**

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

H. BRONSON COWAN, Managing Director

1. The Canadian Horticulturist is published on the 25th day of the month preceding date of issue.

2. Subscription price in Canada and Great Britain, 60 cents a year; two years, \$1.00. For United States and local subscriptions in Peterboro (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. Postage Stamps accepted for amounts less than \$1.00.

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 address is ordered, both the old and the new addresses must be given.

6. Advertising rates One Dollar an Inch. Copy received up to the 18th. Address all advertising correspondence and copy to our Advertising Manager, Peterboro, Ont.

7. Articles and Illustrations for publication will be thankfully received by the Editor.

## 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 copies, from 11,000 to 12,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruits, flowers or vegetables.

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

Average each issue in 1907, 6,627

" " " " 1908, 8,695

" " " " 1909, 8,970

" " " " 1910, 9,067

" " " " 1911, 9,541

**May, 1912** ..... **11,788**

Sworn detailed statements will be mailed upon application.

## OUR PROTECTIVE POLICY

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

Communications should be addressed

THE CANADIAN HORTICULTURIST,  
PETERBORO, ONT.

## EDITORIAL

### COUNTY EXHIBITS

For several years a number of the leading fruit growing counties of Ontario, by means of small grants given by their county councils, have made exhibits of apples each fall at the Ontario Horticultural Exhibition. Several of these counties, particularly Norfolk, Ontario, Durham and Northumberland, are now reaping the benefits of their enterprise. During the past couple of years a considerable number of people from abroad have commenced to purchase blocks of land in these counties for fruit growing purposes. Scores of thousands of dollars are being invested by outside capitalists in this way in some of these counties, and the sections affected are reaping the benefit.

At first it was difficult to convince hard-headed county councillors that their counties would derive benefit from any money they might expend to enable exhibits of apples being made by their counties at the Horticultural Exhibition. Even yet there are some county councils that need education on this point. Their doubts are soon likely to vanish, as the results obtained are now so apparent even the most obtuse may see.

It is not so much the number of people who attend the Horticultural Exhibition and examine the exhibits that counts as it is the character of the people who do so. These include not only leading fruit growers but representatives of the agricultural and daily press, government officials and other people occupying positions which enable them to mould public opinion. These people, seeing certain counties well represented by fruit exhibits, become impressed with the fruit possibilities of these districts and henceforth advertise them directly and indirectly in many valuable ways. Those counties which neglect to mould public opinion in this way miss great opportunities for their own development.

### PARCELS POST

The interests of the fruit and vegetable growers of Canada are more directly concerned with the agitation that has now reached considerable proportions in the Dominion House of Commons for the establishment of a parcels post system in Canada than their apathy regarding this proposal would seem to indicate. Two members of the House, W. F. Maclean, M.P., of York County, and J. E. Armstrong, M.P., of Lambton County, are both urging the introduction of this system. Mr. Maclean advocates an unrestricted service, while Mr. Armstrong is contending for a service that will be limited to rural mail routes and the towns and cities with which they connect. For the average fruit or vegetable grower this latter system would be of comparatively little value.

The postal regulations in Canada regarding parcels are apparently designed to prevent their carriage by post. The charge is sixteen cents a pound, and the limit of weight is five pounds. A five-pound package thus costs eighty cents. This charge is so excessive as to be practically prohibitive. In England a similar package can be carried for twelve cents. The contrast in cost tells its own story.

Practically all European countries have

made a success of the parcels post system. The limit of weight in Belgium is one hundred and thirty-two pounds, in Austria, Germany and Switzerland, one hundred and ten pounds, France twenty-two pounds and Australia, Cuba, Great Britain and Italy eleven pounds. The charge for an eleven-pound parcel, which at our rate in Canada would be one dollar seventy-six cents, is in Austria twelve cents, Belgium sixteen cents, Germany thirteen cents, Great Britain twenty-two cents, Italy twenty cents and Switzerland eight cents. In each of these countries a considerable trade has been built up in the shipping of fruit and vegetables, done up in small packages, to customers in the towns and cities. The introduction of a reasonable parcels post system in Canada would make possible the development of a similar trade, and help to do away with the middlemen. Our Fruit-Growers' Associations should give more attention to this matter than they have.

### NURSERY REGULATIONS

In an interview with Mr. Thomas Cunningham, Provincial Inspector of Fruit Pests for British Columbia, published recently in a Vancouver paper, Mr. Cunningham is credited with the statement that although importations of nursery stock into British Columbia this year have been greater than ever before, none have been received from Ontario, the stock having all come in from the western states. Mr. Cunningham further stated that British Columbia should grow all its own nursery stock.

Had the fumigation regulations been designed especially to keep out Ontario stock, they could hardly be more effective than they are. The fumigation station is located in Vancouver. Ontario nursery stock intended for western points in British Columbia has to be shipped some hundreds of miles across the province to Vancouver, where it is fumigated and then be re-shipped to the western portion of the province. Delays frequently occur at the fumigation station which, with the extra shipping, have proved so disastrous, on many occasions, to the stock, Ontario nursery men have practically been driven out of that province. The greatest loss is to the British Columbia fruit growers, as much of the stock grown in Ontario is better suited to certain districts in British Columbia than is stock from the Pacific States.

What is needed is that a fumigation station should be established on the western border of British Columbia. The establishment of such a station has frequently been urged in British Columbia by responsible parties, but as yet no action has been taken. It has seemed at times as if an effort was being made by a few interested parties to keep out the eastern stock, in spite of the requirements of the local fruit growers, in order that the establishment of nurseries might be encouraged in the province as well as to assist those now in business there.

### BOOKS ON HORTICULTURE

In almost every city, town and village in Ontario in which there is a horticultural society there is also a public library. The same condition exists to a considerable extent in most of the other provinces as well. Very few of these public libraries contain books relating to horticulture. Here is a chance for our horticultural societies to do some good work. Were they to appoint a committee to wait on their library boards and submit lists of horticultural books that should be kept in the library for reference



purposes, many of these boards would be glad to comply with their request.

Among the books that library boards should see are kept on file are, Bailey's "Cyclopedia of American Horticulture," Henderson's "Book of Plants and General Horticulture," and other similar standard works, most of which are too expensive for the average person to purchase for private use. Whenever library boards procure such volumes the fact should be announced through the public press so that lovers of horticulture may know that these looks are available for reference.

The officers of the Toronto Branch of the Ontario Vegetable Growers' Association

### What the Big Ones Think

The Association of National Advertising Managers, is an organization of 161 of the leading, brainiest and most influential men in the advertising world of the United States.

The members of this Association represent concerns which have become well known through their extensive advertising, to almost every reader of magazines and newspapers in America. Each member spends on an average \$166,000 per year for advertising, making a total for the whole Association of \$25,900,000. No one can be a member who spends less than \$50,000 per year for advertising purposes.

The stand these men take in regard to improper advertising is well set forth in a platform adopted February 16, 1912, part of which reads as follows:

"In the opinion of this Association, publications should not accept advertising that is calculated to injure any of their readers in morals, health or pocketbook, or that contains unwarranted or extravagant statements."

The reason for the stand taken by these experienced advertising men is not far to seek. They realize that the less dishonest advertising there is published, the more effective will honest advertising become. Space in the publications they use, becomes accordingly of greater value to them, as the objectionable advertising is eliminated.

The Canadian Horticulturist for eight years has refused to print any advertising of an objectionable nature. It has thus contributed its share towards placing advertising on the higher plane, generally, it occupies to-day. But more than that, it has won the confidence of those who read The Canadian Horticulturist, as they realize they will get a square deal from the advertisers who use space in these columns.

The better class of advertisers are realizing more than ever before, the increased value to them of space in publications which will print only good, clean, reliable advertisements. This is one of the big reasons why the volume of advertising of this class in The Canadian Horticulturist continues to increase, and why many of the best Canadian firms, in their lines, are using The Canadian Horticulturist to tell its readers about their goods.

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

have been doing splendid work by arranging for regular meetings of the members of their branch at the greenhouses of different members. The rivalry, not to say jealousy and suspicion, between the vegetable growers in some centres is so pronounced it would be found difficult to arrange for such a series of meetings. The fact that the members of the Toronto branch of the association are proving themselves to be above such things is a pleasing indication that growers are at last beginning to see that they can advance their interests best by co-operating with others engaged in the same occupation, and not by hugging their little secrets to themselves for fear someone else may discover them.

The schools division of the Ontario Experimental Union, in cooperation with the Department of Education and the Ontario Agricultural College, at Guelph, is conducting some valuable educational work among the schools in the rural districts in the growing of vegetables. Circulars are distributed to the schools suggesting simple experiments and giving full directions concerning their conduct. The experiments relate to lettuce, onions and other similar crops. The work is under the direction of Mr. S. B. McCready, and is being attended with excellent results.



### PUBLISHER'S DESK

The special front cover design on the April issue of THE CANADIAN HORTICULTURIST was evidently much appreciated, if we are to judge from the words of approval we have heard from our readers. Officers of horticultural societies and others have gone out of their way to let us know how well they liked the design. We are now planning to publish a similar design on the front cover of our Special Packing and Exhibition Number which will be published on the first of next September. For this number we would like the illustration to show a packing scene in some modern Canadian orchard, the trees of which should be loaded with fruit. Here is an opportunity for some of the leading fruit-growing districts of Canada to advertise their possibilities. What enterprising grower or growers in some of the leading districts of British Columbia, Ontario and Quebec, or the Maritime Provinces, will supply us with the best photograph for use on the front cover of that issue? Any readers of THE CANADIAN HORTICULTURIST who have an illustration which they think will be suitable are invited to send it.

"Why do you publish so few articles relating to fruit in the front part of the paper?" we are sometimes asked by fruit growers, and again the question is, "Why do you publish so few articles relating to amateur flower growing?" The fruit growers would like to see all the front part of The Canadian Horticulturist devoted to fruit growing, while the flower growers would like to see it filled with articles that would be of special interest to them. The answer to both is simple. The cost of publication prevents. As yet the field in Canada is not large enough to support a paper devoted wholly to fruit growing, nor is it large enough to sustain one pertaining only to amateur flower growing. Neither enough subscriptions nor enough advertisements could be secured to make such papers a financial success. The result

is we find it necessary to draw support from both fields and, therefore, have to divide our space so that we can furnish information that will be of interest to both classes of readers. On the whole, however, we hear very little complaint. Everything considered, we feel free to state that there is not another horticultural publication in the world that gives as much information at as low a subscription price as The Canadian Horticulturist and which is as profusely illustrated and published on paper of equal grade.

Among the articles we anticipate featuring in the July issue of THE CANADIAN HORTICULTURIST will be one entitled "What Cover Crops Shall I Grow?" by Prof. C. A. Zavitz, of the Guelph Agricultural College. There will also be an article of unusual interest to the Niagara District dealing with the possibilities of irrigation for that district. This article will be by Mr. T. G. Bunting, of the Central Experiment Farm, Ottawa, who has given this subject considerable attention. The picking and selling of the berry crop will be the subject of a timely article contributed by Grant S. Peart, of Burlington. "The Celery Blights" will be discussed in a profusely illustrated article by Prof. E. M. Straight, of Macdonald College. A number of interesting features are being planned for the garden section, also including the description of another Canadian garden and some timely garden notes by one of our best known authorities. As usual, the issue will be replete with timely, interesting, helpful information.

### Liverpool Apple Market

There was an increase of about 160,000 barrels in the quantity of apples arriving from the United States and Canada last year at Liverpool compared with the previous year, but a decrease of about 120,000 in the number of boxes arriving. The increase in barrelled apples was due to the larger crop in the Hudson river and Nova Scotia districts, and the smaller receipts of boxed apples to the smaller crop in what is known as the box-growing district, west of the Rocky Mountains, and because supplies had been held back in anticipation of higher prices later in the season.

The total apple imports into Liverpool during the season 1910-11 were 649,055 barrels (which included 361,268 boxes, calculated at three boxes to the barrel). The prices for barrelled apples were considerably lower at the beginning of the present year than for the same time last year on account of the larger supplies, due somewhat to a larger crop than usual in Great Britain, but the boxed apples averaged about thirty-six cents a box higher.

### Nova Scotia

Final proof that the great apple crop of Nova Scotia last year almost reached the two million barrel mark is furnished by a statement issued by Dominion Fruit Inspector G. H. Vroom. It shows that the total number of barrels shipped to all markets, including those in Great Britain, South Africa, Germany and the West, amounted to 1,730,496 barrels. There were shipped also 2,086 half barrels and 10,011 boxes.

London received 783,115 barrels, Liverpool 241,080, Glasgow 163,317, Germany 117,933, South Africa 3,570, the West Indies 3,831, the West 176,150 and the local markets 150,000. Prospects point to a good crop for 1912.

## The Standardizing of Apple Barrels

At the recent Dominion Fruit Conference in Ottawa a prolonged discussion was held over a proposal to adopt a standard apple barrel. The discussion resulted in a resolution being passed urging the government to provide two standards for apple barrels, one the 96-quart barrel, commonly used in Nova Scotia, and the other the 112-quart barrel, commonly used in Ontario. The Department of Agriculture was requested to provide for the enforcement of the use by all growers of one or the other of these standards, and that the manufacturers should be made responsible for their size.

Talking privately with the delegates after the discussion, there seemed to be a general opinion that ultimately only one standard will be recognized and that it will be the larger barrel as used in Ontario. While the Nova Scotia delegates fought hard for the smaller barrel, it was said that a number of them personally were favorable to the larger barrel, but that they had been instructed by their association to work for the smaller barrel. Many of the larger growers of Nova Scotia are said to favor the large barrel, and to hold the view that within a few years the majority of growers will do the same.

### THE DISCUSSION.

The discussion was opened by Mr. E. A. Dewar, of Charlottetown, P.E.I.: "In Prince Edward Island," said Mr Dewar, "we get our stock from New Brunswick or Nova Scotia. We ship to Great Britain, where our barrels compete with the Ontario and United States barrels, which are larger. This makes it harder for us to introduce our barrels. It costs no more to head or

to ship the larger barrel, and time is saved in packing them. The British buyers pay more for the larger barrel, as many of them resell from it by weight. The flat hooped barrel looks and sells better than the round hooped barrel, although the latter has strength in its favor. Nova Scotia stock, I find, is not properly matured, and shrinks considerably. The Ontario barrels are better dried, and stand shipping better than the Nova Scotia barrel."

Dairy Commissioner J. A. Ruddick read the specifications for the legal barrel, which stated that it must not contain less than 96 quarts.

Captain C. O. Allen, Kentville, N.S.: "Our Nova Scotia barrel complies with all the legal requirements. We are now accustomed to it, and do not want to be forced to change it. While there is no extra charge for shipping the large barrel at present, it is not likely that this condition will continue, as the steamship companies are not going to continue long to carry twenty pounds a barrel free. Had we used the larger barrel last year we would have shipped 65,000 less barrels than we did. Were we to change to the large barrel the steamship companies would soon notice the change and alter their charges accordingly. I admit, however, that the Ontario and Quebec barrels are going forward at a lower rate proportionately than ours. The appearance of the barrels has little effect on the sale of the apples, as after the apples reach the Old Country the barrels are opened and the apples are resold in small quantities by weight and not in bulk."

P. W. Hodgetts, Toronto: "Ontario

fruit growers do not want to change the barrel they are using, as we believe that we are getting the best of the deal. The British buyers pay us well for the extra weight we give them, and we have a considerable saving in shipping charges."

Capt. Allen: "We are testing the Ontario barrels on a comprehensive scale, and are open to conviction in regard to its merits, but for the present would like to see this matter left in abeyance."

Prof. W. S. Blair, Macdonald College, Quebec: "It is most important that we should have a recognized standard through all of Canada, as the different sizes now used result in injustice in some cases."

R. J. Graham, Belleville, Ontario: "There is a considerable difference in the size of Nova Scotia barrels. The staves vary in length. The onus for the size of the barrel should be placed on the cooperage firms. If Nova Scotia and Ontario are to continue to use different sized barrels I am satisfied, but the barrels used in each province should be uniform in size. Quite a lot of the Nova Scotia barrels are smaller than the legal size. A few people in Ontario are still using the stingy barrel, but ninety-five per cent. are using the large size. In Nova Scotia the great majority use the stingy size."

Capt. Allen: "This stingy sized barrel has appeared during only the last two years. In Ontario the barrels are used for flour and apples, and in Nova Scotia they are used for potatoes and apples. It would be a great hardship if we had to use the large barrel for potatoes."

R. J. Messenger, Bridgetown: "We should be striving for a national standard for Canada. The Nova Scotia barrel is

## THE Canadian Nursery Co. LIMITED

10 Phillips Place  
MONTREAL

Have still a good stock of hardy, Northern grown

Apple Trees,  
Currants,  
Gooseberries,  
Raspberries, etc.

and an immense stock of Specimen Shrubs, Ornamental Trees, Roses, etc.

The collection of Perennial Plants and Peonies on their nurseries at Pointe Claire is probable the most complete in Canada.

LISTS AND INFORMATION FURNISHED FREE OF CHARGE

## Apple Boxes

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

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

*Our Boxes are Right.*

*The Price is Right.*

*Let Us Quote You.*

**Barchard & Company**

135-151 Duke St.

TORONTO

more easily handled than the larger barrel, and it holds three bushels or standard boxes of apples, or as near as a barrel can."

Eben. James, Toronto: "Most sections in Ontario use the thirty-inch stave, but in the Niagara district and in portions of Quebec the growers use the twenty-eight and a half inch stave. I am an advocate of the large barrel. If Nova Scotia's apple trade grows as rapidly as the growers seem to expect they will soon have to ship apples to other markets and when they do they will be compelled to use a larger barrel."

Mr. Dewar: "We might as well permit the sizes as now used, as conditions will soon right themselves. The Nova Scotia growers will soon find that the loss they sustain through shipping apples in the small barrels is so great they will be forced to use the large barrel."

Rolt. Thompson, St. Catharines: "When enacting legislation relating to the apple barrel the government should specify the dimensions of the barrel."

Mr. Onslow, of Niagara-on-the-Lake, did not think that it would be possible for the government to recognize two standards.

Mr Thompson pointed out that there were different standard baskets.

Mr. M. C. Smith, of Burlington, offered to wager that not a barrel had been made in Nova Scotia that measured ninety-six imperial quarts and not one that contained three bushels. A Nova Scotia delegate said that much of the trouble over the size of the barrels was caused by the fact that the coopers do not turn out barrels that are uniform in size. The discussion ended by the carrying by a large majority of the following resolution: "Whereas there are two sizes of apple barrels in general use in Canada, and whereas it would appear that uniformity would be more nearly obtained by the adoption of the specified standard sizes for use in Canada, be it resolved that the conference recommend the government to provide two standards, one the 96-quart barrel commonly used in Nova Scotia, and the other the 112-quart barrel commonly used in Ontario, and that the Department provide for the enforcement of the use by all growers and dealers, of one or the other of these standards, and that the manufacturers be held responsible."

## The National Fruit Growers Association

As previously announced in THE CANADIAN HORTICULTURIST, a national fruit-growers' association was formed by the delegates who attended the recent Dominion Fruit Conference in Ottawa. The following draft constitution was adopted:

1. This association shall be called the Canadian National Fruit-Growers' Association.

### OBJECTS

2. The objects of the association shall be:
  - (a) To encourage improvements in fruit growing.
  - (b) To develop markets for fruit abroad.
  - (c) To initiate and influence legislation affecting Canadian fruit interests and generally to take such action as the

## Fruit Trees and Flowers

We still have a nice stock of most lines of trees and are in a position to ship the day orders are received. Wire us rush orders at our expense.

Owing to the prospect of a rather light crop of Peaches in our locality, we are planning to grow quite a quantity of CUT FLOWERS, especially

### China Asters

We bought the finest strains of Asters obtainable, paying a long price for the seed. It is saved by the best grower of Asters on the continent. Our plants will have three transplantings and every care. We expect to have a quantity to dispose of as we have planted more seed than we need. The early plants will be ready about May 20th and the late ones June 15th. We offer the Asters at

20 cents per dozen or  
\$1.00 per 100, postpaid

**AUBURN NURSERIES**  
QUEENSTON, ONT.

## Douglas Gardens

Oakville, Ontario

### China Asters

100 for 75 cts.; 25 of one variety at the 100 rate.

Vars.—Queen of the Market, White and Pink, Lavender Gem, Royal Purple, Branching Whites and Crego, Pink. Plants once transplanted.

Antirrhinum (Snapdragon), each 10 cts.; 10 for 60 cts.

Salvia, Var. Bonfire, fine plants, each 10 cts.; 10, 60 cts.

Scabiosa, long season of bloom, each 10 cts.; 10, 60 cts.

Stocks, Cut and Come Again, each 5 cts.; 10, 25 cts.

Stocks, Large Flowering, 10 week, each 5 cts.; 10, 25 cts.

These plants are now in good form for shipping and setting out.

### Gladiolus

Light colored section, unnamed, 25 for 75 cts.

Red and Scarlet section, unnamed, 25 for 60 cts.

Mixed Colors, 25 for 55 cts.

Supply of named varieties is exhausted. Above prices include carriage prepaid.

JOHN CAVERS

## 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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**S. W. Marchment**

133 Victoria St. TORONTO

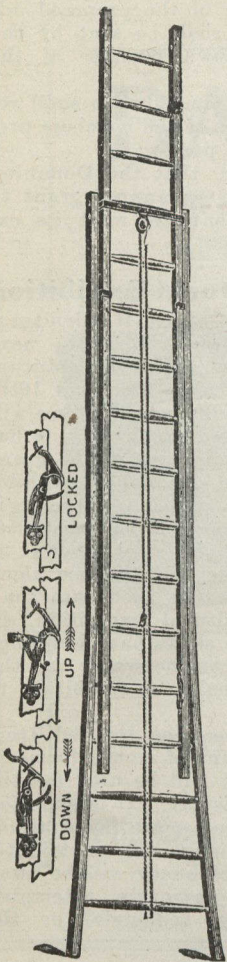
Telephones: Main 2841; Residence, Park 951

Say you saw the ad. in The Canadian Horticulturist



# Buy Your Ladders Now

You will want them badly when the rush starts

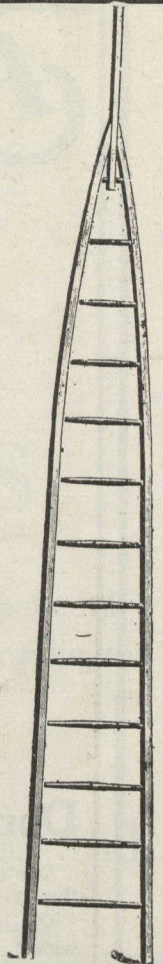


We  
Put the  
Very Best  
Material and  
Workmanship  
into Every  
Ladder We  
Make



2811 Pounds carried with ease on one of our  
HERCULES Step Ladders

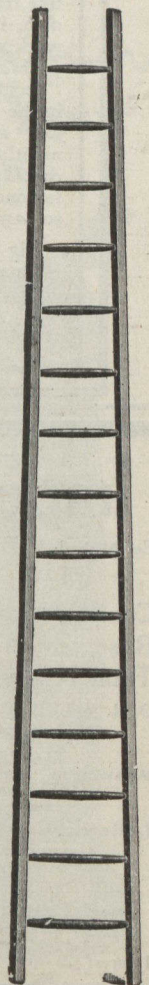
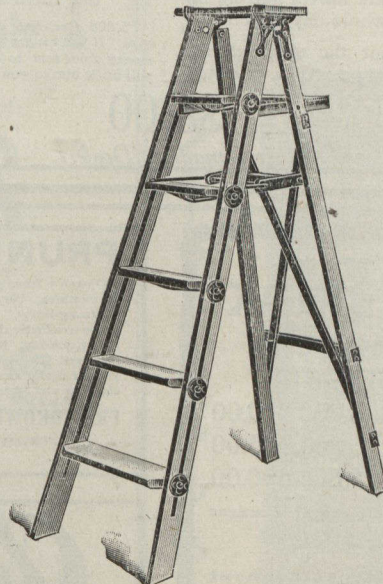
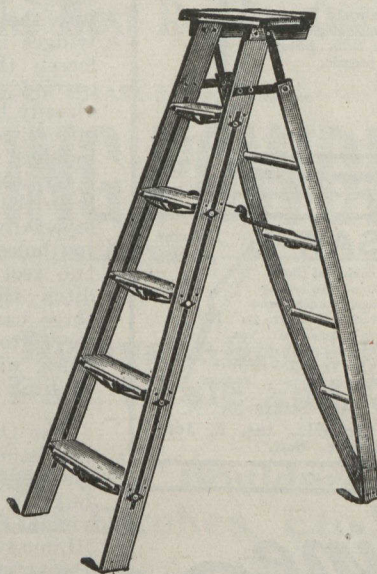
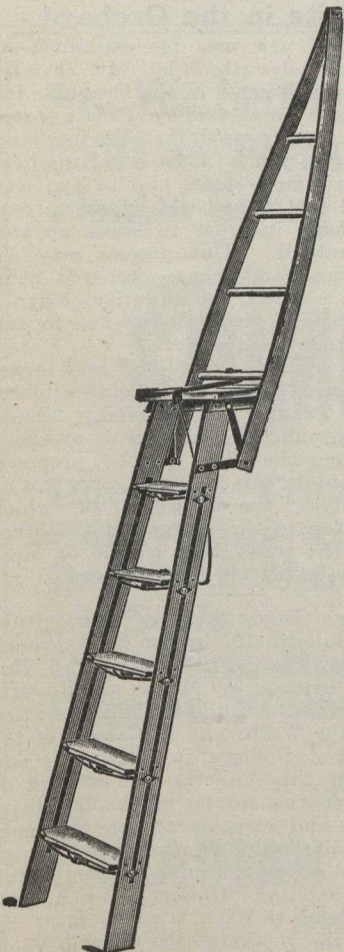
WE  
GUARANTEE  
Our Ladders for  
One Year Against  
Breakages Due  
to Defects in  
Material or  
Workman-  
ship




Almost before you realize it, the busy fruit picking season will be here. Have you got the new ladders you will need? Now is a good time to get them, before the rush starts.

We make ladders of all sizes and for all purposes. **Fruit Picking Ladders** a specialty.

**Co-operative Associations!** We especially invite correspondence from secretaries of Co-operative Fruit Associations and similar organizations. We are prepared to quote attractive prices on large orders.



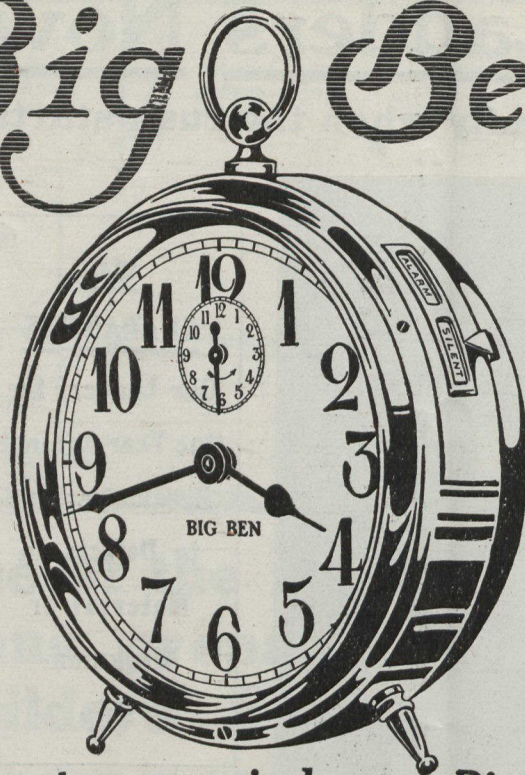
Our Full Line of Ladders described in Catalogue F.   
Send a Postcard for a copy.

## The Stratford Mfg. Co., Limited

Makers of Ladders for Every Conceivable Purpose

STRATFORD, ONT.

# Big Ben



## Don't set your mind—set Big Ben

Don't bother *your* head about getting up. Leave it to Big Ben.

You ought to go to sleep at night with a *clear brain*—untroubled and free from getting up worries. You men, if you are up to date farmers, work with your brains as well as with your hands. Such a little thing as "deciding to get up at a certain time in the morning" and *keeping* it on *your mind* often spoils a needed night's rest and makes a bad "next day." Try Big Ben on your dresser for one week. He makes getting up so *easy* that the whole day is better.

Big Ben is not the usual alarm. He's a timekeeper; a good, all-pur-

pose clock for *every day* and *all day* use and for years of service.

He stands seven inches tall. He wears a coat of triple-nickel plated steel. He rings with one long loud ring for 5 minutes *straight*, or for 10 minutes at *intervals* of 20 seconds unless you shut him off.

His big, bold figures and hands are *easy to read* in the dim morning light, his large strong keys are *easy to wind*. His price, \$3.00, is *easy to pay* because his advantages are so *easy to see*. See them at your dealer.

5,000 Canadian dealers have already adopted him. If you cannot find him at your dealer's, a money order sent to *Westlox, La Salle, Illinois*, will bring him to you duty charges prepaid.

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days prior to the date of any meeting of the association a copy of the proposed addition or amendment shall be sent by the secretary to each known member of the association.

17. Any addition or amendment shall require a two-third's vote of the members present at the meeting to pass.

Note—It is expected that the Dominion Government will make an annual grant to the association sufficient to meet its expenses.—Editor.

## Ontario Horticultural Exhibition

The directors of the Ontario Horticultural Exhibition have decided to hold the next exhibition in the new arena on Mutual Street, Toronto, November 12th and 16th. The Ontario Department of Agriculture will be asked for an increased grant as there has been no change in the amount of the grant for a number of years, although the exhibition has now reached a point where it is believed to be entitled to more assistance. The money given to the stock shows at Ottawa and Guelph for maintenance alone is several times greater in each case than it is for the horticultural exhibition, in addition to which both shows have buildings of their own, while it is necessary for the directors of the horticultural exhibition to rent a building.

The honey committee has secured from the directors the amount of money formerly awarded in prizes. It will be used for the putting up of a big display. It is expected that all of the local bee-keepers' associations throughout the province will contribute, and that the exhibit of honey will be away ahead of anything previously attempted either at the Toronto Industrial or the November Shows.

## Dynamite in the Orchard

A number of new uses for explosives in agriculture are described by Mr. F. H. Gonsulus in the Journal of the Franklin Institute. In the north-western Pacific states dynamite is largely used for clearing land of tree stumps; but a more novel application is to drill holes from two to five feet into the soil and to explode dynamite cartridges in them, in order to break up and loosen the subsoil. This process may be carried out on land where orchards have already been planted, the quantity of dynamite used varying from twenty-five to one hundred pounds an acre.

Explosives are also being used very largely in the western states for digging ditches, especially in swampy clay ground. Slanting holes are punched at intervals of about two feet along the line of the proposed ditch; the middle hole is loaded with two or three cartridges, the explosion of which serves to detonate the charges in the other holes, with the result that a mile or more of ditch may be blasted simultaneously.

The Ontario Department of Agriculture has issued Bulletin 197 by the fruit branch entitled "Bee Diseases in Ontario." This bulletin is written by Morley Petit, provincial apiarist. Bulletin 198, entitled "Lime-sulphur Wash," by L. Caesor, of the Department of Biology, is interesting and timely. In this bulletin an attempt is made to give the results of the latest investigations and experiments on the making of the lime-sulphur wash and the various uses to which it can be applied. Bulletin 199, entitled "Onions," by A. McMeans, of the O.A.C., Guelph, is a reprint from the report of the Ontario Vegetable Growers' Association for 1908.

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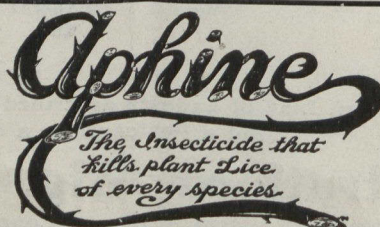
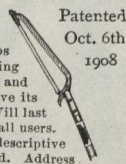
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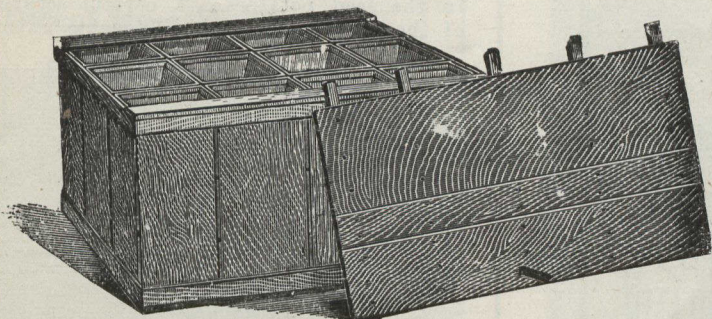
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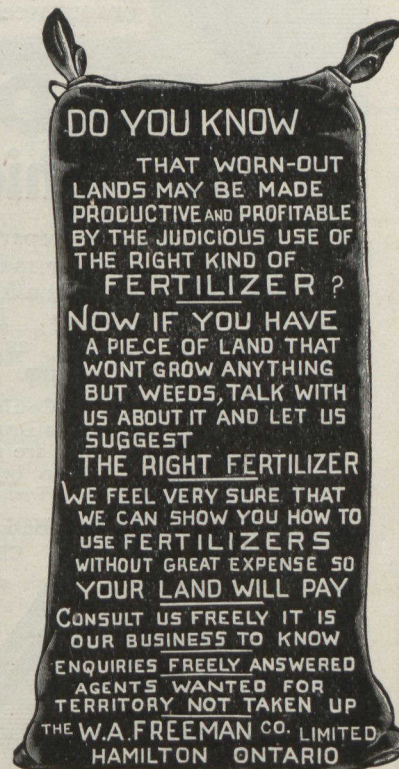
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**Potato Canker**

Prof. J. E. Howitt, O.A.C., Guelph, Ont.

Mr. H. T. Gussow, botanist, Dominion Experimental Farm, Ottawa, has already, through the press, called attention to this most destructive potato disease, and the great danger of its being introduced into Canada in imported seed potatoes. On account of the serious loss to the farmers of Ontario which the introduction of potato canker would cause, it is not out of place to again warn all interested in potato growing to be on the watch for potato canker in the seed potatoes. A careful scrutiny of the seed potatoes should enable anyone



The Potato Canker

to detect the presence of the canker. Badly cankered tubers can be noticed at a glance, as they are misshapen and completely covered with warty excrescences. Badly diseased potatoes, however, are not likely to be found in the seed, but tubers which are only slightly affected and which at a casual glance appear sound. These may be detected by examining the eyes, which will be found to be slightly protruding and composed of clusters of little nodules. The accompanying illustration shows the disease fairly well developed at one end of the tuber. Potato canker is now found in England, Ireland, Scotland, Scandinavia, Germany, France, Italy, and Newfoundland. On account of the shortage of the potato crop in Ontario last year, large quantities of potatoes are being imported, especially from Great Britain. The danger lies in the planting of imported potatoes infected with the canker. Farmers should make a point of knowing the source of the seed potatoes they are using, and of making a careful inspection for any signs of canker before planting. Suspected potatoes should be sent to Mr. H. T. Gussow, botanist, Dominion Experimental Farm, Ottawa, or to the Botanical Department, O.A.C., Guelph, for examination and report. On no account should any suspected potatoes be planted until a report upon them has been received.

The Western Fair, London, Ont., this year will be held from September 6th to 14th.

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you must care for it. If dandruff is present, first eliminate it by using Na-Dru-Co Dandruff Eradicator for three or four weeks, then tone up the scalp with

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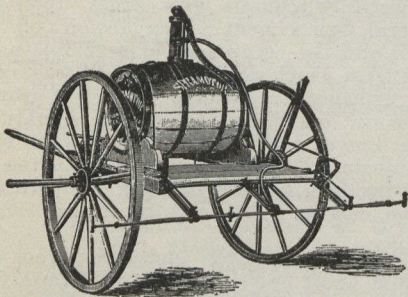
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### Nova Scotia Growers Active

Manning K. Ellis, Sec'y., N. S. F. G. A.,  
Port Williams, N. S.

A large and representative number of fruit growers met at Kentville on April 12th to hear the report of the delegates to the fruit conference at Ottawa, and to listen to addresses from prominent men on live fruit questions of the hour.

President S. C. Parker took the chair and called on John N. Chute, of Berwick, the "Father of Cooperation" in the Valley, to tell of the present status of cooperation work, and what development was looked for.

Mr. Chute took up his subject from a business standpoint, and briefly reviewed

the work and growth of the cooperative movement for the last five years. He showed that the question was not a local issue, but a world-wide movement, in which producers everywhere were finding a way to improve their condition, and place their products on the market in the best possible manner. In his own company at Berwick the average price for the seven leading varieties for the last five years had been as follows: No. 1, \$2.64; No. 2, \$1.88, and No. 3's something over \$1.00 per barrel. Twenty-five companies are now organized in the Valley.

A central association was organized and had started work the past season. Nearly \$300,000 worth of business was done this

first year, which speaks volumes for what can be done when the companies are all working together. The central association can handle the question of transportation, can attend to the buying of fertilizers and other supplies and in many other ways assist the local companies. In fact, the central association should be to the local companies what the local companies are to the individual. Mr. Chute's address was worthy of the careful attention it received.

Dr. Cutten, president of Acadia University, spoke on the benefits of a meteorological station to the fruit growers of the Valley. It was found by experiment that the temperature and rainfall of the preceding year had a great effect on the various crops of the year following, and by keeping a careful record for a term of years of the precipitation, high and low temperature, frosts, winds, etc., data of great value to farmers and fruit-growers could be secured. Some work had been done along this line at Wolfville, and the late government had sent some instruments which had not been installed, and the new directors from Toronto seemed to be under the impression that the station was not needed. Dr. Cutten read a letter from the State Climatologist of Ohio, giving an account of the work there; and the benefits derived. After some discussion of the location of such a station in the Valley the following resolution was carried:

Whereas valuable results have been obtained in other countries by ascertaining and recording, for future guidance, complete local meteorological records.

And whereas the closer connection of monthly temperature and rainfall with crop production is a matter for the fullest investigation (and whereas some work of this nature is now being carried on at Wolfville).

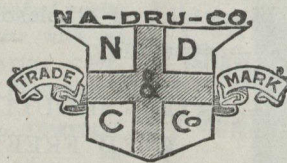
Therefore, resolved that this association respectfully requests and urges upon the Federal Government an expansion of this work and the equipment of a complete station from which daily weather forecasts may be furnished to farmers and fruit-growers by mail, telephone, telegraph, signals, or otherwise of such a nature as to warn them of injurious frosts or high winds during the growing season, or probable temperatures to be met with by fruit in transit during winter.

Captain Allen, the delegate from the United Fruit Companies to the Ottawa Conference, gave an account of the work in the conference upon the standard barrel question. "If," he said, "Canada cannot accept one size barrel, would it not be better to adopt two standards, the 96-qt. barrel as used in Nova Scotia and the 112-qt. barrel as used in Ontario?"

Geo. H. Vroom, the Dominion Fruit Inspector, read the law which calls for a minimum barrel as follows: 26 1-4 inches inside measure between heads. Diameter of head, 17 inches, diameter of bilge 18 1-2 inches, holding as nearly as possible 96 quarts.

Mr. Vroom then exhibited three sample barrels of standard, but varying in bilge as follows: No. 1, 18 1-2 inches; No. 2, 19 inches; No. 3, 19 1-2 inches. They held 97, 99 and 101 quarts respectively. No. 1 was the right size for the present minimum barrel, but in practice it was found not strong enough, because of the small bilge. He suggested a head diameter of 16 3-4 inches and a bilge of 18 1-2 inches as a better barrel.

The secretary read some correspondence from Mr. McNeill, Chief of the Fruit Division, quoting the law as to the minimum barrel, and saying that this coming season  
(Continued on page v.)



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**Canadian Gardens**

(Concluded from page 144)

were edged with English Box (*Buxus sempervirens*), reminding one of the old English gardens. Inside of the box edgings are narrow borders of hardy perennial plants, that give the garden an attractive appearance in summer. The north boundary of this garden was taken up with a long range of glass graperies and greenhouses. In the graperies have been grown about fifteen varieties of the luscious French hothouse grapes. The fruit from these vines has been much enjoyed by many prominent people, including His Majesty King George when, as Prince George, he paid a visit some years ago to Inglewood, whilst an officer on H. M. S. Canada. In the lobby of these vineries is a fine specimen of the Chinese Wistaria.

In the fruit orchards, several acres in extent, are planted the finest kinds of peaches, apples, pears and plums, as well as of small fruits. Possibly the first shipment of apples to China from Canada was made from these orchards, about five years ago. The conservatory attached to the residence deserves some notice. A fine collection of palms, cycas, banana and other plants occupied this building.

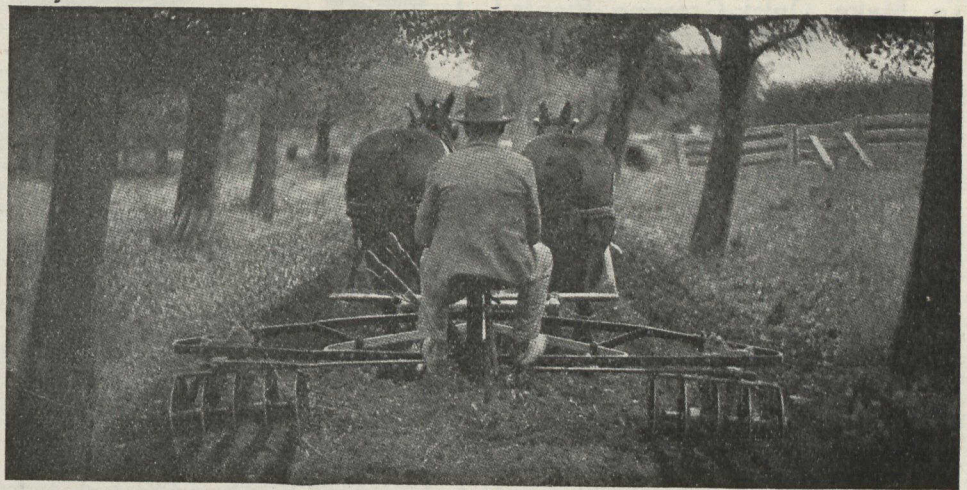
Much more might be written about these gardens and grounds with which the writer is so familiar, but space will not permit. What has been written is very largely of a reminiscent nature. In a few years, and perhaps in less time, what has been written will be subject matter of history only. These grounds have recently passed into the hands of a local syndicate. The stakes of the surveyors now seen here and there indicate very clearly that at least many of the points spoken of will soon have city residences erected on them. The graperies mentioned have already been removed preparatory to building operations. It is to be hoped that some portion of these grand old gardens and lawns will be preserved as history marks of the early pioneer days of this now rapidly growing city.

**British Columbia**

A considerable reduction in British Columbia fruit rates has been made by the Canadian Pacific Railway as a result of conferences held last February in Omaha between the executive of the British Columbia Fruit Growers' Association and W. B. Lanigan, assistant freight traffic manager of the road. Since that time some correspondence has taken place on the subject and the reductions are now announced. The reductions apply to fruit shipped to the prairie markets.

The next quarterly meeting of the British Columbia Fruit Growers' Union will be held at Kaslo, July 30, during the holding of the first annual cherry show at that point.

The Department of Agriculture this year had seven power sprayers at work in different parts of the province, and an expert with each, who taught not only spraying, but also pruning, thinning and the cultivation of the soil as well. Difficulty was experienced in finding the right class of men to handle this work, but good results must follow. As a result of their demonstrations last year numerous power sprayers were purchased throughout the province and a carload went into the Okanagan country recently. When the department started the use of the power sprayer two years ago there were only two in the province.



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CAN be used in any kind of orchard, orange grove, vineyard, preparing for cotton or for general discing work on small farms—two tools in one.

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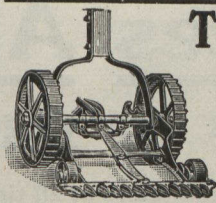
It is adjustable to any depth, in the middle or at the ends, by means of gang hinges. Levers adjust each gang separately to any angle, regulating the amount of

dirt thrown. In grape cultivation the Massey-Harris cultivates all of the ground. A plow cannot do this. It is a good side-hill harrow. The steel frame is in one piece. Strong arches or yokes support the gangs, separate bearing boxes take up the friction. We furnish, as an extra attachment, a steel extension frame. With it the operator can cultivate under the trees, close to the trunks, and the horses do not interfere with the branches or injure the fruit. This extension will save many times its price.

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## Peach Growing in Huron Co.

Dermot McEvoy, Goderich, Ont.

Ten years ago a peach-growing experiment was begun in this locality by Mr. D. F. Hamlink, of Goderich. He had reasons to believe that as good peaches could be grown in Huron county as in the Niagara Peninsula, and so satisfactory have the results been that he increased his orchard two years ago by twenty acres, and intends making a further increase this year. This is the first peach orchard of any size in this county, and Mr. Hamlink is to be commended for demonstrating that peaches can be profitably grown here.

Two years ago Mr. Hamlink began systematically to cultivate the orchard of five acres which he had originally planted to Crosshys, Smocks and Early Crawford's, and his crop that year was twelve hundred baskets. Last year he picked three hundred baskets of fine fruit from a small portion of the seven-year-old trees, although a very severe hail storm in June had threatened to wipe out the crop entirely. The varieties which he has purchased for this year's extension are equal quantities of Yellow St. Johns, Fitzgeralds, Early Crawford's and Elbertas. So far neither little peach nor yellows has been noticed in the orchard, and very few trees have been winter killed.

It is hoped that others may be induced to follow the example, and that proper advantage may be taken of the special qualities of soil and climate which combine to make a large part of Huron county a good peach-growing district.

Mr. Hamlink is well known to fruit growers in this neighborhood. He is the secretary-treasurer and manager of the Huron Fruit Growers' Association, which was organized a year ago with thirty members. The object of the association is to increase the quality and size of crops by attention to cultivation, pruning and spraying, and incidentally to encourage the practicing of their methods among those who are not yet members. The present membership represents orchards to the extent of two hundred and twenty-five acres, containing nine thousand trees. The apples from the Huron Fruit Growers' Association were eighty-seven per cent number one last year. This in itself demonstrates that the methods were good and that they were faithfully carried out.

## Nova Scotia Growers Active

(Concluded from page 158)

the law in respect to size would be strictly enforced, and fruit-growers and coopers should take notice and govern themselves accordingly. A lively discussion followed, and much old strain was thrashed. Mr. P. Innes presented the following resolution, which was passed by the meeting:

"It is resolved that the resolution passed at the last annual meeting regarding the standard of measure for apple barrels of 96 quarts or three bushels be adhered to; further, that any change in the shape of the apple barrel that does not increase the capacity to over three bushel, and, if mutually agreed to, will be acceptable; and, further resolved, that any person manufacturing apple barrels shall stamp their name and 'Standard Apple Barrel' on each barrel, and shall be liable on summary conviction to a penalty of twenty-five cents for each barrel they make of lesser dimensions than the legal specifications."

At the evening session, President Parker, on behalf of the chairman of the Ottawa delegation, who was not present, gave a report of the work done at Ottawa. He

named over the questions taken up at the conference, and asked Captain Allen and J. N. Chute to also speak on points that had come to their attention.

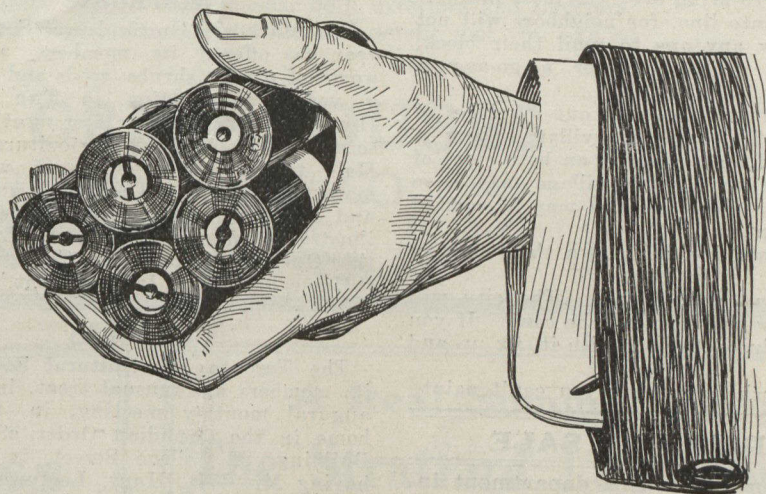
Capt. Allen took up the transportation question and, with facts and figures, showed up the steamship lines carrying our apples, in relation to their contracts with the government. To draw their subsidy of \$25,000 the Furness Line should maintain a twelve-knot service, or not more than ten days to London. He had records showing that some boats took as long as eighteen days on the way, while hardly any lined up to the contract for speed. It was thought the advent of the C.P.R. would help matters a little, but, instead, they had only made them worse.

The facilities for landing apples in London from the C.P.R. steamers were very poor, and they had combined with other steamship lines to keep up freight rates.

Mr. Chute reported on apple inspection and the question of a minimum size for No. 1 and No. 2. This latter he regarded as of

great importance. The Ontario delegates wished to class the Spy with the larger apples, but agreed to a lower standard. The conference recommended a minimum size for the different varieties as follows: Golden Russet and kindred varieties, 2 3-8 inches for No. 1, 2 1-8 inches for No. 2. Baldwin, Spy, etc., 2 1-2 inches No. 1, 2 1-4 No. 2. Kings, etc., 2 3-4 inches No. 1, 2 1-2 inches No. 2. The delegates agreed that the system of inspection as to the place of operation was faulty. If it could be carried on to some extent at the packing house, people would soon learn to pack better apples.

Mr. Gornall, of Middletown, closed the meeting by a very interesting and instructive address on the marketing side as it appears to an observer in England. Wasteful methods were followed, and cooperation in packing and marketing was the only solution. He urged the need of special representatives of the united companies on the other side to advise as to shipments and state of the market, and to look after their interests generally.



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## SOCIETY NOTES

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

### The Block Improvement Idea

To Mayor Ward, of Birmingham, Alabama, is said to belong the credit for first conceiving and putting into effect the "Block Improvement Society" idea that has proved so successful in many parts of the United States.

The central idea is that each block or square shall organize, through its inhabitants, an improvement society to look after the beautification and betterment of its environment. The idea brings the needs of the situation home to the individual and shows the relation of the individual and the community. A friendly rivalry between blocks tends to bring even the most indifferent citizen into line, for neighbors will not readily allow any one to spoil their block, which often happens under a go-as-you-please policy.

The idea may be carried out in places of any size. The rambling village along a country road may organize on both sides of the way. A cross roads village may have four groups. Thus the idea may be carried to any extent.

Mayor Ward has laid down the following principles:

"Pull down your fence. The city will haul it away and keep off the cows. If you can't be induced to part with it, fix up and paint it.

"Whitewash everything you can't paint.

## FARMS FOR SALE

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

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

TWELVE ACRES, all fruit, new brick, at car, ten acres fruit, new buildings, eight thousand. Western lands for sale.—Widdicombe, James St., St. Catharines, Ont.

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

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

ASK DAWSON. He knows.

IF YOU WANT to sell a farm consult me.

IF YOU WANT to buy a farm consult me.

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

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

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

### FOR EXAMINATION TIME

Secure a handsome FOUNTAIN PEN free of cost by getting five new subscriptions to the Canadian Horticulturist at 60c. each

"Plant lawns, flowers and trees. Wherever the ground shows bare, plant something green in it.

"Exercise the same supervision over your sidewalks as over your front yard. Sidewalks are the index of the people inside.

"Trim up trees which are too low and which overhang sidewalks.

"Plant a strip of green in bare places along sidewalks.

"Don't let your dog bark all night. Think of your neighbors.

"Sweet peas, climbing nasturtiums, castor beans, hollyhocks, or even sunflowers make an effective screen to hide old fences, sheds or other unsightly views. For permanent screens, use hardy shrubs or the quickly growing vines.

"You may have a window box filled with geraniums if you cannot have a grand yard filled with choice roses."

Where could not all this be done to advantage? The Block Society idea, if properly developed, will lay a splendid basis for real community development.

## Markdale

The Markdale Horticultural Society this year has offered its members a dollar's worth of plants, shrubs, seeds and bulbs and a year's subscription to THE CANADIAN HORTICULTURIST. Their first meeting of the season was held in the Agricultural Lecture Hall, the seating capacity of which was more than filled. There was a recitation and an instrumental duet, followed by an illustrated address by Prof. H. L. Hutt, of the Guelph Agricultural College, entitled "Home and Town Improvement."

## Toronto

The Toronto Horticultural Society gave its members an unusual treat, in their inaugural monthly meeting, in their new home in the Canadian Order of Foresters Building, 22 College Street, in April. By having Mr. Wm. Hunt, Lecturer in Floriculture at the Guelph Agricultural College, deliver an address, illustrated by superb lantern views taken in connection with his floral work at the college. Mr. Hunt is one of the best florists in America. Through his painstaking, intelligent, and able work for the province, in the press, on the platform, and at the college, he has done much to stimulate the enthusiasm of Canadians for gardens and gardening. The crowning glory of his work, produced under great difficulties, is a rose garden, that adds immensely to the attractions of the Royal City.—A. K. G.

## Peterboro Society Increasing

Increased interest is being shown this year in the work of the Peterboro Horticultural Society. About one hundred and thirty new members have been secured, bringing the membership up to about three hundred. Four options have been given the members for spring distribution, in addition to which bulbs will be distributed in the fall.

## Hamilton

Three years ago the Hamilton Horticultural Society determined to extend its usefulness by increasing its membership. This was attempted by personal canvass, and the membership was increased to three hundred and fifty. This personal canvass has been continued each year. Last year the society had four hundred and sixty-four members.

During the past two years there have

been given each year twelve hundred packages choice mixed aster seed to the children of the public and separate schools. We awarded three prizes to each of the twenty-seven schools and three prizes to the three schools making the best general exhibit. These last prizes were to be planted on the school grounds. The children evinced great interest and entered between two hundred and fifty and three hundred bunches of asters each year. We found that the parents took great interest in the children's work.

In addition to a general supervision of the city we have during the past three years distributed to our members eighty thousand choice bulbs, assorted, three thousand choice shrubs, eight kinds, and eight thousand five hundred choice perennials, 12 kinds. We also gave THE CANADIAN HORTICULTURIST to all our members and held a winter course of lectures.—J. Kneeshaw.

## Walkerville's Good Work

Mr. W. H. Smith, the secretary-treasurer of the Walkerville Horticultural Society, has sent THE CANADIAN HORTICULTURIST the annual announcement, financial statement and list of premiums of that society for the year 1912. The receipts of the society last year were \$774, including a balance from the year before of \$219. The society is offering ten options, each of which is attractive.

Enclosed with the announcement of the society was the annual announcement of the garden and lawn competition and list of prizes offered by Hiram Walker and Sons, Ltd. The competition is open to all residents of Walkerville who cultivate their own gardens. There are classes for property-owners and tenants.

Prizes are offered for hanging baskets, improvements to new homes, collections of hardy shrubs, collections of roses, of herbaceous plants, for the general appearance of the garden, lawn and boulevard, for beds of geraniums twenty-five square feet or more, for collections of climbing vines, for the best window, porch or lawn boxes as seen from the street, and for many other similar classes. Societies that are thinking of holding similar competitions will do well to write for a copy of this announcement.

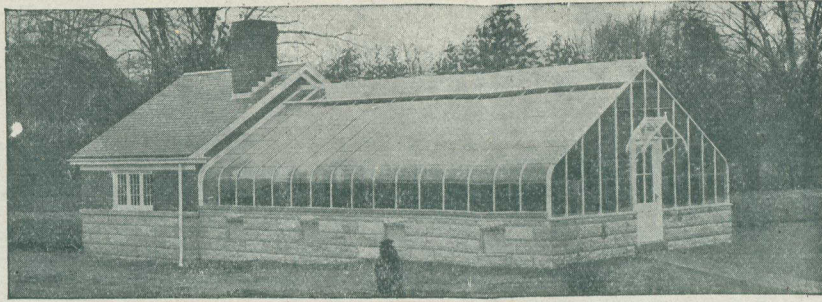
## Tile Drains for the Orchard

Jas. Marshall, Wentworth Co., Ont.

Perhaps underdrains do more good to fruit orchards than anything else. Any farmer who has an apple orchard knows that the trees will grow and bear much better in dry places than in a soil that is too wet. I had a tile running between two rows of common red cherry trees, and these trees were about four times as large as others on land not drained, and the fruit was better.

Peach trees will not grow on wet soils. The soil on part of my farm is naturally wet in the subsoil, being heavy clay. The editor of a fruit paper told me that peaches could not be grown successfully one mile back over the mountain. Mine are nearly two miles back on the mountain. A fruit nurseryman told me, when buying the trees, that I could not grow them.

I planted forty trees on drained land thirteen years ago last May, and some had the thirteenth crop last summer; one year a very light crop, a few years a fair crop, but most years a heavy crop. I have now three thousand five hundred peach trees, most of them young and just coming into bearing.



## WHY U-BAR GREEN HOUSES EXCEL

There is the downright practical side of U-Bar houses, the side that means more flowers, more vegetables of finer quality, with less care and expense than in any other house constructed any other way. The reason for this is,—more light. You see, there is no gutter at the eaves—no heavy framing members—the glass is spaced 24 inches. Every structural detail has been reduced to the smallest possible point. Still, with all the extreme lightness of construction, there is not a more rigid, enduring house made—and it is the U-Bar that does it.

The catalogue, although filled with U-Bar houses, both exteriors and interiors, also shows plans, sections and all the interesting structural details that you like so well to know. Send for it.

## U-BAR GREENHOUSES

PIERSON U-BAR CO

ONE MADISON AVE., NEW YORK

CANADIAN OFFICE, 10 PHILLIPS PLACE, MONTREAL

## Greenhouse Glass

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

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

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Busby Lane

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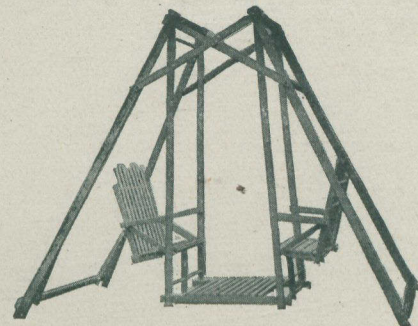
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## A Real Summer Need The Stratford Lawn Swing



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

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

**Made in Three Sizes at Three Prices  
Built Solid and Strong**

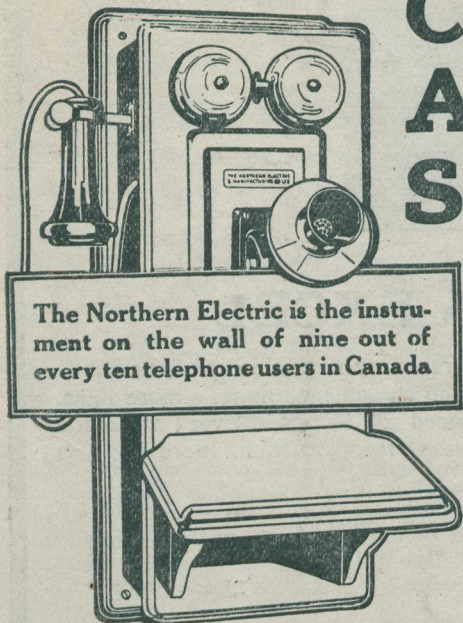
*Write us for Booklet "G"*

## The Stratford Mfg. Co. Limited

Stratford, Canada

We make all kinds of Summer Furniture for Lawn and Verandah

# WE WANT TO TELL YOU HOW YOUR COMMUNITY CAN OPERATE A SUCCESSFUL TELEPHONE SYSTEM OF ITS OWN



The Northern Electric is the instrument on the wall of nine out of every ten telephone users in Canada

**T**HE number of rural telephone lines started during the last year has been greater than ever before in the history of Canada. If, indeed, it has not been started already, your own community is bound to have a telephone system, sooner or later. You would have such a system at once, if you and your neighbors only realized how quickly, easily and inexpensively it could be put into operation. You, yourself, can start this system going right away; with the help we offer, you can interest your friends and neighbors and, among you, can organize your own company, erect your own line, install your own instruments, and operate your own self-maintaining telephone system, just as successfully as the largest telephone exchange is operated in the largest city on the continent.

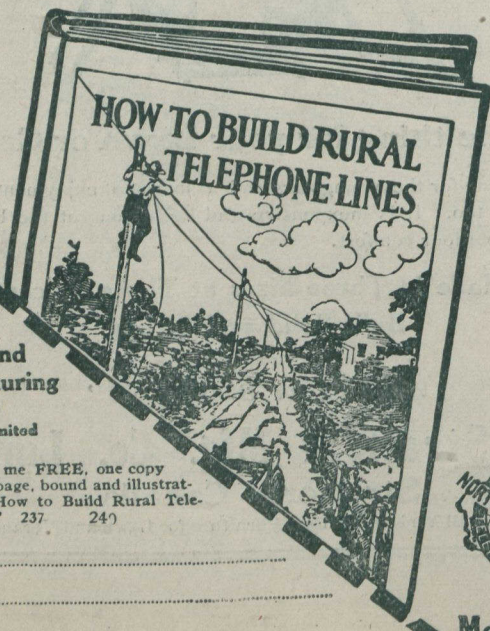
## This Bound Volume of 100 Illustrated Pages is FREE

**N**EVER, since farmers first started installing their own telephone instruments, has there been produced so comprehensive a volume of instructions as our book "How to Build Rural Telephone Lines." This book, printed on good paper, illustrated with photographs and diagrams and bound in stiff, cloth covers, is an invaluable text-book on the subject of constructing telephone lines in the rural districts. Written in plain language by expert telephone engineers, it has been a very costly book to produce. It is really almost too valuable to give away free; we could not afford to distribute it haphazard. However, we have one copy for you.

## BUT We Send It Only When You Ask For It

"How to Build Rural Telephone Lines" tells about what other rural telephone companies have done, about company organization, about constructing the line, about installing the instruments, about the materials required, about the instruments themselves, and also even gives the law in regard to wires crossing railways, etc. Chapter after chapter, it goes into each item in detail. Nowhere else are the facts so concisely set forth as they are in this book.

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Gentlemen: Please send me FREE, one copy of your 100 page, bound and illustrated book on "How to Build Rural Telephone Lines." 237 24)

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### You Can Organize Your Own Company

**Y**OU don't need to know anything about company organization to start a company among your own friends and neighbors. Our book tells all about both mutual and stock companies and shows you, step by step, just exactly how to go about the matter. It shows you how the procedure differs in the various provinces, what the different governments demand of you and what they will do to help you.

### You Can Build Every Foot of Your Own Line

**N**O expert lineman or superintendent of telephone construction is necessary to build the efficient line that you can put up yourself by merely following the detailed instructions given in this book. Any man who can read and who will follow directions with ordinary sense can build his own telephone line. With the instructions that you can give your neighbors after you have read this book, they can erect every pole, place every cross-arm, string every foot of wire and install every instrument. You can easily realize how this means economical construction.

### We Will Guide You In Every Step of Organization and Construction

**W**E are the largest manufacturers of telephones in the Dominion of Canada. Nine out of every ten telephones in use in the country to-day

have been made in our plant. You can readily understand, therefore, that our experts are the master-minds of telephone construction in the Dominion. It's the knowledge of these men that we place at your disposal—it's their expert advice that will guide you in every step.

### Let Us Show You How To Get The Movement Started

**F**ARMERS throughout the country are just beginning to realize that they can have telephone connection as well as if they lived in the city. They are tremendously interested in the subject. Most of them have been reading it up in their farm papers. It is only necessary for some one man to come forward with definite knowledge on the subject and say: "Let's get started!" With the information that our book will give you, you can be the man in control of the situation in your community.

### Now Is The Time For You To Act—Before Someone Else Does It

**W**RITE in to us and get this book at once. A self-maintaining telephone system will eventually be started in your community. If the moment is not ripe, the time is fast approaching when it will be, and you owe it to yourself to be informed on the subject. If you want the book send us the coupon.

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Manufacturer and supplier of all apparatus and equipment used in the construction, operation and maintenance of Telephone, Fire Alarm and Electric Railway Plants. Address our nearest house

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