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Raspberry Yellows and Cane Blight

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

THESE are two serious diseases of raspberries that are becoming prevalent in Ontario, and about which very little is known. The writer has found Raspberry Yellows in the Niagara District and in gardens near Guelph. Canes attacked by Yellows have been sent to the Botanical Department from Green River, Stirling, and Whitby, Ontario. It would seem, therefore, that Raspberry Yellows is pretty widely distributed in the province. Cane Blight up to the present time has been observed only in the Niagara District.

The cause of Raspberry Yellows has not yet been determined. The name Yellows is given to this disease not because it is supposed to have any relation to Peach Yellows, but because it describes the appearance of affected plants. This disease is reported by Prof. Stewart, of the New York Agricultural Experiment Station, as being most destructive to the Marlboro, but by no means confined to this variety. The writer has found Yellows destroying King and Cuthbert.

The first indication of the presence of Raspberry Yellows is the curling downwards of the margin of the upper leaves

which later become faintly mottled with yellow. As the disease progresses the plants become stunted and yellow, and the berries dry up without ripening or remain small and tasteless. The Yellows seems to spread through a patch in a comparatively short time, as correspondents report that they noticed only a few plants, here and there, in the rows the first season, and the next season found a considerable portion of their plantation stunted and yellow.

No remedy or prevention for Raspberry Yellows is known. Spraying with Bordeaux mixture has been tried, but does not prevent the disease. As Yellows appears to spread quite rapidly care should be taken to dig out and burn any canes showing signs of the disease. If these are left, the probability is that in a comparatively short time the whole plantation will be rendered useless by the disease. Raspberry Yellows is an important disease, and careful investigations should be made to discover the cause and means of preventing it.

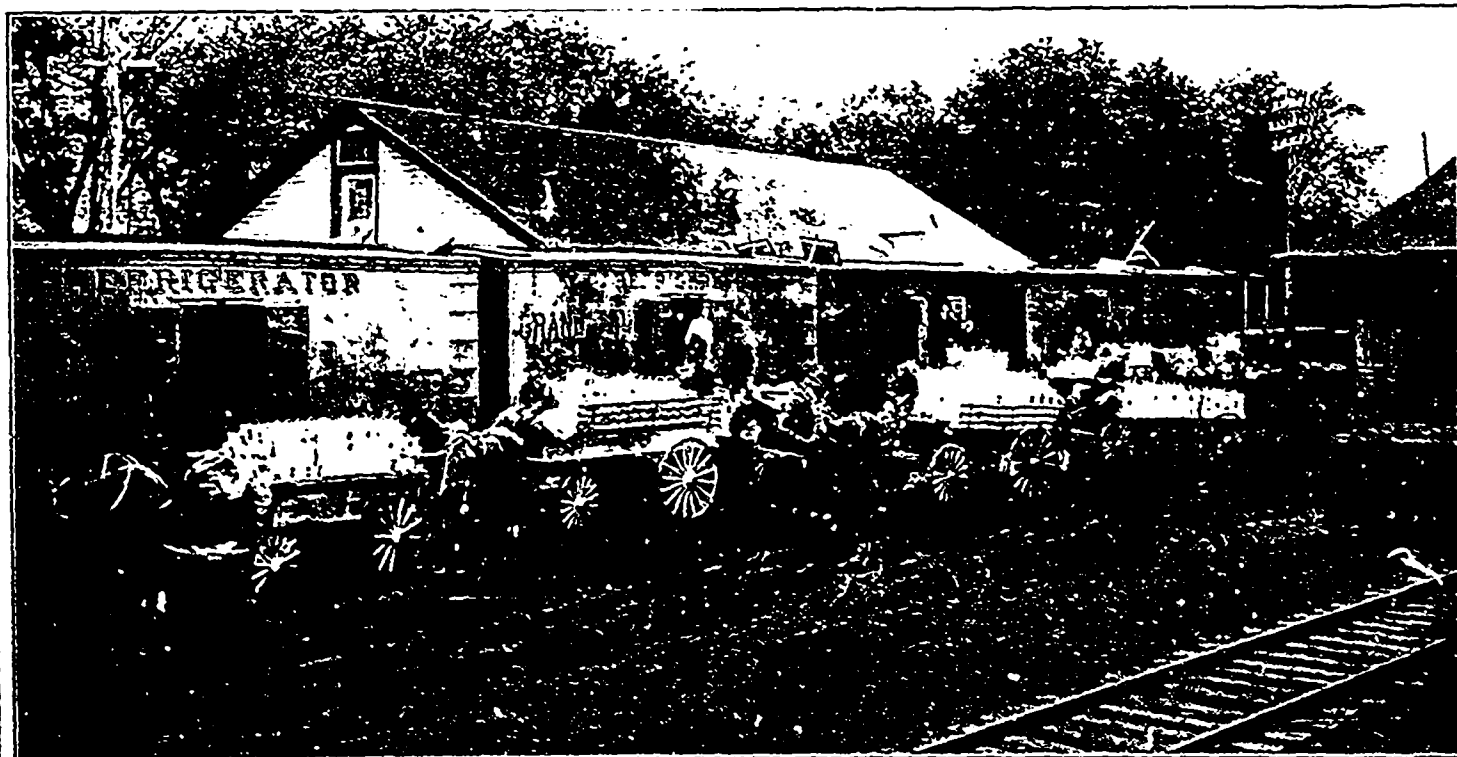
Raspberry Cane Blight, while common in the Niagara District, has not become so serious or so widespread as to attract much attention as yet. It has

been proved to be a fungus disease. It attacks both the red and the black varieties of the raspberry. In New York State it has been found that Cuthbert, Marlboro, Ohio, Gregg, and Kansas are varieties susceptible to Cane Blight, while Columbian is notably resistant.

APPEARANCE OF AFFECTED PLANTS

The leaves and fruit on plants attacked by Cane Blight wither and dry up from the tops downward, and the canes become brittle and easily broken. The diseased canes are easily seen in the rows, and are often mistaken for those destroyed by the Snowy Tree Cricket or injured in cultivation. If the diseased canes are examined, the bark is seen to be lighter in color and near the base will be found discolored dead areas, in which numerous minute black dots, the fruiting bodies of the fungus, can be seen. Frequently these diseased areas are discolored and smoky, due to the presence of immense quantities of exceedingly small spores.

Very little is known in regard to the control of Cane Blight. The results with spraying have not proved satisfactory, and the only practical methods of preventing the disease appear to be:



A Busy Day at Warehouse of the St. Catharines Cold Storage and Forwarding Co., the Oldest Cooperative Fruit Growers' Organization in Canada



Picking, Grading and Packing Apples in the Orchard of Johnson Bros., Forest, Ont.

First, to plant only healthy plants in setting out a new plantation; second, avoid planting where raspberries or

other related plants have grown; third, to remove and burn old canes immediately after the fruit is gathered.

Some Advantages of Fall Plowing

B. Blanchard, Ellershouse, N. S.

THERE has been considerable diversity of opinion among orchardists as to which is to be preferred—spring or fall plowing. While under some conditions spring plowing will give better results than will plowing in the fall, and in a few cases should be adopted entirely, yet on the whole we prefer to do a large portion of our plowing in the fall. Perhaps it might be well to enumerate some of the conditions under which spring plowing would be advisable, after which we can deal more particularly with the subject in hand.

On sharply rolling land and on steep hillsides spring plowing is always advisable, because the soil is liable to wash badly during the winter months. If the soil is very sandy the wind, too, is apt to carry a lot of it away. In orchards grown under such conditions, cover crops should be grown and not plowed under until the spring. They hold the snow and thus in a large measure prevent freshets, which carry away so much soil fertility from hilly land.

CAREFUL WORK REQUIRED

A case in which, if done at all, fall plowing has to be done most carefully is in renovating old orchards that have been neglected and left in sod for a number of years. To be effective, fall plowing must be reasonably deep. Otherwise, the furrows become compact during the winter, and when the furrows are thin there is nothing to cultivate in the spring, and the ground must be re-plowed. But in such orchards the root system is usually quite

near the surface and if deep plowing is practised the roots are so seriously damaged that the trees receive a set back from which they may require a number of years to recuperate.

An argument used by many against the practice of fall plowing is the tendency to induce winter injury. Under the conditions we have mentioned we can readily realize how damage might be done to the trees because of careless plowing, but it has never been our experience that sun-scald and similar troubles were brought about by fall plowing. We have always believed that such injury was due entirely to weather conditions, a few warm days bringing on a premature flow of sap during late winter, after which a cold snap would freeze the sap and burst the bark.

VALUABLE TIME SAVED

One of the chief advantages of fall plowing, to our mind, is the amount of time which is saved thereby during the busy spring season. As a general rule, when land is ready to be plowed in the spring it is ready to be worked. It is obvious then that if the land is plowed the previous fall, one can commence cultivating earlier in the season to the extent of the amount of time saved by not having to do that same plowing in the spring. It is in the early growing season that we desire to stimulate our trees and the earlier the better. The trees need all the nourishment they can obtain to set and carry a good load of fruit. Later in the season the supply of nourishment must be curtailed and

the wood matured before frost. So we plant cover crops. Early cultivation is therefore a necessity.

A most important factor to be considered is the destruction of injurious insects. A large proportion of these pests spend various stages of their life cycle in the ground during the winter months. When the land is turned over their cocoons and egg masses are exposed to the frost and the action of the weather and destroyed.

MAKES PLANT FOOD AVAILABLE

In increasing the available plant food in the soil, fall plowing plays an important part. Frost and water are two of the greatest disintegrating agencies in nature. Heavy clay soils most particularly are benefited by their action. The hard pan when exposed during the winter is broken into particles and in the spring works up nicely. We have noticed that land which has a tendency to heave badly and throw the trees out is not nearly so liable to show this tendency when fall plowed.

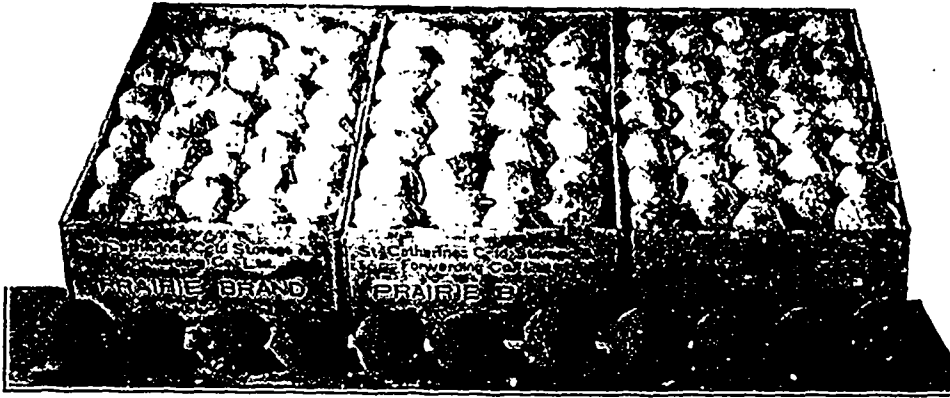
The conservation of soil moisture is an important factor in up-to-date orchard practice. There are very few crops grown that do not require more moisture than that which falls during the growing season. Some require several times more. It is apparent then that the rain which falls during the winter months must be saved for future use. Here again fall plowing plays a part. The loose soil that has been turned up absorbs and holds the rain and melted soil which would otherwise largely run off.

CONSERVE MOISTURE

Thus the subsoil becomes a reservoir in which is stored the water needed the following season. This water tends to dissolve and with the aid of the frost break up the complex soil compounds. The soil also because it is more open is more aerated, and therefore better suited to the growth of bacteria, which in turn break up the organic matter of the soil. Nitrates, which are so necessary to the early spring growth of the tree, are thus liberated when most needed.

With labor ever becoming scarcer and harder to obtain, how to employ the help to the best advantage becomes an acute problem. Here again fall plowing proves advantageous. At this season of the year the teams are not much required for other kinds of work, which will not be the case next spring. To the man who engages in other lines of farming in addition to orcharding, the advantage of getting as much plowing as possible done in the fall is even more evident.

Thorough cultivation is the great secret of success in all crops, whether vegetable, orchard or farm. It is a choice between the two, cultivation is much more valuable than irrigation.



A Sample of the Peaches Shipped by the St. Catharines Cold Storage and Forwarding Co.

The Value of Attractive Fruit Labels

E. H. Wartman, Dominion Fruit Inspector, Montreal, Que.

We are living in an age of art and technicalities in our fruit trade. The descriptive labels on our beautiful fruits have become known as "Trade Marks," well established and bringing wealth to the owner who has been honest in all his representations. The old black stencil on anything so beautiful and tender and inviting as fruits seems rather out of place in the twentieth century. The plain black may be suitable for boxes of bolts or kegs of nails or molasses casks or a hearse, but surely it is too dead a color and unsightly on fruits or flowers.

Nothing, in my mind, is better for fruit packages than a bright descriptive label on the contents. Where the colors of the fruits are bright red, yellow or green, let these colors be very prominent on the packages which will rapidly develop a trade that will be lasting. The beautiful labels on oranges and lemons from Spain, Italy and Greece, are particularly attractive. When sixty to eighty thousand of these packages are unloaded from one steamer into steamship sheds in Montreal and piled up regularly, one is struck with the beauty of the picture.

From Florida, the West Indies, West and South West Oregon, Idaho, California, Washington and British Columbia, we also see beautiful descriptive labels. Many carloads of California fruits go through Montreal for Glasgow, and when piled in sheds look very attractive. One California firm, A. Black, of Santa Clara, has labels phenomenally beautiful; so much so that one would really think the fruits pictured thereon were real specimens of green or yellow or blue plums and yellow or green pears.

Our large dealers in many cities in Canada have large show windows to accommodate a half car of these fruits. The labels make, in connection with these displays, a very attractive showing. Those who have seen such displays have carried away in their minds these

indelible impressions—in fact they have declared them simply beautiful.

To design a really attractive label may take some time and study, but when accomplished it is a stepping stone to fortune. What shall I say about boxes and barrels of our own grown fruits stencilled in black? No pains are taken in putting on the label. It is simply a blotted or smeared lot of letters hardly readable. This kind of marketing is no credit to any shipper. Some, however, have clean cut stencils accompanied by some nicely cut figure, such as a cluster of fruit or a beaver or three stars. These may be very good for the coarser packages.

Our fruits when well matured and uniform in grading are worthy of the most artistic labels that man can devise. There are many of this character in use to-day, yet there should be many more beautifully designed labels placed on our Canadian fruits that are sent to many lands.

With sweet cherries I have found that two sprayings of lime-sulphur is a sure preventative of rot. With peaches I find that one spraying with lime-sulphur while the trees are dormant is sufficient. L. Wolverton, Grimsby, Ont.

Pears for Planting

Prof. J. W. Crow, O.A.C., Guelph

There is an increasing demand for pears. This fruit, under intelligent management, offers as good opportunities for profit as any other tree fruit, but in the past the culture of the pear has been sadly neglected except in one or two localities. The best money variety is Bartlett. The market for it is in Ontario and eastern towns and cities and in the north-west. Canning factories also take care of large quantities.

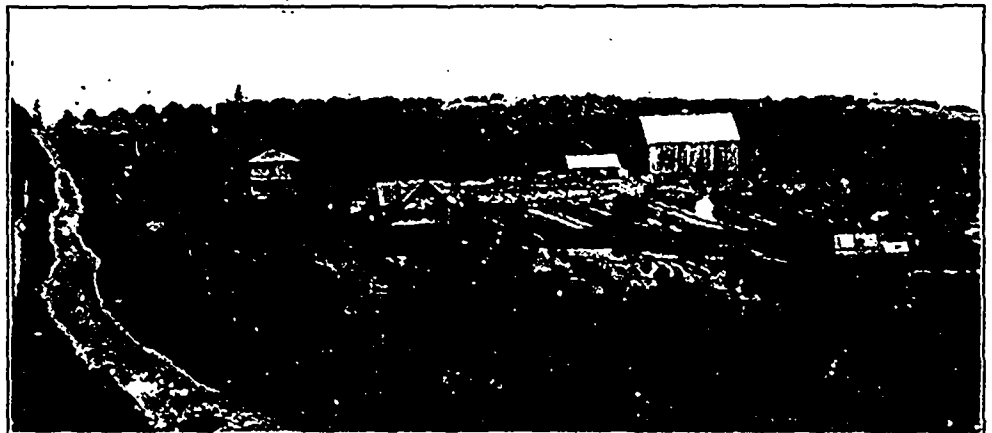
Under skilful management, Clapp's Favorite would be a desirable commercial variety. It blights rather badly, and is, moreover, a variety which is in good condition for only a short time after picking. It requires to be marketed immediately. It is earlier than Bartlett and valuable on that account. Of the varieties which come after Bartlett, there are very few of value. Kieffer is more widely grown than any other, and the principal market outside of the export trade is with the canneries. It blights less than most varieties, but anyone undertaking pear culture would do better to take the two varieties mentioned previously, and by giving proper attention to blight control good success can be attained.

The Roadside Problem Discussed

James Sackville, Bewdley, Ont.

That was a most interesting article, "The Roadside Problem," which appeared in the May number of The Canadian Horticulturist. Let a y one observe, as they ride through the country, the number of trees that are infested with these pests, tent caterpillars. While they are allowed to propagate undisturbed on such an immense scale, it is almost impossible for the progressive fruit grower to successfully combat these enemies.

The writer says: "It is the farmer's



Orchard Scene, Knob Hill District, Armstrong, B.C.

The thirty-acre orchard of Mr. W. S. Burnette may be seen and in the foreground Mr. E. I. Petar's fruit and chicken ranch.



A Prolific Bearing Tree on the Farm of Robert N:wcombe, Belcher Street, King's County, N.S.

problem and not until the farmer accepts the road passing through his farm as a part of his farm will the problem be solved." But some farmers are so crowded with other work and others so carelessly indifferent that the work of those who would clean up is largely lost through the negligence of others.

If I were allowed to make a suggestion, I would say: Let the Government appoint competent men who would do the work thoroughly. Where careless farmers or others neglect the work on their own trees, let the Government agent do the work at the expense of the occupant.

Controlling the Plum Curculio

Arthur Gibson, Chief Asst. Entomologist, C.E.F. Ottawa

THIS well-known enemy of the plum and apple has a special fondness for the fruit of the apple, both in the adult as well as in the larval state. The adult beetles hibernate beneath rubbish and dead leaves on the ground, or even under the rough bark of trees. In size the beetle is a little less than a quarter of an inch in length and in color is brown and rough, with black and greyish markings.

In early spring, about the time the buds are bursting, the beetles leave their winter quarters and soon seek nearby fruit trees which later they attack, and in the fruit of which they lay their eggs. Soon after the blossoms fall, sometimes within two or three days, injury by the Plum Curculio is detected. The females lay their eggs mostly in June, but egg-laying is continued throughout July and into August. The eggs hatch in about four or five days, and the young grubs at once begin to burrow through the fruit. Several grubs may occur within a single apple; in fact, as many as eleven have been found within one specimen. In such

cases, of course, practically the whole inside of the fruit is eaten.

LENGTH OF ACTIVE LIFE

From the time the eggs are laid until the time the grubs are mature and leave the fruit to pupate in the ground, a period from about three weeks to a month or so is passed as a pupa, in the earth a short distance below the surface. In late July and in August and September the beetles emerge from the pupa, and from the time of their appearance until they seek winter quarters for hibernation, eating is their chief occupation.

It is during this period that the important damage is done by the adult beetles in feeding. In spring the punctures made by the beetles feeding are usually small, and in the growth of the apple do not later, as a rule, show to any marked extent, but in the late summer and autumn months the punctures are large, and several may be present in the same apple. After these punctures have been made by the beetles, the whole is rendered larger by evaporation and the skin and flesh become dis-

colored, the whole, of course, rendering the fruit unfit for the market. Besides the plum and apple, cherry, pear and apricot are also attacked by the Plum Curculio.

In the control of this insect there are three chief recommendations to make, namely: First, spraying the trees to destroy the adult beetles, clean cultivation and the getting rid of all rubbish; second, the careful gathering up and destruction of all fallen fruit; third, clean cultivation.

Where spraying with the poisoned Bordeaux mixture is regularly practiced, using as a poison about three pounds of arsenate of lead to every forty gallons of mixture, a very large percentage of the beetles will be destroyed. The spraying immediately after the blossoms fall is very important, as this will catch many of the insects at a time when the females are about to begin ovipositing. The gathering up as much as possible of all fallen fruit particularly in the earlier part of the season and destroying the same, will of course, also destroy large numbers of the larvæ within the fruit. If it is impossible to destroy the fruit either by boiling or by burying it in a deep hole and covering with earth, it might be spread out in an open space so that the direct rays of the sun would reach the apples. The grubs are very delicate and experiments have shown that when direct sunlight falls upon the young fruit the contained grubs are killed.

DESTROY ALL RUBBISH

All weeds or other useless vegetation and rubbish should be removed and in orchards where surface cultivation is practiced, especially during July, large numbers of the pupæ will be disturbed by being exposed to weather conditions, birds and other enemies. With regard to such cleaning up it is important that all useless growth near fences and along road sides be removed as well as all wild plums and other useless nearby fruit trees.

When buying nursery stock, the grower should stipulate the class of stock desired, and should expressly intimate that if stock is not satisfactory it will not be paid for. Orders should be sent in early and stock should be delivered early. Stock which arrives late and proves unsatisfactory is very often planted by men who would rather take chances and say nothing than to refuse the stock and wait another year in order to secure better trees. On receipt from the nursery, trees should be inspected at once. If at all dried out they should be heeled in immediately, and if seriously dried out the entire tree should be buried in the ground, but even this recovery is not always certain.—Prof. W. Crow, O.A.C., Guelph, Ont.

A Modest Home and its Lovely Surroundings

"STONE WALLS," sings seventeenth century Lovelace, "do not a prison make;" nor do four stone or brick or wood walls make a home. Apart from the inner conditions constituting a home, the surroundings are an important element in making a house a home. The grandest building, without apt environment, is like a

drawing room. Nature shows infinite variety with exquisite beauty of effect in her placing of plants, flowers or trees. Therefore, if we would succeed in making an effective floral or arboreal setting for a residence, on the natural plan, we must study to follow nature's way.

One of the two or three main essentials in a garden or grounds of this kind

grounds like guardian sentinels and not too near it—to shut out the vital sunlight—and trimmed high so that sunlight and air have free play consistent with shade and shelter at some time of the day, and with the growth of grass and other things.

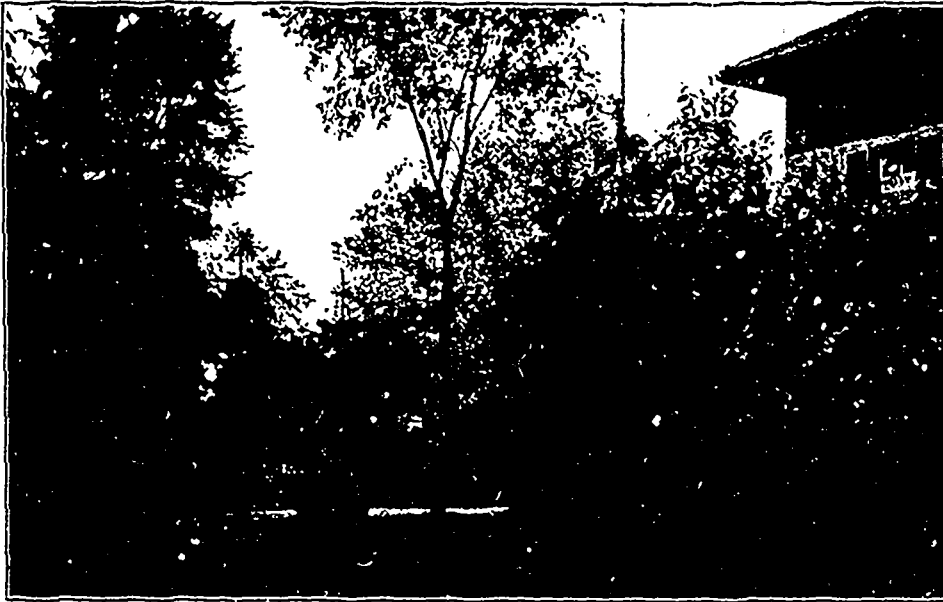
Another essential condition of nature's garden-making plan is a lawn of good turf, not necessarily mathematically level, like a bowling green, but smooth and, at all times, neatly groomed—as in nature, a companion idea to *rus in urbe*; the fairest beauty of face would be spoiled if the face were not kept clean.

In the natural scheme of doing things a lawn is not a mere uniform stretch of sward, but a place for planting trees and shrubs and flowers, corresponding to the trees or clump of trees and shrubs of varied sizes and groupings that make the diversity and beauty of a landscape, which without them would be a "flat, stale and unprofitable" stretch of irksome verdure.

The beauty and homely effect of the placing singly or in groups of shrubs and flower plots, depend upon fidelity to nature's way of doing these things. Done in this way, the arrangement of turf, trees, shrubs, and flowers—if studied absence of system and symmetry can be called arrangement—will have a strikingly beautiful and artistically natural result.

Given the house and suitable ground, and a few fortunately planted old trees, surprising results can be got at trifling cost in money—only a little, or rather, a great deal, of loving care and exercise of common sense, or what is rarer, cultured sense of the beautiful.

The pictures accompanying illustrate, to a necessarily limited extent, the



Front Lawn, Castlewraye, Residence of Mr. F. R. Yokome, Peterboro, Ont.

diamond without its setting, which, fittingly joined, Benvenuto Cellini, regarded as converting a mere precious stone into a jewel, giving it its full beauty value. Surrounding a house with trees, and planted and tended grounds, as far as the external element goes, makes it a home in a real, and, in proportion to the skill and taste employed, beautiful sense.

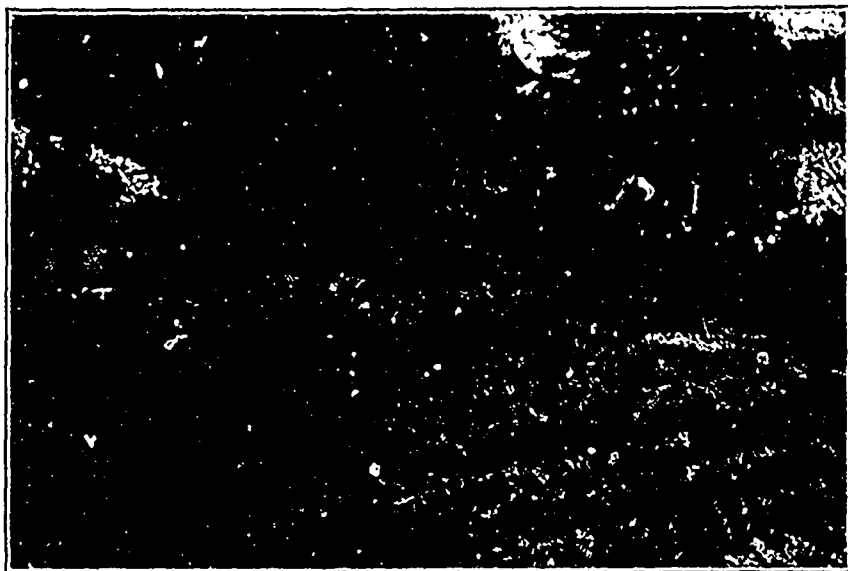
The home-making environment of a house may vary, according to conditions and facilities from a tiny lawn, the size of a dining table, to a sweeping expanse of grounds, each effective or otherwise, according to treatment.

For a small or medium sized area the formal or Italian system of gardening—using the word in its widest meaning—is the better adaptable. The more picturesque and homely way of natural gardening is more, if not exigently adaptable to larger grounds. The natural way is to follow, and at the same time direct and, improve upon nature's way, by adapting it to conditions and desired results. Nature, in planting her trees and shrubs, never places them symmetrically; she never shows the bad taste of "matching" a shrub or flower with one of the same kind. If the good Lord were planting rose bushes, He wouldn't place one on each side of a house entrance, as stiff and formal as two grenadiers on guard at the door of a royal

is trees, and space permitting, the bigger and the most fittingly placed the better. Trees are the first condition of a house setting. They give dignity and a sense of repose, with their "calm shade that brings a kindred calm." Mrs. Hemans' "stately homes of England" owe their charm to "the tall, ancestral trees" that make it a "pleasant land." Trees should surround the house and



East Side View, Castlewraye. Note the Sylvan Effect



View in the Garden of Mr. J. H. Bennett, Barrie, Ont.
A description of this garden was published in the February issue of *The Canadian Horticulturist*.

charming effects that have been produced by the expenditure of only a few dollars. The pictures are two views of the house and grounds of "Castle-wraye," the residence of Mr. F. R. Yokome, editor of the *Examiner*, and represent the work and time of fewer than a dozen years and the expenditure of only a little money. When the place came into his possession, its unkempt, neglected and weed-grown condition made its purchase price a reasonable one; but its possibilities made it desirable. The grounds, half an acre in extent, have the house (with about 75 feet of well shaded and ventilated verandah on the south and east) placed in the middle, so that the sun strikes every window on all sides at some time of the day, subdued in part by the splendid and well-grown trees, chiefly elms, that line the 120 feet of street frontage—by the way the only straight lines about the place—or stand at the margin of the grounds on all the other sides. The grounds are nearly all laid down to lawn, which is not a dead level, but slopes irregularly from east to west, and is dotted with shrubs of varying kinds and sizes. Along part of the front within the enclosing fence—an unfenced lawn is a "common"—and at both ends of the grounds, is planted practically a hedge of unclipped lonicera and philadelphus, grandiflora, and coronaria—incorrectly called syringa—both easily grown and common, but very effective shrubs; and two or three beautifully-shaped specimens stand here and there. Other common but effectively grouped shrubs are althea, wigelia, spiraea, berberry, two or three varieties of hydrangea, and three or four trees of our most beautiful conifer,

red cedar. Other features on the west part of the lawn are perennial borders, and at the rear is a stationary trellis for sweet peas, with a careless hedge of lonicera, white lilac, and philadelphus as a background. With the comparative abundance of shrubs and trees, they are as disposed and treated—the trees trimmed high—that there is a good thick turf, whose growing is almost the only artificial and formal element in these grounds. Considering the trifling cost, these grounds, as may be judged by the pictures, give a decidedly charming ensemble, the chief charm of which is its natural, impressionist beauty and homelike, peaceful and reposeful effect, expressed by an appreciative neighbor in the words: "It's an awful homey-looking place"; and its adornment didn't cost the price of a set of awnings for an ordinary house.

The Modern Peony

J. H. Bennett, Barrie, Ont.

There is probably no other plant with such varied usefulness as the peony. Its use in beds or clumps and for effective massing in landscape work is unequalled. There is no handsomer border than one of peonies and here it shows to best advantage in clumps of two or three plants. Other plants may be used if continuity of bloom is desired. An effective plan is to plant narcissus and lily bulbs between the peonies. The narcissus gives earlier bloom than the peonies before the latter have finished blooming, and their blossoms last for some weeks after the peonies are done.

An attractive use for the peony is as a low ornamental hedging for a drive, walk, or lawn, where defence is not re-

quired. The dark, glossy, green foliage, untouched by insects or disfigured by disease, is exceedingly attractive through the spring and hot summer months.

A word of caution may here be given with reference to the blooms of the peony. After being transplanted peonies will not produce typical blooms the first season, indeed not until they become thoroughly established. Many fine double varieties will throw single or semi-double flowers in the first and second years. It takes fully three years from the time the root is planted to produce normal flowers. Blooms therefore should not be finally judged the first or second season, and making comparisons in a large collection before the third season is fraught with considerable risk and often leads to disappointment.

LIST OF VARIETIES.

I must of necessity refrain from any attempt to give a list of the best kinds of peony, as this is to a great extent a matter of opinion, taste, and fancy. I will, however, try to give a list classified as early, mid-season, and late, with a view to helping those amateurs who desire to plant such varieties as will prolong the blooming season:

Early white, *Festiva Maxima*; early pale pink, *Eugenie Verdier*; early deep pink, *Edulis Supera*; early red, *Augustin D'Hour*.

Mid-season white, *Madame Crousse*; mid-season pale pink, *Albert Crousse*; mid-season deep pink, *Princess Beatrice*; mid-season red, *Felix Crousse*.

Late white, *Mireille*; late pale pink, *Grandiflora Rosea*; late deep pink, *Madame Forel*; late red, *Eugene Bigot*.

While refraining from giving a list of what may be considered good or the best peonies, there are no poor ones, yet anyone who grows *Festiva Maxima*, *Edulis Superba*, *Golden Harvest*, *Modele de Perfection*, *Felix Crousse*, and *Eugenie Verdier* will not be disappointed, either in size, color, beauty, or fragrance of the blooms.

While the first cost of many varieties may seem high, the peony is really the most economical plant one can buy, from the fact that it represents a permanent investment and one which pays annual dividends of increase of at least one hundred per cent.

Almost every family of even the most moderate means spends annually quite a good sum on geraniums, and other bedding plants and at the end of the year has nothing left to show for it. Plant the peony and it will last as long as you do, and longer.

Anyone who undertakes the culture of this most beautiful plant will be amply repaid by the fragrance, beauty and abundance of bloom, with which his garden will be filled.

Fall-Work with the Flowers

Henry Gibson, Staatsburg

WHEN October comes to tint all growing things, it almost seems as if nature wished to remind man that we can still enjoy a vast amount of bloom indoors during the winter months if we would only pay a little attention to the needs of our plants.

Plants intended for winter blooming indoors, which have been summered out in the garden or on a shady corner of the verandah, will now be indoors. Give them all the air possible on fine days, for the change from outdoors is a trying one, no matter how vigorous the plants may be. With proper attention and atmosphere they should thrive, but how few do at all well. Perhaps you have tried to grow them and had your disappointments, despite your best efforts and attention. Perhaps you put the blame on the furnace, presuming that the gas killed them, as surely it would, but it was not really the gas, but lack of humidity in the atmosphere of the rooms, which was the cause of your failure.

The active root hairs of a plant are almost aquatic and must always be in contact with an adequate supply of water.

The stem and leaves are aerial, but their behavior and form are largely determined by the water in the air; that is, the humidity. The water supply is used by the root hairs, while the water loss is the result of evaporation by the leaves. The humidity of the air exerts a direct control upon the amount of water evaporated by the leaves, and it is evident that the evaporation will be greater when the air is dry. If this evaporation or water loss is greater than the supply, curling, drooping, and wilting of the leaves ensues.

Even when you water your plants faithfully, the excessively dry atmosphere of the house is apt to overwork them, by drawing up moisture through the stem and leaves, for dry heated air will take up what moisture it requires from every possible source. When you consider that the humidity outdoors on a summer day is about seventy per cent. you will appreciate what an unnaturally dry atmosphere obtains in our homes in winter, where if any water at all is evaporated it will be at the most but a few quarts, with a resultant hu-

midity of about eighteen to twenty per cent.

By all means evaporate water freely, both for your own good as well as for that of your plants, by keeping a pot or kettle of water steaming on the heater or by pans on the radiators. Another way to accomplish the same result is to elevate your pots on empty thread reels and fill the saucers with water. Elevated in this way, the air is able to pass through the hole in the bottom of the pot, which would not be the case if the pot were stood in the saucer when it was filled with water.

PROTECTING THE OUTDOOR PLANTS

If we would have the best from the outdoor garden next season we must give it some attention in the way of mulching the various beds and borders to help the plants withstand the rigors of winter. While it is not advisable to give any protection to the beds and borders until severe frosts are expected, yet it is advisable to get the mulching material ready. Strawy manure and leaves, held in place with pine boughs, make excellent material for this purpose.

As soon as the early frosts have cut down the plants, clean them off, and get out all the weeds. These latter pests are sure to drop some seeds that will give you trouble next spring. When cleaning off the old stalks of the plants, sever them four or five inches above the ground. This allows them to ripen better and prepare for the winter's rest. Carry away the old rubbish that you clean off and burn it. Don't use it for protection during the winter, for it is sure to contain larvae and cocoons of insects, which would hatch out in the warm days of next spring and give you

lots of trouble, to say nothing of the damage to the plants.

TREATMENT OF BULBS

Gladioli, Dahlias, Cannas, Caladium, and other tuberous subjects should be lifted and placed in a sunny place for a few days, when they should be stored in a frost-proof shed or cellar until the spring. When storing these roots and bulbs, artificial heat must be avoided or they will be spoiled. A temperature of from thirty-eight to forty-five degrees is the most suitable for these subjects during the winter.

Roses will require protection during the winter. If they have made long growths that are likely to whip with the wind, cut them back about one-third of their length. Protection may be afforded (if the bed is a round one) by running a length of wire netting round it and filling the centre with dried leaves, on which may be put some pine boughs or other brush to prevent them blowing about. Another method applicable to more isolated plants is to tie straw securely round them and earth them up around the base. Crimson ramblers and other roses growing on walls should be taken down and buried with soil to the depth of a foot or more.

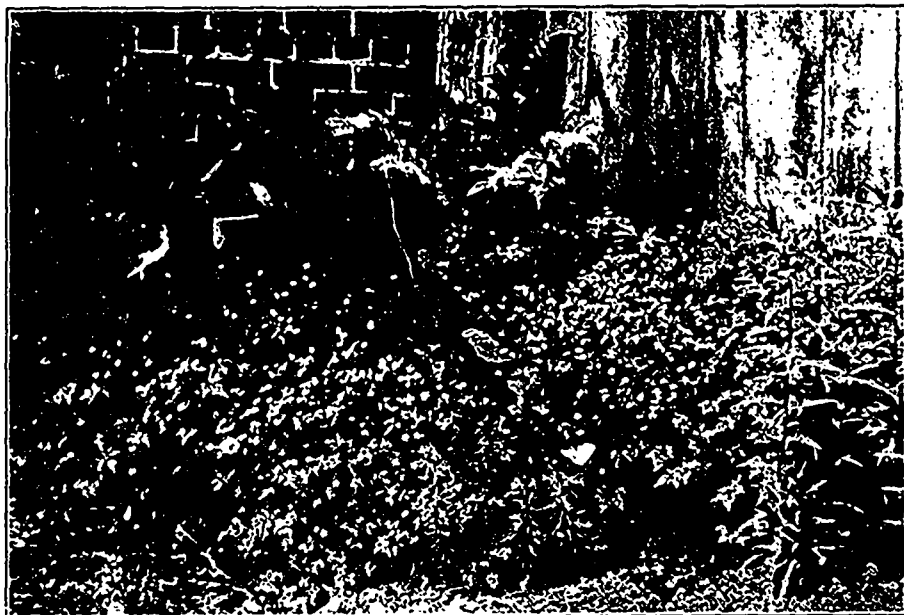
Short Hints on Planting

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

Do not begrudge labor in digging a hole for planting any tree or plant. Dig it deep and wide enough so that the roots can be spread out nicely over a surface of fine soil. Loosen the soil a spade's depth below where the roots are to be placed. The terminal points of all roots should point downward or in a horizontal direction, not upwards. Set the tree or plant a little deeper in its new



The Gladioli Grounds of Mr. A. Gilchrist, West Toronto, Where His Champion Gladioli are Grown



Wild Flowers in a City Garden

A lover of wild flowers who has had success in their cultivation in her garden is Mrs. Gowan, of Peterborough. The illustration shows a corner of her garden in which may be seen ferns, trillium, jack-in-the-pulpit, anemone, violets, golden-rod, orchids and Dutchman's breeches. The little blossoms in the foreground are a species of the wood geranium, Herb Robert.

quarters than when in the nursery. The surface soil mark can usually be seen on the stem of the plant. Stake all tall plants at once if tops are very heavy, rather than allow the wind to constantly blow them around in all directions. In tying plants or trees, tie them so that the tree cannot be chafed or rubbed.

Take off all wire fastened labels from the stems of plants or trees when planting, or they will, if neglected, cut the stem almost asunder in time.

In planting trees, use finely pulverized soil in and around close to the roots. Sand half an inch in depth sprinkled over the roots is a good material to induce a quick, strong root development. Never put manure of any kind in direct contact with the roots when planting. Pack the soil fairly firm around the roots so as to leave no air spaces. All of the roots should be in close contact with fine soil or sand. Puddling the roots before planting in a thick mixture of clay soil and water is useful, especially when the soil they are to be planted in is very dry.

Prune off sufficient of the growth of deciduous trees, shrubs, or rose bushes so as to give a proper balance of top and roots. A too large proportion of top to the root means slow development at the best. It is better to have the roots to overbalance the top in quantity, than the reverse. Rose bushes especially should have the tops pruned down to as small a proportion as possible, as they often have but a very small quantity of fine fibry roots. Cut off or shorten the large thick roots especially

where broken or damaged. The fibry roots are the roots that start dormant plants quickly into growth again. Plants or shrubs taken from fairly heavy soils usually have a better root system, and transplant more successfully than do plants taken from light, sandy soils. Plants or trees set out in very early spring, seldom require any water when planted.

Wild Flowers in The City

E. Aylesworth, Crichton Gowan, Peterborough, Ont.

Being impressed by the beauty and variety of wild flowers which grow in profusion within our city limits, I felt curious to know the extent of their beauty before man began to interfere with the soil. I accordingly searched for a record of them in pioneer literature, and found the following by Col. S. Strickland: "Several hundred acres of open plain were dotted here and there with clumps of oak and pine. In the spring these openings were gay with wild flowers. Amongst the first to show their varied beauties might be seen the red, white and blue hepaticas or liverwort, the white and yellow violet, and many others indigenous to the country. Later in the season the cardinal plant, lobelia (this plant grows wild in the woods, especially in damp places. It is used extensively among the settlers as an emetic), lupin, and tiger-lily, and a profusion of flowery gems, lent their aid to adorn the charming scenery of this sylvan spot."

The place here described by Mr. Strickland is the site upon which the

city of Peterborough stands. Peterborough is, therefore, by nature, entitled to its appellation, "The City Beautiful." I have seen old walls and banks near the river covered with wild flowers and vines of brilliant hue, more beautiful than anything under cultivation. Our city furnishes evidence of how persistently wild flowers cling to their native soil even when disturbed by cultivation.

The flowers which appear in the accompanying illustration were gathered within the city limits in July, about thirty different kinds being represented. The original, in addition to being a beautiful artistic photograph, is interesting to examine through a magnifying glass, the flowers being easily recognized in this way.

Little attention seems to be paid to the preservation of wild plants and flowers, yet an acquaintance with them is necessary in the study of botany, art and scientific floriculture. Therefore, should not our school teachers, school boards, and horticultural societies be interested in the preservation, where possible, of trees, plants and flowers?

As to the responsibility of parents in the matter, the admonition of Mrs. Traill is worth repeating here: "Mothers of Canada, teach your children to know and love the wild flowers springing in their path, to love the soil in which God's hand has planted them, and in all their after wanderings through the world their hearts will turn back with loving reverence to the land of their birth: to that dear country, endeared to them by the remembrance of the wild flowers which they plucked in the happy days of childhood."

A collection of wild flowers and ferns pressed by the late Mrs. Traill is one of the cherished possessions of our city museum.

Climbing Roses

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

The best way to keep climbing roses from being killed back by frost in winter is to take them from the trellis and lay them down as near the ground as possible about the end of October. About the end of November, or early December, three or four inches of strawy manure or some pine or cedar boughs should be placed over them. Tying them down in the way mentioned keeps them below the snow line, as a rule, during the winter. The covering protects them after the snow has melted late in winter or early spring. Take the covering off when the weather is dull, warm, and mild about the beginning of April.

Acid phosphates should not be sown with the seed or too near the roots of growing plants, as injury may result.

The Culture of Bulbs

Henry Gibson, Staatsburg

NO garden is complete without narcissus, which include jonquils, and the Chinese sacred lily, or fairy flower. The innumerable positions in which they can be planted to advantage in the garden is in a measure responsible for their popularity. They may be grown in the town lawn or clumped here and there in masses of distinct varieties in the herbaceous border. As a border for a shrubbery they give their full measure of graceful splendor. For natural plantations, outlying portions of the lawn, the wild garden, terrace slopes or the banks of streams, they possess a grace and beauty that is almost indescribable.

DEPTH OF PLANTING

Owing to lack of uniformity in the size of the bulbs it is not advisable to try to give any definite depth at which they should be planted. The simple rule of covering the bulb from two to two and a half times its length, measuring from the base to the neck where it begins to swell out into its rounding shape, is a good one. The distance between the bulbs should be three to four inches for the smaller sizes, and five to six inches for the larger ones. When naturalizing bulbs an effective way of spacing them is to take a handful from the bag and drop them where they are to be planted. In this way a natural grouping is the result.

For the window garden grow narcissus in pots the same as you would tulips and hyacinths. Don't plant single bulbs in a pot; they are not effective. Put five or six bulbs into a six or seven inch pot. The designations, daffodils, narcissus and jonquils, are often misapplied by amateurs, and the result is invariably disappointing. Daffodil is a name applied to all double narcissus. The name "narcissus" calls for the poet's narcissus and its family. Jonquil is a popular name given to all single trumpet narcissi, regardless of any other form or class.

The Chinese sacred lily produces white flowers with yellow cups in bunches of five or six on a stem. Although they do well when grown in pots, like other bulbs, they give the best results when grown in a dish or bowl half filled with water and pebbles.

A covering of some kind is desirable for all bulbs planted outdoors; not so much to keep out the cold as to prevent alternate freezing and thawing, which tears the roots, and frequently lifts the bulbs almost out of the ground. For this purpose nothing is better than nature's covering—leaves. Do not spread them on too thick or they will heat towards spring and send out a prema-

ture growth, which would be followed by disastrous results should frost get near them. Pine boughs, straw and old corn stalks are excellent substitute for leaves, but they, like the leaves, should be removed as early as possible in the spring.

POT CULTURE

Bulbs planted in pots for indoor blooming, and placed in a cool dark place, as suggested, will take from six to seven weeks to root. One can readily ascertain when they are rooted sufficiently by turning one out of its pot. If the soil is well interlaced with young white roots they are ready to bring to the light. This is a process that should be done gradually, as too strong a light at first has a very detrimental effect on the plants.

A good idea is to have a table with three shelves in it in front of the window. Such a table can easily be constructed at home, and the utility of it is too evident to need comment. When the first bulbs are brought in to the light, place them on the bottom shelf. After they have been there in the diffused light for a few days they may be placed on the second shelf, and finally on the table, into full sunlight. Meanwhile the lower shelves can be fitted with other pots to provide a succession of bloom.

Following is a list of seven varieties of bulbs that will provide continuous bloom from Christmas until Easter in the window garden. The first date is when the plants are brought to the light; the other two give the season of bloom:

Chinese Lily, second week in Nov.; bloom, Dec. 23 to Jan. 12; Paper White Narcissus, first week in Dec., bloom, Jan. 9 to Feb. 1; Grand Soliel d'Or Narcissus, first week in Dec., bloom, Jan. 22 to Feb. 13; Garrich Hyacinth, third week in Dec., bloom, Jan. 28 to March 1; Poeticus Cunatus Narcissus, last week in Jan., bloom, Feb. 26 to March 19; Van Siaw Narcissus, second week in Feb., bloom, March 7 to March 25; Princess Manionne Tulip, first week in March. bloom March 23 to April 12.

Fertilizers for Ginseng

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

Acid phosphate (treated rock or bone) is a satisfactory fertilizer for it maintains the acidity of the soil and thus prevents conditions favorable to the development of the rust or rot fungus. Acid phosphate should be applied to the beds at the rate of one thousand pounds an acre. Some growers use heavier applications than this.

The digging in of a good forest leaf mulch by some growers is claimed to make an excellent fertilizer and it is thought to keep the soil in the proper acid condition. Experiments are now under way in the United States to test the efficiency of leaf-mulches in maintaining the acidity of the soil and preventing rust.

Nitrate of soda is often applied to ginseng beds, but great care is required in its use as heavy applications often cause a burning or scalding of the foliage. The same is true of heavy applications of barnyard manure especially if applied fresh. A light mulch of farmyard manure, even fresh, applied in the fall of the year, gives good results.



Calceolarias in the Border at the Guelph Agricultural College

Fall Work in The Vegetable Garden

By P. D. Powe, Cainsville, Ont.

DURING the present year there has been a large number of new men started into the market garden business who have little or no experience in this line of work. To them the following may be of use:

Roots should be pulled or plowed out on a dry day, when the soil is dry enough to shake off. The leaves should be removed with a knife or twisted off just above the crown. When cured, the tops make a fine feed for the winter months. Where there is no silo, the following has been found to answer well:

A broad, flat trench, eight to ten inches deep, should be dug in a well-drained spot. In this the fresh leaves are placed eight inches deep, heavily strewn with salt and then thoroughly rolled down. (You can't pack too hard.) Then a fresh layer of leaves, salted and packed as before, is added, and when you have all your leaves used up finish the heap with a coat of straw three inches deep. The soil removed from the trench is packed over all to keep out water and air. This coat should be about three inches deep. In eight weeks the ensilage will be thoroughly cured, and should be used before you start on your roots.

STORING THE ROOTS

The roots themselves should now be tended. While a good roothouse is very desirable, it is by no means a necessity. Mangels, turnips, parsnips, and carrots may be stored in heaps in the field. A layer of clean straw is spread upon the ground two inches deep and four to six feet in diameter. Upon this build a pyramid to a point so that no more roots can be placed on top. The pile is then covered with three inches of clean straw and drawn to a chimney at the peak to let off the gas. Then cover the whole with three inches of dirt. When winter really sets in, increase this to six inches.

Potatoes should be harvested either with forks or with a potato digger. Allow them to dry for a couple of hours before gathering. This ensures cleaner potatoes and often prevents rot. Store in a dark pit or cellar at a temperature of thirty-four to thirty-six degrees Fahrenheit. Potatoes lose about fifteen per cent. of their weight during winter.

Cabbage may be very easily handled during winter by storing in pits. Take a well-drained piece of land, place the cabbage together with the outside leaves left on. Stand them head down as close together as possible. Cover with eight to ten inches soil, well worked in around the plants. After a first hard freeze, cover the whole with straw or old cornstalks.

In storing celery, place each plant, with a ball of earth adhering to the roots in a box, roots down, as close as possible. Cover with straw and place in a cool cellar. Another method is to make rows, three to six plants wide, on a rise of ground and as long as required. Bank up to the tops of the leaves with six inches of straw, and on top of the straw place three inches of dirt.

THE ONION HARVEST

Onions should be harvested as soon as the tops die down. Pull them and allow them to lie in the row for a week under ordinary conditions. A dry time should be chosen so that the onions may be well dried. If it rains upon the onions, turn the lot as soon as possible. When they are thoroughly dried remove part of the roots and tops from the bulbs. Sort out all stiff necks and soft onions from the others. Place the good onions in open slat crates so that air may pass through, and store in a cool shed or loft. Keep them from

light and just above freezing point. When wanted for market remove the roots and balance of top.

PREPARING FOR MARKET

Great care must be exercised in selecting for market only the smooth, regularly shaped specimens, which should be graded to size. Colour should also be considered, as an attractive appearance means much.

To have roots of good condition, they must be grown quickly, thereby ensuring them free from all woodiness or coarse texture. They must be carefully washed, cleaned, and trimmed, while boxes, baskets and bags should be clean and present a neat, natty appearance. The small, misshapen roots should be fed to the cattle, as they detract from the value of the goods when marketed.

Many farmers do not know of the money to be made, with little work, from growing mangels. These readily find a market in town and city. One man, a neighbor of mine, made \$20 in one day selling them in bushel lots, at twenty-five cents a bushel. Can you make money more quickly?

Storing Vegetables for Winter Use

Henry Gibson, Staatsburg

ALTHOUGH the growing season is over, the vegetable garden demands some final attention. Where crops are still in the ground and weeds have been allowed to gain the upper hands, cut off whole with a scythe and burn them, thus making it easier to get at the crops and also preventing the weeds from seeding.

It is a great mistake to allow the vegetables not used to rot on the ground. They will pay handsomely for lifting and storing. A good dry frost-proof cellar from which all artificial heat is excluded is an ideal place in which to store them. When such a place is not at one's disposal a substitute may be had by partitioning off part of the cellar and providing for ample ventilation from the outside. Or a cold north room in the house where the window can be kept open most of the time will do very well. In the latter case, boxes or barrels, fitted with spaghnum, are very suitable, as the spaghnum is light and clean. For storing in the cellar, clean, dry sand is generally used for storing most root crops which would shrivel if left exposed to dry air.

In storing fruits and vegetables, always see to it that they are clean and sound—the smallest spot or bruise is a danger centre. Keep the temperature as even as possible and give air on all possible occasions. Keep an eye open for rats and mice.

Beans still in a green state can be picked and preserved in modern glass jars. Those in a dry state and those

partly dry may be stored, vines and all, under cover, and later picked and shelled.

Beets, carrots, turnips, and parsnips may be stored in sand or moss. Cut off the tops within an inch or two of the root. Only sufficient parsnips for immediate needs should be lifted, as they keep quite well in the ground during winter.

Cabbage and cauliflower may be hung up by the heels in the cellar. If large quantities of cabbage are to be saved, a trench in the garden should be dug and the cabbage placed in it. Cover with some clean straw and then soil to the depth of ten to twelve inches.

PACK CELERY WITH ROOTS ON

Celery can be packed in narrow boxes on two or three inches of wet sand. Leave the roots and earth on; pack upright and close together. A slight freezing will not hurt it.

Cucumbers, melons, and eggplants cannot be kept over winter, but if they are cut just before frost, and stored in a dry cold cellar, they will keep good for some time.

Potatoes and onions may be stored without any covering in a cool, dark cellar. Potatoes are best in a bin of convenient size or they may be placed in a corner of the cellar, and kept in place with boards. Be sure that the onions are perfectly dry before putting them into their final storing place. Perhaps the best receptacles for storing these are slatted barrels or boxes, giving free access to air.

Squash and pumpkin should be gathered before frost, cut with a small piece of vine attached. Handle them as carefully as you would eggs, as the slightest bruise will soon spoil them. Store in a sunny dry place where frost can be kept out. Later store in a dark, dry place, with the temperature as near forty degrees as possible.

HOW TO TREAT TOMATOES

Just before frost, pick the best of the unripened tomatoes and place them on some clean straw in a cold frame or greenhouse. Others may be put on straw in the cellar. In this way you may prolong your supply of tomatoes until nearly Christmas.

Put a few plants of parsley in a pot or box and place them in the kitchen window for use during the winter months. Clean up the rhubarb and asparagus beds and put on a good dressing of coarse stable manure. If you have a greenhouse, and would like to utilize some of the space under the benches, lift a few roots of rhubarb for forcing. Tender young stalks of it are sure to be appreciated in mid-winter. In lifting, dig round the four sides with a spade, being careful not to damage the crowns. Turn the root upside down and let it lie on the ground to freeze well. Then place them under the bench where you intend to force them. Work soil well round and between the roots, so that the crowns are just peeping out; water thoroughly. Spray them occasionally with lukewarm water until the growth has started, and maintain as even a temperature as possible.

Potato Scab

Prof. E. M. Straight

POTATO scab should not be confused with the potato canker or wart disease, sometimes called the black scab. This latter disease is established in Newfoundland but is not found in Canada so far as we are aware of.

The roughened, scabby, pitted surface of potato tubers affected with scab is too well known to require description. It is probable that no other potato disease has a wider distribution. In addition to being disseminated throughout this country, it occurs in various parts of Europe, South Africa and New Zealand. In all probability scab occurs wherever potatoes are grown. In addition to the potato, turnips, carrots and beets may be attacked.

Many practical growers are of the opinion that lime, ashes, chipdirt, and other substances, cause the disease. The nature of the fertilizer used, the alkalinity of the soil may and do influence the amount of scab present on a given crop, but such agencies are incapable of producing life.

The cause of potato scab is a parasitic plant, to which the name of *Oospora Scabies* has been given. This plant is as dependent on certain conditions for its rapid development as the potato or root crop upon which it grows; but cannot grow in a soil unless seed of the fungus has first been deposited there. The old idea of spontaneous generation has long been exploded. We have grown

beyond the thought that chipdirt can give rise to life! Experiments have shown repeatedly that scab does not develop on new land unless it is affected from some outside agency. If clean seed potatoes are used on clean land, a clean crop is sure to result. All or nearly all of the infection of new areas may be traced to diseased seed.

SOURCES OF INFECTION

When the soil once becomes infected there are two possible sources of infection in future crops, viz., the seed and the soil itself. It follows then that some soils may give scabby potatoes even when clean seed is used.

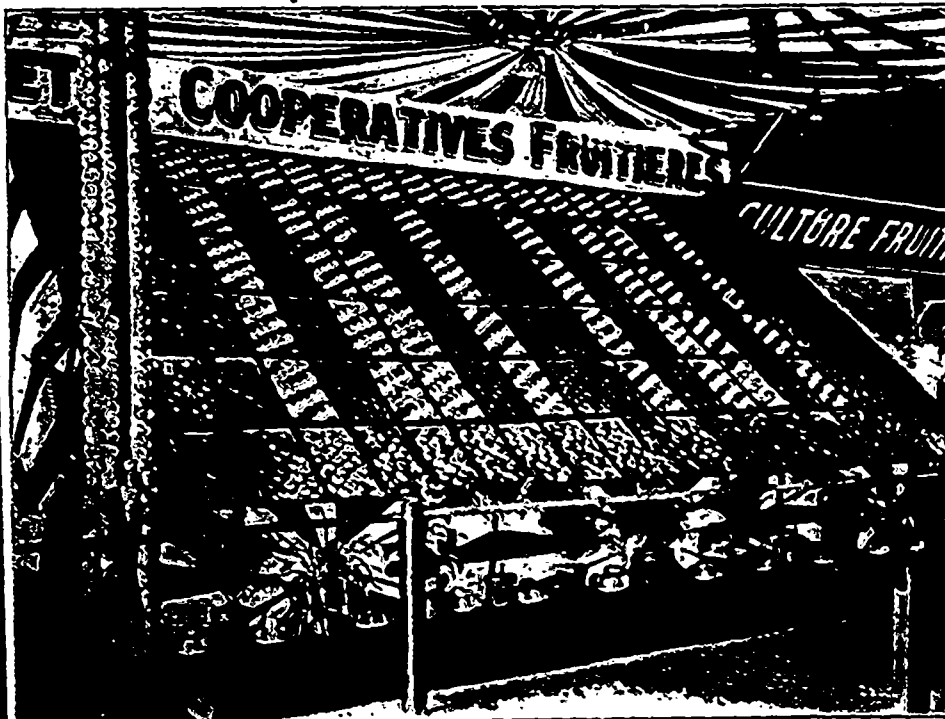
Scab thrives best on an alkaline soil. Dr. Wheeler, who has made an extensive study of the disease, summarizes his conclusions as follows: "The materials which favor scab and which are at times applied to land are: Stable manure, wood ashes, lime, magnesia and soda-ash. The materials which do not tend to make the scab worse, and which may tend to decrease it, are: Most commercial fertilizers, sea-weed, potash salts, land plaster, common salt and ammonium sulphate."

As has been pointed out, potato scab does best on an alkaline soil, that is to say it makes its most vigorous growth there. Unfortunately, potatoes also do best on a like soil; but potatoes are not so susceptible to soil conditions as the fungus. It is quite possible to grow potatoes on a soil slightly acid without materially affecting the yield, and at the same time discourage the growth of the parasite.

SULPHUR MAY BE USED

Sulphur applied to the soil gradually oxidizes with the consequent production of acid. Sulphur has been used on some soils with much success, especially on soils naturally neutral or only slightly alkaline. The process is expensive and hardly practical on large areas.

Similar acid soil conditions may be obtained by turning under some green crop, such as buckwheat. In the breaking down of this green manure, acid is formed often quite sufficient for the purpose. This system would produce best results on a neutral or slightly alkaline soil, and would not be entirely successful on a soil strongly alkaline, as the decaying crop would not produce acid enough to leave an excess in the soil. By making choice of fertilizers which do not encourage scab, by proper rotation and by turning under a green crop, a badly affected field is often cleared in a few years. Without such treatment, the fungus would remain active in the soil, without the presence of a susceptible crop for indefinite periods.



An Attractive Exhibit at the Exhibition of the Sherbrooke, Que., Agricultural Society

The exhibit was arranged by the Oka Agricultural College, La. Trappe, Que. It included a few boxes of apples that had been grown in the provincial demonstration orchards.

The Canadian Horticulturist
COMBINED WITH
THE CANADIAN HORTICULTURIST
AND BEEKEEPER

With which has been incorporated
The Canadian Bee Journal.
Published by The Horticultural
Publishing Company, Limited
PETERBORO, ONTARIO

The Only Magazines in Their Field in the
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OFFICIAL ORGANS OF THE ONTARIO AND QUEBEC
FRUIT GROWERS' ASSOCIATIONS
AND OF THE ONTARIO BEEKEEPERS' ASSOCIATION

H. BRUNSON COWAN Managing Director

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Canada. The second edition is known as The
Canadian Horticulturist and Beekeeper. In this
edition several pages of matter appearing in the
first issue are replaced by an equal number of
pages of matter relating to the bee-keeping inter-
ests of Canada.

2. Subscription price of The Canadian Horti-
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6. Advertising rates, \$1.50 an inch. Copy re-
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CIRCULATION STATEMENT

The following is a sworn statement of the net
paid circulation of The Canadian Horticulturist
for the year ending with December, 1912. The
figures given are exclusive of samples and spoiled
copies. Most months, including the sample cop-
ies, from 13,000 to 15,000 copies of The Canadian
Horticulturist are mailed to people known to
be interested in the growing of fruits, flowers
or vegetables.

Table with 4 columns: Month, 1912, 1911, 1910, 1909. Rows include January, February, March, April, May, June, July.

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

September, 1913..... 12,298

Sworn detailed statements will be mailed
upon application.

OUR GUARANTEE

We guarantee that every advertiser in this issue
is reliable. We are able to do this because the
advertising columns of The Canadian Horticul-
turist are as carefully edited as the reading
columns, and because to protect our readers we
turn away all unscrupulous advertisers. Should
any advertiser herein deal dishonestly with any
subscriber, we will make good the amount of
his loss, provided such transaction occurs with-
in one month from date of this issue, that it is
reported to us within a week of its occurrence,
and that we find the facts to be as stated. It
is a condition of this contract that in writing to
advertisers you state: "I saw your advertise-
ment in The Canadian Horticulturist."

Rogues shall not ply their trade at the expense
of our subscribers, who are our friends, through
the medium of these columns; but we shall not
attempt to adjust trifling disputes between sub-
scribers and honorable business men who ad-
vertise, nor pay the debts of honest bankrupts.
Communications should be addressed

THE CANADIAN HORTICULTURIST,
PETERBORO

EDITORIAL

RUINOUS DELAYS

In spite of the efforts that have been
made to effect improvements, several ex-
ceedingly annoying delays in the handling
of fruit by the railway companies have been
reported lately. Two car loads of fruit
shipped from Forest that were on the road
for almost double the schedule time, re-
sulted in an almost total loss for the grow-
er. Growers in the Niagara district, who
had made shipments of tender fruit to
Cobalt, learned later that they were held
over in Toronto because of poor connec-
tions.

Delays of this character not only cause
a deterioration in the condition of the fruit,
but tend to demoralize the market and re-
strict future orders. Cooperation and ad-
vanced marketing methods all go for
nought when the railways fail to get the
fruit over the road fast enough to ensure
its reaching the consumer in good condi-
tion.

Complaints made to the Railway Com-
mission have only elicited the information
that the Commission has no power to
award damages for delays. Although re-
cords from one district show that delays
of more or less length have been the gen-
eral rule, yet the Commission has ruled
that a few cars are not of sufficient im-
portance to warrant action being taken.
Apparently the only course open to the
fruit growers is to bring sufficient pres-
sure to bear upon the Government to have
the necessary power given to the Railway
Commission to deal with these matters.
Efforts to gain needful information are
being made by the Ontario Fruit Growers'
Association. Fruit growers can assist by
furnishing definite information to the
traffic expert of the association, Mr G. E.
McIntosh, of Forest, Ont.

BETTER ACCOMODATION NEEDED

It is gratifying to note that the directors
of the Canadian National Exhibition this
year gave considerably more attention to
the agricultural features of the fair. In the
horticultural department, however, there
was room for considerable improvement.

The most outstanding need was that of
room. There were several exhibits, more
particularly those of American railway
companies, that had no rightful place in
the horticultural building. Surely at an
exhibition of the character and reputa-
tion of the Canadian National the impor-
tant horticultural interests of the country
should be given every consideration. As
a result of the presence of the transporta-
tion exhibits, the vegetable displays were
relegated to a tent outside where hardly
one in ten of the fair visitors would think
of looking for them.

Then, too, the exhibits of seed and nur-
sery firms, while quite appropriate and
interesting, should not be so placed as
to break up the fruit exhibits as was the
case this year. The management of the
horticultural building should be left en-
tirely in the charge of the horticultural
interests. The entire showing in the
building could then be elaborated on a com-
prehensive plan that would do justice to
the important fruit and vegetable growing
industry.

Encourage Successful Methods

The directors of the Ontario Horticultu-
ral Association are arranging to give
more attention at the annual convention of
the association next month, to the work
of the local societies. This is a wise move.
The local societies are urged to send dele-
gates to the provincial convention. To do
so involves expense. The societies, there-
fore, naturally ask what benefit they will
be likely to receive by taking such action.
When it is found that the programme is
largely filled with addresses on the culti-
vation of different varieties of flowers they
are apt to conclude that their delegates
would not be likely to learn much that could
be brought back and used for the benefit
of their members as a whole.

Various societies in Ontario are making
distinct successes of different lines of
work. There is much that other societies
might learn from their experience. Speak-
ers, chosen from the more successful soci-
eties, can always impart much helpful in-
formation to the delegates from sister
societies. It is well, therefore, that more
attention is to be given to these matters
at the approaching convention than has
been the case during the past year or two.
A well balanced programme will prove a
source of strength to the convention.

UNEQUAL RATES

A matter of vital importance to the fruit
growers of eastern Canada is that of freight
and express rates to the prairie provinces.
A wonderful market is developing in that
great western country. While there is
room for all it is only just that no section
should be given more favorable rates than
another. It is in this regard that the
Ontario growers feel that they are getting
an unfair deal.

Ontario apples are carried to Winnipeg
for fifty-three cents per one hundred pounds
and to Calgary for one dollar and four
cents. That is, the haul from Winnipeg
to Calgary costs the Ontario grower fifty-
one cents. On the other hand, Washington
and Oregon apples are carried to Calgary
for seventy-five cents per one hundred
pounds and on to Winnipeg for no addi-
tional charge. Thus the American grower
can cover the whole western market at the
same rate. The Ontario grower, while he
has some advantage in shipping to Win-
nipeg, if he wishes to cover the market
to Calgary must pay the one dollar and four
cents rate. This is a matter that should
be brought to the attention of the Railway
Commission at the earliest opportunity.

In deciding to hold the Ontario Horti-
cultural Exhibition this winter in connec-
tion with the proposed National Live
Stock, Dairy and Poultry Show, the man-
agement of the exhibition should be
their guard to see that they are not led
into a position from which it may prove
difficult to retreat. The control of the
Horticultural Exhibition must not be allowed
to pass into the hands of a general com-
mittee charged with the direction of a
larger venture of which the Horticultural
Exhibition would form only a part. The
satisfactory situation that exists in connec-
tion with the direction of the horticultural
department of the Canadian National Ex-
hibition illustrates how disastrous a
change might prove. The date of the
Exhibition this year was set back a week
than usual at the request of the man-
agement of the larger show. Other
concessions in the future might easily
prove what is now a very successful hor-
ticultural exhibition.

PUBLISHER'S DESK

The front cover illustration of this issue has been made once more from a photograph of a Pacific Coast orchard. For some reason we are unable to explain the fruit growers of British Columbia take more interest in obtaining good photographs of their orchards and the work conducted therein than do the fruit growers of the east. We generally have plenty of good illustrations of western orchards on hand, but frequently find it difficult to obtain ones equally as good from Ontario, Quebec, or the Maritime Provinces. There are plenty of good orchards in all these districts. One reason western orchards are receiving the attention they are at the hands of the public may be found in the greater enterprise of their owners in this respect.

There is nothing special about this issue of *The Canadian Horticulturist*. Nevertheless we believe that our readers will find that it is a strong issue from cover to cover. Our back pages are a little more full than usual with reports of the fall exhibitions, but this is only what is expected to be the case at this season of the year. Our November issue will also be a strong one.

A number of the regular advertisers in *The Canadian Horticulturist* showed their confidence in their goods by making large displays at the Canadian National Exhibition. The many people who examined these exhibits learned much that was helpful and of interest. In this issue a number of these exhibits are described. Our readers will find a perusal of them interesting.

Our plans are already being laid for next year's issues of *The Canadian Horticulturist*. Many of Canada's greatest authorities in fruit, flower, and vegetable growing are being engaged to contribute articles prepared especially for the benefit of our readers. In order that this programme of articles may be made as valuable and complete as possible, we will welcome suggestions from our readers concerning topics that they would like to see dealt with, as well as special features that might be added. If you have any sug-

gestions which you think will aid us, let us hear from you.

Transportation Committee Meet

A meeting of the Transportation Committee of The Ontario Fruit Growers' Association was held at the Toronto fair grounds on Tuesday, September 2. The report of G. W. McIntosh, of Forest, who had been appointed by the committee as transportation agent, contains interesting information. The committee had asked the railway board for the privilege of free slatting of cars and a stop-over privilege. The board considered that the stop-over privilege was a special one which they had no power to grant. Shippers will be granted \$3 per car recompense for slatting. Railway companies have raised the minimum car load on refrigerator cars from five to six tons.

An effort will be made to have the awarding of damages on spoiled fruit come under the jurisdiction of the railway board. The question of reciprocal demurrage is another matter that will be pushed. The rates on fruit shipped to the west are far from satisfactory. British Columbia can send apples from Calgary to Winnipeg at lower rates than Ontario apples can be shipped from Winnipeg to Calgary. The whole question of rates will be referred to the Railway Commission.

SOCIETY NOTES

Guelph

"One of the most successful horticultural shows ever held in the county of Wellington," was the unanimous opinion of those who attended the flower, fruit and vegetable show held in the City Hall, Guelph, on August 19th and 20th, under the auspices of the Guelph Horticultural Society and the South Wellington Sweet Pea Society. This was the first attempt for upwards of thirty years to hold a summer show in Guelph, and the results must have been most gratifying to the officers and executive of the societies. Both the halls, which were tastefully decorated for the occasion, were required to hold the many exhibits in classes covering almost every variety of flowers (annual and perennial).

splendid displays of plants including many rare specimens exhibited and loaned by prominent citizens, and the exhibits of fruit and vegetables.

The fine display of plants in pots, the beautiful collection of gladioli, roses, petunias and other flowers, as well as the fine collection of vegetables and fruit by the Ontario Agricultural College, were perhaps the most striking exhibit, while the display from the John Connon Company of Hamilton, of gladioli and perennial phlox, and the exhibits by Messrs. Gilchrist, Dunbar, McPhee, Marriott, and "The Rosery," local florists, were also worthy of special mention.

The competition for the handsome Burpee Cup and the valuable Schofield Cup, the former offered by Messrs. W. A. Burpee & Co., of Philadelphia, and the latter by H. C. Schofield, Esq., M.P.P., both given for the best and most artistic displays of sweet peas, was very keen. The magnificent display of J. A. Hewitt was awarded the former, and the fine exhibit by William McSkimming, the later.

Amongst the most prominent prize winners were: Samuel Sunley, McLennan & Billings, Miss L. Yeates, T. Holliday, Fred Webb, William Wilson, George Leadlay, Peter Gould, John Malcolm of Fergus, Geo. Ruber, A. Duffield. The silver medal kindly donated by the Toronto Horticultural Society for the best collection of herbaceous perennials, was won by Miss L. Yeates. A unique exhibit was the fine collection of peaches shown by Miss D. C. Kennedy; these were grown in Guelph from a seed planted five years ago.

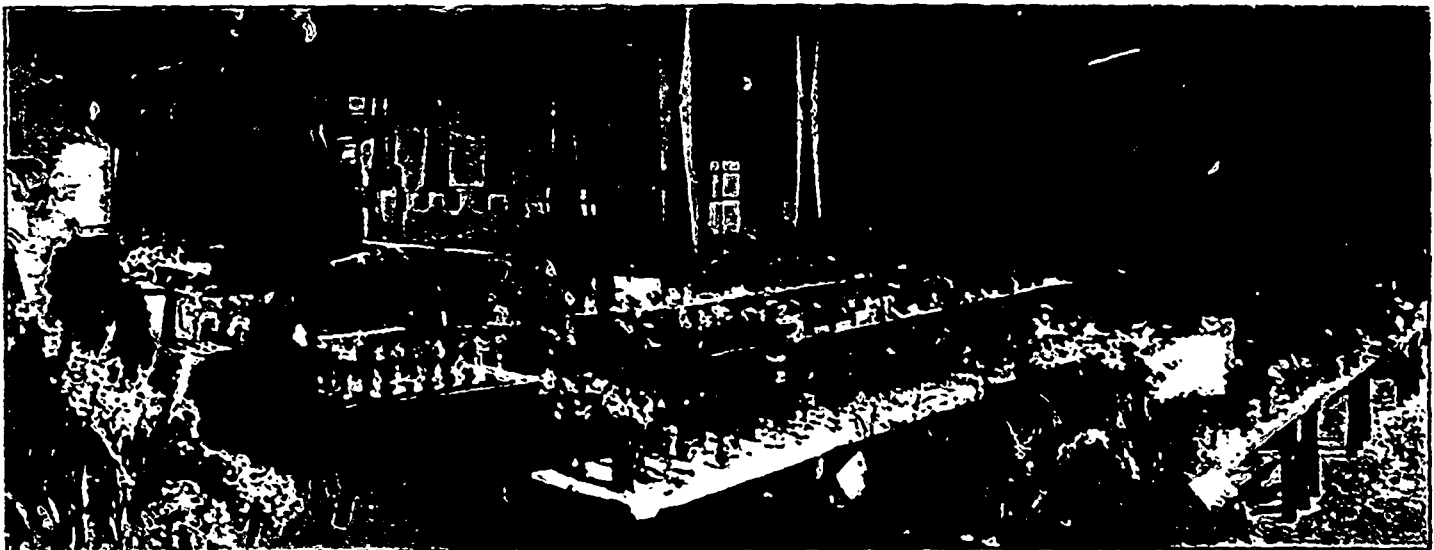
The junior members of the horticultural society and school children also contributed splendidly, covering numerous entries of flowers and vegetables.

Music was supplied continually by Cronk's orchestra, and the show was attended by over two thousand people.

London

During the past season much interest has been taken in the work of the London Horticultural Society. Premiums of bulbs and flowers were offered, which had considerable influence in increasing the membership.

During the latter week of August a successful flower show was held. Flowers of every description were shown in profusion, including some beautiful gladioli, asters, and roses.



A View of Some of the Exhibits at the Recent Exhibition held by the Guelph Horticultural Society.—(See article on this page)

Fruit at the Canadian National

This was expansion year at the Canadian National, and the fruit exhibit was in harmony therewith. As a whole, the display was the largest ever staged at this exhibition. The size and color was the best ever seen for the time of year. In the matter of accommodation there is still room for improvement. The displays by seed firms were interesting and reliable, but they should not be so placed as to break up the fruit exhibits, as was the case this year. Then, too, the exhibits of railway and steamship companies should be confined to their proper places and the horticultural building utilized for horticultural exhibits only.

A change that would add to the attractiveness of the showing would be the giving of more prizes for baskets and otherwise displayed fruits. Then, too, it might be wise to drop some of the late varieties and enlarge the prize list for earlier ones. The late varieties had little or no color. A feature that would add greatly to the educational value of the exhibits and also to the general interest would be to have the name of the variety and exhibitor more plainly shown after the fruit had been judged.

Pears were of good color and quality. The plate exhibits were remarkably smooth and in most cases uniform. The showing was well above the average of past years. In baskets for display there was keen competition. One of the judges remarked that he saw some Bartlett's that were as good as any he ever saw come from California. A few exhibitors made a mistake in selecting a poor color of covering for the baskets.

Plums were the best ever shown. The number of entries was large and the competition close. Peaches were of good size and extra fine color. It was evident that they caught the eye of the visitor.

Grapes were well up to the high standard set in other years.

APPLES

The display of apples was easily the best ever shown. The color was fifteen to twenty per cent. ahead of last year and the quantity almost double. The boxed fruit might easily be increased if the prize list was extended, only the standard varieties now being represented. In the arrangement of the competitive box exhibits there was room for improvement. Each exhibitor had to place his own entries, so no general scheme of arrangement was carried out. It would be well to stipulate that fruit in boxes for export should be wrapped. There was some splendid fruit shown in the box entries, one box of Duchess being particularly noticeable.

The plate and cone exhibits were exceptionally well colored. As Prof. Crow, of the O.A.C., who judged the entries, remarked: "The color is extra fine and the fruit is slightly cleaner than last year. Exhibitors, however, should have learned by this time that wormy fruit is not wanted. I didn't give any prizes to wormy fruit. A number, too, are making a mistake in selecting too large specimens of the dessert varieties. Typical apples of the variety should be chosen. In the cooking sorts, size with quality is desirable. A number of specimens were minus the stems." A pleasing feature is that more exhibitors are showing and the prize money is being more widely distributed.

COMMERCIAL PACKAGES

Mr. Harry Dawson, one of the judges on Commercial Packages, stated that never before had the fruit shown at the Exhibition been as well packed or as uniform in

quality as this year. Not only apples, but plums, grapes and pears were all much better packed than in former years.

"We will soon," said Mr. Dawson, "know how to pack as well as they do in the west, and be able to hold our own even with California. An encouraging feature of the commercial packages," continued Mr. Dawson, "is the fact that there is an unusually large number of entries in all classes. Among the boxes of apples is one of Duchess, which is the best packed box of apples I have ever seen, either at this show or at the Ontario Horticultural Exhibition. It excels in uniformity of color, uniform size of the apples and in the firmness of the pack. As regards the general exhibits, they also show more uniformity than usual, there not being so many off-packs, as most of the exhibitors have followed the 2-3 pack, the next most popular pack being the 3-4."

ONTARIO'S EXHIBIT

In the Government Building, the Fruit Branch of the Ontario Department of Agriculture had a fine display. All the fruit was exceedingly well colored, and as soon as the more perishable varieties showed signs of decay they were replaced by a fresh lot so that the showing was always fresh and attractive. An interesting feature was a box of standard dimensions, all made of glass, containing some beautiful Chenango strawberry apples. The glass enabled the spectators to view the style of pack to the bottom of the box. The peaches and plums were exceptionally fine.

Welland and Lambton counties had fine exhibits of fruits. The peaches were possibly the best at the fair. A well-loaded branch of a Welland county plum tree gave an idea of the productiveness of that

district. Lambton county showed some extra fine boxed apples. The exhibit was tastefully arranged, a mirror at the back giving it the appearance of double its actual size. The British Columbia exhibit gave a splendid idea of the fruit growing possibilities of that province. The fruit was mostly shown as plate specimens. The boxes used were the North-western standard size.

SOME OF THE PRIZE WINNERS

The gold medal for the best display of fruit went to W. J. Furniger, St. Catharines, who also got first on collections of 10 varieties pears, 15 varieties plums, 5 varieties plums (green or yellow), and 5 varieties plums (red or blue). First on fancy package, display basket, and flat-covered basket of plums, display basket of grapes and flat-covered basket of peaches were also won by Mr. Furniger.

J. H. Corning, Waterdown, was prominent in the apple classes, winning first on export Duchess, Blenheim, Wealthy, and Spy, and on plate exhibits of Duchess, Fameuse, Gavenstein, Hubbardson, Wealthy, and Spitzenburg; also first on 20, 10, and 5 varieties cooking apples and for pyramids of Blenheim, Duchess, King, R. I. Greening, St. Lawrence, and Wealthy.

Other prominent exhibitors in the apple class were W. E. Weese, Carrying Place; J. Guthrie, Dixie; R. Williamson, Carrying Place; and T. Bunting, St. Catharines.

A. E. Freel, Niagara-on-the-Lake, was first in all peach collections. In grapes, similar honors were won by L. Haynes, St. Catharines. Other prize winners were: W. D. Woodruff, St. Catharines; A. W. Austin, Port Dalhousie; F. G. Stewart, Homer; and R. Cameron. The prize money in the plum classes was well divided.

Fighting San Jose Scale in Ontario

Jas. A. Neilson, Port Dover, Ont.

During the past spring the Fruit Branch of the Department of Agriculture engaged the writer to undertake the work of investigating the prevalence of the San Jose Scale in the orchards of Ontario. As a result of the work, which began April 21, we have found the San Jose Scale to be rather widespread, especially in the southwestern part of the province. The pest has been found in the following counties: Oxford, Middlesex, Lambton, Essex, Kent, Elgin, Norfolk, Welland, Lincoln, Wentworth, Halton, and Peel.

The San Jose Scale is one of the worst pests that the fruit grower has to fight, but fortunately it can be controlled. From observation of a number of orchards, previously infested, we have found that this very destructive pest can be completely overcome by spraying the affected trees with the lime-sulphur mixture. The spray should be applied on the dormant wood, before the buds break open in the spring or after the leaves drop off in the autumn. If the trees are badly affected the rough bark should be scraped off and the trees rather severely pruned. It is absolutely necessary to be very thorough in the spraying of the trees. Every branch, and even the smallest twigs should be covered with the spray mixture.

This is rendered necessary by the marvellous powers of reproduction which the San Jose Scale possesses. One female in the course of a season is capable of bringing forth offspring which will multiply to one million. From this fact we can see the necessity of being thorough in the

spraying, as even the smallest twig left untouched will reinfest the whole tree.

CONCERTED ACTION NECESSARY

To secure the best results in an infested area, concerted action is necessary on the part of the fruit growers. Unless this is secured, the efforts of those who do spray are to a certain extent rendered ineffective. From interviews with a large number of fruit growers, we have found that compulsory spraying would be welcomed by many, especially in sections where the San Jose Scale is prevalent. Competent inspectors should be appointed to see that the negligent ones do their duty.

Fruit growers should keep a sharp lookout for this pest, as it is much easier to control in the initial stage than when it has become established. The San Jose Scale is spread in the first place chiefly on nursery stock; therefore growers should deal only with reliable nurserymen. Birds and insects also carry it from tree to tree and from orchard to orchard.

The Department of Agriculture will furnish upon request a spraying calendar, giving full and complete directions for spraying for the San Jose Scale and all other fruit pests.

Peaches, plums and other soft fruits are not susceptible to being preserved for any length of time in cold storage. The best that can be done is to keep them in a firm condition for transportation and marketing at reasonable distances.—J. A. Ruddick, Dairy Cold Storage Commissioner.

Queens of Moore's Strain of Italians

PRODUCE WORKERS

That fill the supers quick,
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, \$1; six, \$5; 12, \$9.00. Select untested, \$1.25; six, \$6.00; 12, \$11.00. Safe arrival and satisfaction guaranteed. Circular free.

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Apple Evaporating Machinery

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OUR LEADERS

Ontario Power Sprayer

Model 2-B, and the

Improved Pacific Appl. Parer

Write for catalogue on Spraying and Evaporating

A High-Grade Nursery Exhibit

Among the Nursery Exhibits at the Canadian National Exhibition, that of Ross & Sons appeared to good advantage.

The Toronto Nurseries is one of the oldest and best known nursery firms and landscape architects in Canada to-day, having been established in 1845.

The foreground of the display consisted of a plot of grass laid out attractively with tub specimens of evergreens of the best varieties. In the background was a tent which was used as an office. This also was nicely decorated with landscape plans and illustrations of nursery stock.

The Evergreen stock consisted of splendid specimens of Juniper Virginiana, Japanese Juniper, Irish Yews, Theodore Cedars, Veitch's Spruce, Abies Polita, Pyramidal Cedars, Colorado Blue Spruce, and Retinospora.

In addition to the exhibit of evergreens, a splendid collection of standard two-year-old fruit trees was offered for inspection.

Ross & Sons, in addition to their nursery business, make a speciality of landscape department work, in which they have been engaged for many years. Plans and estimates are furnished on application.

They are also the Canadian Representatives of Hugh Dickson & Co., of Ireland, the famous Irish rose growers. They recommend the fall as the very best time for planting roses, and to meet the demand they have prepared a very fine stock of high-grade plants. A large supply of all kinds of nursery stock is on hand for Fall and Spring delivery, and orders will be promptly attended to.

Visitors are always accorded a cordial welcome at the nurseries—1167 Queen St. East, Toronto.

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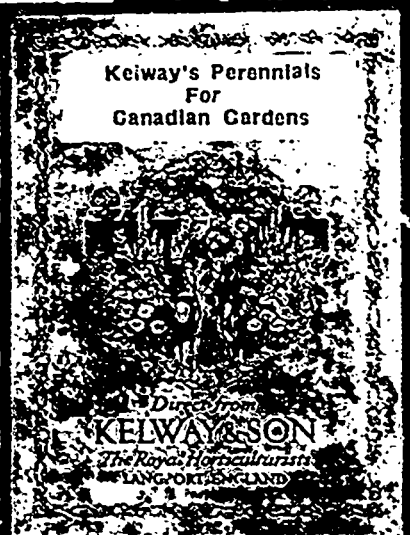
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Choice named collections (specially picked to suit Canadian conditions) of Pæonies from \$3.75 to \$17.00; Delphiniums from \$2.25 to \$13.50; Gaillardias from \$1.50 to \$4.50; Pyrethrums, \$1.50, \$3.00 and \$5.10 a dozen.

Full particulars and illustrations are given in the Kelway Manual of Horticulture mailed free on receipt of 60 cents, by

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Vegetable Displays at C. N. E.

The showing of vegetables at the Canadian National this year was well up to the standard set in past years. Owing to the presence of a number of commercial exhibits in the horticultural building, the vegetables were relegated to a tent. Under such circumstances it was not possible to show the entries to the best advantage.

The arrangement of the exhibits is always an important point. In this respect there was little fault to find, the entries not being mixed as to class. While the quality of the entire showing was good, some of the roots, particularly turnips and mangels, showed some roughness. The season, however, has in a large measure been responsible, as such dry weather is not conducive to the best development of the root crop. The display of squash was most creditable, the specimens being notably well formed.

Among the chief prize-winners were W. Marshall, Falkenburg; R. Plunkett & Son and C. Plunkett, Weston; J. B. Guthrie, Dixie; J. P. Helliwell, Brown Bros., Dundridge and F. Reeves, all of Humber Bay; W. D. Woodruff, W. J. Furninger, St. Catharines; W. Clark, North Toronto and Ed. Brown, Weywood Park.

ASSOCIATION EXHIBIT

In the Government building the Ontario Vegetable Growers' Association showed a fine collection of the prize-winning entries in the field crop competitions conducted this season. The specimens were smooth and well formed. John Harris & Son, Belleville, were first on celery; J. A. Humphreys, Stratford, won first on tomatoes, and Chas. Aymer, Humber Bay, similar honors on onions.

A fine display of all farm crops gave an idea of what is being done along agricultural lines at the public institutions of Ontario. A group of exhibits that attracted much attention was the showing of vegetables and grains made by the districts of Sudbury, Algoma, Rainy River, Temiskaming and Kenora. As an example of the agricultural possibilities of these districts the showing was an eye-opener to many. Kent county, Ont., had a revolving pyramid of vegetables and grains, showing the producing possibilities of the region.

Rainy River District

The Rainy River Exhibit at the Toronto Exhibition was a revelation to many. It consisted of specimens of bush fruits, grains and vegetables. Some of the finest agricultural products on the grounds were shown here.

Rainy River excels in the quality of potatoes which mature two or three weeks earlier than those grown farther south. They are absolutely free from all fungous diseases. The Rainy River Potato Growers' Association is prepared to ship any quantity of these potatoes, all shipments being carefully graded, stenciled and boxed. For further information may be secured from Mr. A. G. Crawford, Manager of the association, Emo, Ontario.

Ginseng Growers' Meet

Some important business was transacted at the annual convention of Ontario ginseng growers, which was held at the T. Hall, 1077 Queen street, Toronto, on September 3. The number of ginseng growers in Ontario is not large but the lack of numbers was made up by an abundance of enthusiasm. The convention was interesting and helpful.

After the reports of the officer had been read the main business centered on the report of the executive committee. The

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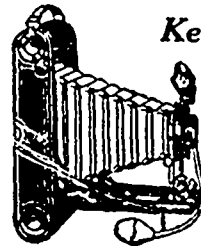
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8 Beautiful House Plants AND 100 Choice Winter Flowering Bulbs All for \$5.00

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- 1 Choice Ostrich Plume Fern.
- 1 Fine Boston Fern.
- 1 Splendid Chinese Primrose.
- 1 Beautiful Cyclamen.
- 1 Rare Begonia.
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- 1 Large Kentia Palm.

Our regular selling price of these plants will average 50c each, and some of them we retail at One Dollar each.

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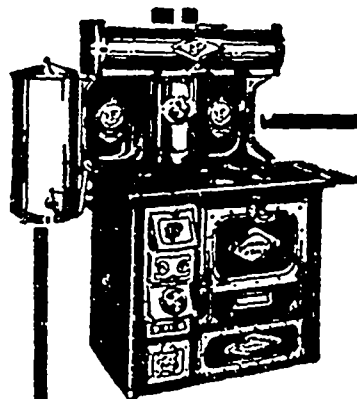
- 12 Early Narcissus Paper White.
- 12 Early Roman Hyacinths.
- 12 Preesia Mammoth size.
- (The above are for early Xmas bloom).
- 12 Dutch Hyacinths (all colors).
- 12 Choice Single Tulips (all colors).
- 12 Superb Double Tulips (all colors).
- 12 Double Daffodils, a choice assortment.
- 12 Single Daffodils, a choice assortment.
- 12 Chinese Sacred Lillies.
- 12 Bermuda Easter Lillies.

Cultural directions for these Plants and Bulbs are found in our Catalog, which we mail free.

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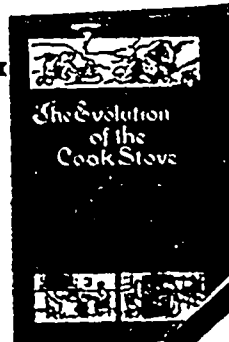
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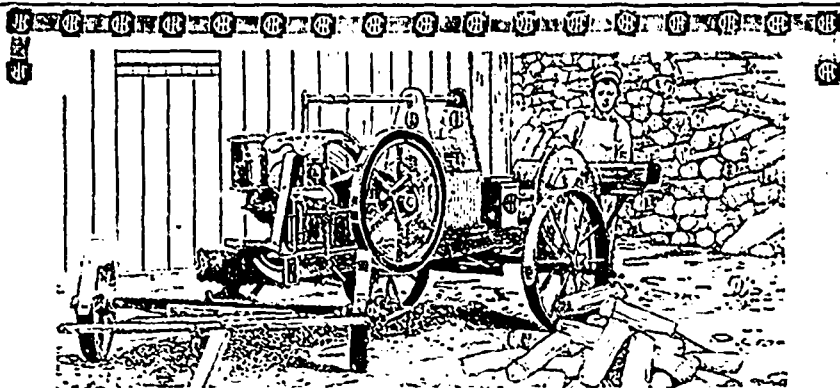
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Buy a Mechanical Drudge

MANY a winter day of back-breaking labor has the average farmer spent stooping over the old buck saw, z-r-r-p, z-r-r-ping its way through tough wood for the kitchen stove supply. But the wise ones don't do it now. They have a handy engine to run the saw, while they rest.

That engine is about the busiest and most convenient machine the wise man has on his farm. It pumps water for him, runs the separator, washing machine, feed grinder, and grindstone. Often it runs a hay press, small thresher, or a repair shop. The year round it drudges for him. And the wisest man has an

I H C Oil and Gas Engine

because it does most for him at least cost. Its simplicity renders it almost trouble-proof. Its construction makes it easy to start and to operate, and it is most economical in fuel consumption. The best material obtainable goes into its making.

I H C engines are made in all styles—vertical and horizontal, portable, stationary and skidded, air and water cooled. Pumping, sawing and spraying outfits. Sizes from 1 to 50-horse power, to operate on gas, gasoline, naphtha, distillate, kerosene, and alcohol. Oil tractors, 6-12 to 30-60-horse power, for plowing, threshing, etc.

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FLOWER POTS

Hanging Baskets, Ferns Pans, Etc.



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

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

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Send your consignments of APPLES to the Home Country to

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COVENT GARDEN

LONDON, ENGLAND

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

Correspondence invited



The Modern Shine!

Easier to Use
Better for the Shoes

the committee had been instructed to investigate the possibility of marketing the product by the association direct to the dealers in China. The committee reported that the scheme was quite possible. They got into communication with the Canadian Commissioner in China who was investigating the condition of the market there as to prices, grades and firms handling product. At present the market is somewhat demoralized because dealers can get advances from bankers.

The erection of a central drying plant, where the roots shipped by the members could be properly dried and prepared for market, was also decided upon. The selection of the location and other arrangements were left in the hands of the executive committee. A canvas of the members had been previously made by mail so a decision was soon arrived at.

An application had been made to the Ontario Department of Agriculture for a grant to enable the association to better study the habits of the plant. Hon. Mr. Duff had promised consideration.

The methods of growing the plant, amount of shading, mulching, and spraying for blight were among the subjects discussed.

The officers for the coming year are: President, J. A. Austin, Toronto; 1st vice-president, D. Menzies, Milton, Ont.; 2nd vice-president, W. J. Robertson, Lanark, Ont.; Sec.-treas., P. Wilson, 91 Evelyn Ave, Toronto; members of Executive, P. Menzies, Milton, Ont., and J. Watson, Newmarket, Ont.

Government Exhibit

An exhibit that attracted attention at the recent fruit and flower show at St. Catharines was that of the Dominion Government. This was about one-fifth of the exhibit which will be shown at San Francisco in 1915. In all, four hundred and fifty glass jars will be shown. The fruit is all being collected in the Niagara district by Mr. Desbarres, who has entire charge. A large proportion of it is shown on the branch, giving an idea of the prolificness of Canadian fruit trees.

The jars used are both of the cylindrical and globe-shaped type, containing from one and a half to nine gallons. The composition of the preserving material is not made public, but except in the case of vegetables no alcohol is used. The process is an interesting one. The fruit goes through three solutions. The first discolors the fruit, the second bleaches it and the third brings back the original color. A lot of this preserved fruit is being shown in the Old Land to illustrate that Canada is not "Our Lady of the Snows." During the past season a large exhibit has been staged in Belgium.

Mr. Desbarres remarked that the fruit compares favorably with the California product, and in flavor would beat it, especially peaches. An interesting novelty was a second crop of raspberries, growing on the new wood, which Mr. Desbarres had found in a nearby garden. One jar contained specimen of tobacco plant grown a few miles from St. Catharines. It was grown from Havana seed, and was suitable for cigar wrappers.

Niagara District

The season in the Niagara district in some respects a rather unusual one. In the first place, peaches and plums had a heavy crop, the quality being the best in years. While prices have not been high (to the grower at least), the gross returns are remunerative because of the large

TO THE TRADE

KELWAY'S

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GREENHOUSES

We Design and Manufacture
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We Use Only The Best
All Heart Red Gulf Cypress Woodwork
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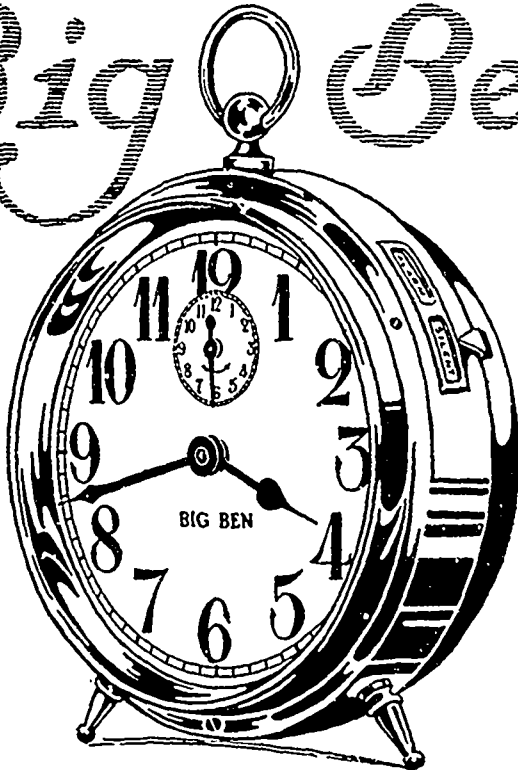
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Capital Authorized - \$10,000,000
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D. R. WILKIE, President and General Manager

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Big Ben



Presenting two ways to get up early

Big Ben will get you up on the installment plan, a little at a time, by ringing every other half minute for ten minutes, so you'll wake up gradually. Or he'll do the whole job all at once, with one long, straight, five-minute ring.

You can set him to do it as you choose, and shut him off short in the middle of his call either way.

That makes him two good clocks in one, to suit everybody's taste in early rising.

He plays no pranks. He won't go off before it's time and rob you of your full measure of sleep. He won't go off behind time and rob you of your work time. It's Big Ben's business to run on time, to ring on time and to stay on time.

Big Ben attends to his own business and helps you attend to yours by getting you and the farm hands out early.

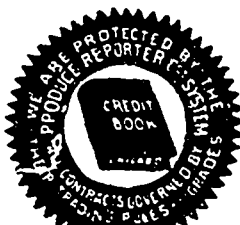
Then he sticks around the house and keeps time all day for the women folks so they can have your meals on time.

There never was a clock that fitted in better with the farm work.


He's triple-nickel plated and so handsome you'll want to keep him in the parlor instead of a bedroom.

Stands seven inches tall from the top of his head to the tips of his toes; has big, easy-winding keys, large hands, and big figures that you can read at a distance on dark mornings, and is built of good implement steel so he'll last for years. He's doing this kind of work in 3,000,000 American homes today.

Twenty thousand jewelers sell him—one in your neighborhood, probably. If yours doesn't, just send a money order for \$3.00 addressed to *Windsor, La Salle, Illinois, U. S. A.* and he'll come to the front door, duty charges prepaid.



Good Prices Always



For Your Fruit and Vegetables

OUR facilities enable us to realize top prices at all times for your fruit, vegetables, or general produce. Aside from our large connection on the Toronto market, we have established branch warehouses with competent men in charge, at **SUDBURY, NORTH BAY, COBALT, COCHRANE AND PORCUPINE**. In time of congestion on the Toronto market we have a ready outlet through these branches. We never have to sacrifice your interests.

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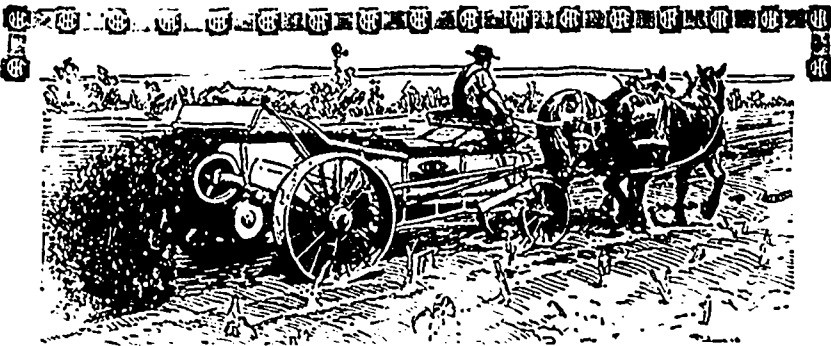
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Branch Warehouses: Sudbury, North Bay, Cobalt, Cochrane and Porcupine

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



Best-Hated of Farm Tasks

ON the spreaderless farm the thought of the great heaps of manure piling up constantly in barn yards, stables, and stalls, is a gloomy one. Those piles mean much disagreeable and hard work. Three times every bit must be handled. It must all be loaded onto high wagons. It must be raked off in piles in the fields. Then every forkful must be shaken apart and spread.

Compare that old-fashioned method with the spreader way. You pitch the manure into the spreader box, only waist high, drive out and—the machine does all the rest.

And, far more important, if you buy an I H C spreader, one ton of manure will go as far as two tons spread by hand, with the same good effect on the soil, and it will all be spread evenly.

I H C Manure Spreaders

Deering and McCormick

are farm necessities. The man who uses one will get the price of it back in increased crops before its newness has worn off.

I H C spreaders are constructed according to plans in which every detail, every feature, is made to count. They are built to do best work under all circumstances, and to stand every strain for years. They are made in all styles and sizes, for small farms and large, low and high machines, frames of braced and trussed steel. Uphill or down, or on the level, the apron drive assures even spreading, and the covering of corners is assured by rear axle differentials. In all styles the rear axle is placed so that it carries near three-fourths of the load. This, with the wide-rimmed wheels with Z-shaped lugs, makes for plenty of tractive power. Winding of the beater is prevented by large diameter and the beater teeth are long, strong and chisel pointed.

A thorough examination of the I H C spreader line, at the store of the local agent who sells them, will interest you. Have him show you all these points and many more. Study the catalogues you can get from him, or, write the

International Harvester Company of Canada, Ltd

EASTERN BRANCH HOUSES

At Hamilton, Ont.; London, Ont.; Montreal, P. Q.;
Ottawa, Ont.; St. John, N. B.; Quebec, P. Q.



crop. In spite of the heavy yield and reasonable prices, the canners are buying but little, one cent a pound being about the maximum figure offered. Heavy stocks are on hand from last year, which accounts for the light buying.

The scarcity of fruit baskets still continues to be the growers' nightmare. A number claim that orders for baskets put in a year ago have not yet been filled. At the same time the cost of baskets has ad-

Can any reader supply us with copies of The Canadian Horticulturist for April, May, June, and July, 1913? If they will send them to us we will be pleased to allow for them what they may be worth.

vanced from 25 per cent. to 50 per cent. above last year's level. In not a few cases fruit is rotting on the trees because of the lack of baskets in which to ship it. This is particularly true of Lombard plums.

THE NEW PRE-COOLING PLANT

An innovation that should prove of great benefit to the growers of this district is the new Government pre-cooling plant, tenders for which have been called for. The building, which will be situated beside the G.T.R. tracks at Grimsby, will be 120 feet by 48 feet. In the basement will be a storage room, a coil room, an experimental room, and a receiving room. On the first floor will be the ice crushing and elevating machinery, two pre-cooling rooms, an air-lock room, a shipping room and office. On the second floor will be two coil rooms and storage for cases. Above the ice house will be five primary tanks, a room for ice and salt, and large storage for salt. The entire plant must be completed by January 15, 1914.

Complaints of long delays in shipments, particularly to the West, are numerous. In some instances the time in transit was so long that fruit arrived at its destination in an almost worthless condition. G. E. McIntosh, Transportation Agent of the O.F.G.A., is collecting concrete evidence that will be placed before the Railway Commission when the whole matter will be carried to that tribunal.

Prince Edward Island

That "The Garden of the Gulf" is no misnomer was proven at the first flower show held under the auspices of the Prince Edward Island Floral Association at Summerside during the last week in August. Prof. Saxbey Blair, of the Kentville Experiment Station, N.S., who with Rev. S. Trivett, Milton, N.S., judged the exhibit, stated that the show compared favorably in cut blooms with any he had attended in Ontario and Quebec.

The show was formally opened by His Honor the Lieutenant-Governor, the Commissioner of Agriculture presiding. The sweet peas shown were an exceptionally fine lot, Prince Edward Island's soil and climate seeming to be peculiarly favorable for this flower. Dahlias and phlox were also displayed extensively. Asters and carnations were not so numerous, as the season has not been favorable for their growth. Roses were a creditable showing for the time of year. Some of the prominent exhibitors were J. H. Wormacot, L. G. Haszard, J. D. Stewart, and James Tait. The committee in charge are to be congratulated on the success attained.



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For Fighting Every Disease of Cultivated Plants

Knapsack, Pack Saddle or Horse Drawn Power Sprayers

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Lovely Old English Flowers

Hardy and True to name

KELWAY & SON

The Royal Horticulturists

Langport, Somerset, England

GINSENG

For the season of 1913 we are offering one-year-old Roots two-year-old Roots, Stratified Seeds and New Seeds at greatly reduced prices. Write for Price List.

I. E. YORK & CO., Waterford, Ont.



McDONALD'S QUALITY BULBS

The finest blooms in Hyacinths, Tulips, Daffodils, etc., are obtained only by planting sound bulbs of good size. Our supply of Dutch Bulbs comes to us from the most reputable growers, consequently represents the cream of the best fields.
Order "McDonald's Quality Bulbs" from the following list.—you'll be delighted with results. Prices include prepayment of postage only where noted, otherwise at purchaser's expense.

HYACINTHS

Strictly 1st size bulbs for pots or glasses in any of the following colors, with names, Red, Rose, White, Blue, Violet, Yellow 10c each. \$1.00 per doz. Postpaid.
Select 2nd size bulbs. Specially fine for pot culture or bedding. Colors as above. 5c each. 50c per doz. Postpaid; or \$3.50 per 100.
Dutch Roman, Miniature or Pan Hyacinths. Excellent for indoor culture. Separate colors, without names, 35c doz. Postpaid; or \$2.00 per 100. With names, 40c doz. Postpaid, or \$2.50 per 100.
White French Roman Hyacinths. If planted early will flower by Christmas. Each bulb produces several spikes of bloom.
Extra Select bulbs—6c each. 55c doz. Postpaid. \$4.00 per 100.
First size bulbs—5c each. 45c doz. Postpaid. \$3.25 per 100.

TULIPS

Guaranteed highest grade bulbs, for bedding and indoor culture. Space permits of our enumerating only a few of the most popular varieties. Our 32-page catalogue describes fully scores of other sorts. It's free for the asking.

SINGLE EARLY TULIPS.

	Doz.	Per 100.	Per 1000.
Artus. Bright Scarlet	30c	\$1.30	\$10.00
Belle Alliance. Rich Crimson			
Scarlet	40c	2.00	18.00
Crimson Brilliant. Rich Scarlet	35c	2.00	15.00
Crimson King. Crimson Scarlet	25c	1.30	10.00
Chrysolara. Deep Golden Yellow	25c	1.30	10.00
Keizer Kroon. Crimson Scarlet with broad Golden margin as per illustration	30c	1.75	14.00
Yellow Prince. Sweet Scented Golden Yellow	75c	1.25	10.00
Cottage Maid. White and Pink	25c	1.30	10.00
La Reine. White Suffused Pink	20c	1.25	8.00
White Hawk. White	5c	3.00	20.00
Proserpine. Carmine, rose large	40c	2.50	24.00
Queen of the Netherlands. Blush Pink	5c	3.00	20.00
Rose Griselina. Bright Pink	30c	1.50	9.00
McDonald's Superb Mixture	30c	1.50	12.00
McDonald's Special Mixture	2c	1.25	10.00
McDonald's Good Mixture	15c	.90	7.50

DOUBLE EARLY TULIPS.

Couronne D'or. Golden Yellow	45c	3.00	20.00
Imperator Rubrorum. Bright Scarlet	40c	2.25	20.00

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La Candeur. White	30c	1.50	12.50
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McDonald's Superb Double Early Mixed	30c	1.75	15.00
McDonald's Choice Double Early Mixed	20c	1.00	8.50

SINGLE MAY FLOWERING TULIPS.

Bouton d'or. Golden Yellow	25c	1.50	12.00
Blushing Bride. Rose pink shaded white	30c	1.75	12.50
Gesneriana Spathulata. Rich Crimson Scarlet	30c	1.50	12.50
Picotee. White, edged pink	30c	1.50	12.50
Fine Mixed	25c	1.50	9.00

DARWIN TULIPS

Clara Butt. Soft Rosy Pink	40c	3.00	
Margaret. Lilac Rose shaded Cream	30c	1.75	
La Candeur. White	35c	2.00	
Feu D'Artifice. Purple Red	35c	2.25	
The Sultan. Glossy Black Maroon	35c	2.00	
Select Mixed Darwins	30c	1.50	

MISCELLANEOUS

	Doz.	Per 100.	Per 1000.
Paper White Narcissus	30c	1.50	12.50
Narcissus Poeticus	15c	.75	7.00
Narcissus Poeticus Ornatus	25c	1.25	10.00
Narcissus Poeticus. King Edward VII.	75c	4.50	
Crocus in colors or mixture	10c	.60	
Snowdrops, Single	15c	1.00	7.00
Snowdrops, Double	25c	1.50	13.00
Iris, Mixed Spanish	20c	1.00	7.00
Iris, Mixed English	30c	1.50	12.50

NARCISSUS OR DAFFODILS

SINGLE TRUMPET VARIETIES.

Emperor. Sulphur-Yellow Perianth. Golden Yellow Trumpet	30c	1.50	12.00
Emperor (Mother Bulbs, extra large)	50c	3.00	22.00
Empress. White Perianth. Golden Yellow Trumpet	35c	2.00	12.50
Golden Spur. Deep Yellow Trumpet and Perianth	45c	2.75	17.50

Choicest Mixed Single Trumpet Varieties	25c	1.25	10.00
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Von Sion. Flowers Golden Yellow	40c	2.25	
Incomparable. Orange and Yellow	25c	1.25	
Alba Plena Odorata. Pure white	30c	1.25	
Double Mixed Narcissus	20c	1.00	9.00

You will find it to your advantage to have a copy of our Autumn Bulb Catalogue.

It is a handsomely illustrated book of 32 pages and gives full information about the best bulbs and the best ways to grow them. Thirty-seven years' experience as seedsmen enables us to offer all that is best in bulbs, seeds and supplies for garden, field and lawn.

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SENECA CAMERA MFG. COMPANY
ROCHESTER, N. Y.

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Enclosed find 4c in stamps for which please send me postpaid the Seneca Hand Book.

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A Unique and Practical Nursery Exhibit

Few of the thousands at the Canadian National Exhibition who passed down the roadway to the Old Machinery Hall, failed to be attracted to and inspect the splendid exhibit of Messrs. Stone & Wellington.

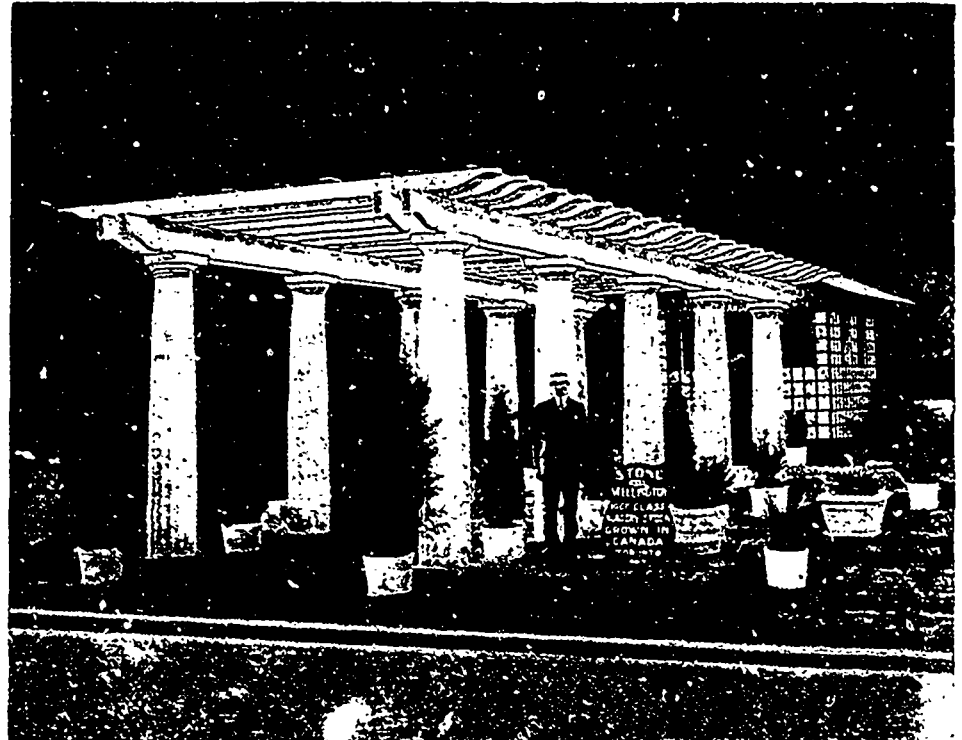
The firm of Stone & Wellington is the pioneer nursery concern of Canada, and is known from Coast to Coast. In past years their exhibit has been most attractive, unique and practical, but this year they certainly surpassed all previous efforts, and for general appearance ranked first among the several nursery concerns represented.

As will be seen by illustration below, it consisted of a beautiful well-built pergola;

The root portion of all was extremely well developed. These trees are grown at the Nurseries at Fonthill, and serve to show the splendid class of stock they are growing for Fall and Spring trade.

The Nurseries are situated at Fonthill, Welland, where the conditions are ideal for the production of the very highest class of nursery stock. It conduces to prolific yet hardy growth. The specimens of two-year-old fruit trees were from six to eight feet in height, with a specially large root system, this ensuring a quick setting when planted in the orchard.

Messrs. Stone & Wellington have for this Fall and next Spring's delivery an



Special No. 25. Sent by Express for \$2.50

A Collection of Six Desirable HOUSE PLANTS

Send us \$2.50 and we will forward by express, to your express office, this very choice collection of House Plants. We select these as the most desirable plants for you to buy, chosen from our large assortment; they are full grown plants, now in their flowering pots, healthy, thrifty and beautiful. Our regular selling price of these plants is \$4.00. To make a large number of sales we give this lot, an exceptional bargain, for \$2.50.

- 1 Choice House Fern, Ostrich Plume.
- 1 Choice House Fern, Bostonensis.
- 1 Splendid Kentia Palm.
- 1 Large Asparagus Fern.
- 1 Xmas Cherry (in fruit).
- 1 Fine Cyclamen.

Cultural directions for these plants will be found in our Catalog, which we mail free with this order.

The Hay, Floral & Seed Co.

SEEDMEN AND FLORISTS

BROCKVILLE - ONT.

form of landscape embellishment which is coming more and more into favor, in the foreground. Before the two front columns were placed two beautiful specimens of Juniper Virginiana or Red Cedar, each nearly six feet in height, and between the pillars stood tub specimens of Arbor Vitae-Pyramidalis. The whole surrounding ground was set out with dwarf Spruce.

At the rear of the pergola was an attractive summer house, and in front of it a well-set sun dial. The pergola was painted white and the quaint summer house in green and white. The combination of the two colors made a most pleasing display.

The whole exhibit was a sample of the high quality work of the Landscape Department of the firm.

The building was used as an office, the walls being decorated with illustrations of the shrubs, trees, etc., sold by the firm, also a number of sample plans for private and public grounds made by their Landscape Designer, who was in charge of the exhibit, and who was prepared to offer suggestions and answer all questions relative to that work.

A feature which attracted equal attention from both farmers and fruit growers, was their display of fruit tree stock. It consisted of samples of their celebrated two-year-old standard grown stock, such as apples, peaches, pears, plums and cherries.

immense quantity of fruit trees such as shown at the Exhibition.

The readers of The Canadian Horticulturist who are interested in Landscape Architecture or in high-class nursery stock are cordially invited to call at the head office of the firm at 49 Wellington Street East, Toronto, or at the Nurseries at Fonthill, Welland Co.

St. Catharines Exhibition

The Fruit and Flower Show held by the St. Catharines Horticultural Society on September 10 and 11 was easily the best in the history of the organization. The fruit growers are taking a keen interest in the workings of the Society, and were in evidence with a grand display of fruit. Special attention was given to the children, a fine display of asters being made by them from seed distributed by the society. On both days the attendance was large. Hon. Martin Burrell, Minister of Agriculture, formally opened the show.

Apples were displayed almost entirely as plate exhibits, only five boxes, each of a separate variety, being shown. On the whole the plate exhibits were good. A few, however, showed lack of knowledge on the part of the exhibitor as to what constitutes a first-class plate exhibit. The apples were not uniform in size or shape.

and some showed blemishes. Decorating the apple tables were gladioli supplied by Gilchrist, of Toronto.

Pears were a fine lot. The specimens were smooth and well formed. The basket displays were a grand lot.

Peaches were simply grand. The quality could not possibly be excelled. The showing was one of the finest ever seen in this county.

The plums were on a par with the peaches. The season has been especially propitious for the ripening of the fruit.

Grapes were hardly ahead of other years. The showing was good nevertheless. Dr. Merritt won all the prizes for grapes grown under glass. W. Furninger was a heavy winner in all the classes. C. A. Griggs took the lion's share of the peach prizes. Some of the other winners were: G. A. Robertson, W. H. Bunting, Dr. Miller, W. R. Sheppard, and J. A. Wood.

In the preserved fruits the ladies did themselves credit. The jellies were hardly as good a display.

An interesting exhibit was the collection of preserved fruits which Mr. Desbarde is collecting to represent Canada at San Francisco in 1915. Single fruits and fruit on the branch are placed in preservatives in variously shaped glass jars. As yet, only the early fruits have been prepared

FLOWERS

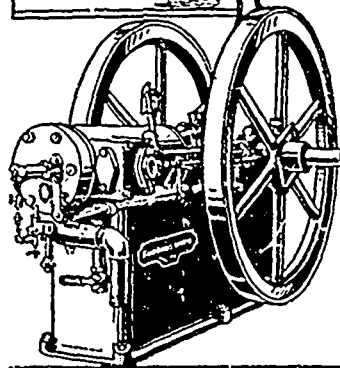
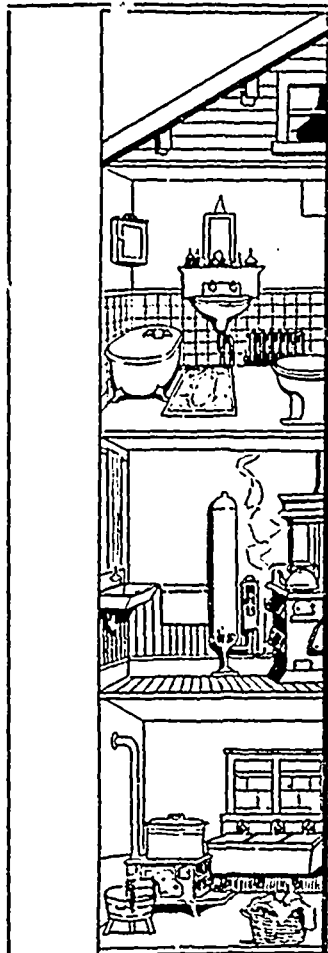
The display of flowers was fine, both in the professional and amateur classes. Two car loads of foliage plants were contributed by Mr. Moore, of Victoria Park, Niagara Falls. Some notable specimens were: Monkey's Purcell, a crape myrtle from India, a navel orange tree, two century cactus, and some fine sago palms. Some splendid Gladioli were shown in the competition for the special prize donated by Mr. Childs of New York. A very nice collection of plants was that shown by Major Leonard. The children of Alexander School had a splendid display of vegetables and flowers. Dr. Merritt won the larger proportion of the prizes in the foliage plant classes. R. L. Dunn exhibited a splendid collection of plants, valued at \$500.

A special class put on for the children was the decorating of doll's carriages and table decorations. The youngsters showed considerable originality. The ladies turned out some good work in the dinner table decorations.

An interesting feature of the evening sessions was a flower drill by a number of school girls. The regimental band rendered some fine selections.

Canada's Land and Apple Show

Every effort is being put forth to make Canada's first Land and Apple Show, to be held in Winnipeg October 10 to 18, one of truly national character. Visitors will have an opportunity to view the products of all agricultural districts. Among the features there will be an "Ontario Day," a "British Columbia Day," a "Maritime Province Day," a "Prairie Province Day," etc. On these days it is intended to give away to visitors cartoons in the form of some product of the land. As these cartoons will be in the nature of an advertisement, the management expect the cartoon souvenir to be supplied by those directly benefited. This show will afford an excellent opportunity for those of the various parts of the country to see what others are producing. The prairie provinces are turning an ever-increasing market for Canadian fruit. Now is the time to show the Western consumer what our country's fruit districts have to offer.



Backed by a guarantee

"We could have purchased another make of engine for less money, but feel now that we were right in getting an engine that would have someone to stand behind its working qualities."
—S. G. D., Hendry Limited, Liverpool, N.S.

Fairbanks-Morse Farm Engines

are guaranteed to be made of the best material, carefully assembled, to be in perfect running order when they leave our works, and to have been carefully tested, with full rated power developed.

A Fairbanks-Morse was the first independent self-contained farm engine made. In the past 20 years more than 140,000 have been sold throughout the world, and today more than 90% of these are still giving thoroughly satisfactory service.

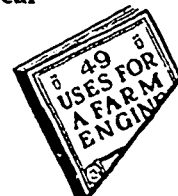
Made in any size, 1 to 200 h.p., vertical or horizontal, portable or stationary. Equipped with Bosch magnetos.

Will run effectively on gasoline, kerosene or other cheap fuel.

Send for our booklet, "49 Uses for a Farm Engine." It is full of valuable information for the farmer and is free. Fill in the coupon and mail now.

**The Canadian Fairbanks-Morse Co., Limited
Montreal**

6 h.p. Horizontal Quick Start Kerosene engine. Will furnish you with running water in the house, milk-house, barn and stock pens.



Please send me your free book

Name

Address

17

Watch for our Big Special Christmas Number, Out Dec. 1st

UNSURPASSED COLD STORAGE

—FOR—

APPLES IN BARRELS OR BOXES

Fruit unloaded direct from cars shipped via any railroad. Handled exactly the same as our own supply. Rates Reasonable.

FRUIT DEPARTMENT

THE WILLIAM DAVIES CO. LTD.

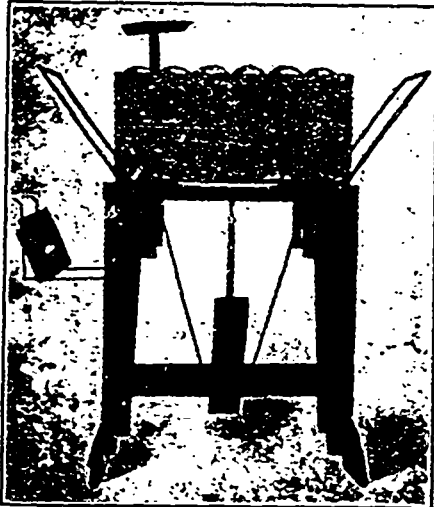
Toronto

R. INNES, B.S.A., Manager

Ontario

Quick and Easy

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



Pat. No. 104,535

If you pack apples in boxes, this machine will be a great convenience to you and will save you time and money. Write for price list.

J. J. ROBLIN & SON
Manufacturers Brighton, Ontario

Cold Storage Fruit Warehouse

Finest Apple Rooms in the Dominion for Export and Local Trade
Special Rooms for All Kinds of Perishable Goods

The Canada Cold Storage Co.
Limited
55 WILLIAM ST., MONTREAL

A Greenhouse Exhibit



One of the most interesting of the horticultural exhibits at the Exhibition was that of The Lord & Burnham Co., Ltd., of Canada, with a complete and full sized curved eave greenhouse, 18 feet by 25 feet, with a service building 14 feet by 20 feet attached to the rear. This greenhouse represented their standard greenhouse construction, description of which follows:

The superstructure rests on an eight-inch concrete wall, which extends about 2 feet 6 inches above level of the house. This wall is capped with a combination cast iron sill and gutter. The gutter has a large part of its surface exposed to the inside temperature of the house, and thus readily frees itself from snow and ice.

Springing from the sill are the steel rafters, placed 8 feet 4 inches apart. Three lines of angle steel purlins on each side of the roof equally placed between the rafters secure a rigid frame and firm support for the bars and glass in the roof. The steel framework is so designed that none of the metal is exposed to the outside atmosphere, thus ensuring freedom from damage by the continual expansion and contraction of the metal, from sudden changes in temperature.

All wood used throughout is clear air-dried Gulf Cypress.

All members in the construction are secured in position with bolts or screws, which practically makes a portable structure. A glance at the illustration will show you that the eaves are curved. This feature adds a very graceful and attractive appearance to the greenhouse, and also ensures a roof free from snow, as there is no gutter or other member at this point.

Two lines of ventilating sash are placed at the roof, and are operated with Lord & Burnham Company's patented ventilating machinery, which furnishes ample ventilation under all conditions.

The plant beds are constructed throughout of cast iron, which makes them strong and practically indestructible.

The glass used in glazing is 16 inches wide, of good quality.

The Lord & Burnham Co. is an old and well-established firm, and are to-day the largest builders of greenhouses in the world.

The Lord & Burnham Co., Limited, of Canada, has lately been organized to manufacture and erect greenhouses and handle greenhouse supplies in Canada.

For information, communicate with the Lord & Burnham Co., Ltd., of Canada, 1210 Queen Street East, Toronto, Ont.

Plant Now TULIPS For Next Spring's Flowering

There is nothing to equal a bed or border of Tulips in bloom in the Spring. The colors are exquisite; they are hardy and inexpensive, besides lasting three or four years. Bulbs must be planted in October or early in November. We offer—prices delivered.

	Doz.	100	1,000
Tulips, Single, named, 6 colors	30c	\$1.50	\$12.00
Tulips, Single, choice mixed, all colors	25c	\$1.25	\$10.00
Tulips, Single, good mixed, all colors	20c	\$1.00	\$8.00
Tulips, Double, named, 6 colors	35c	\$2.10	\$17.50
Tulips, Double, choice mixed, all colors	30c	\$1.50	\$12.50
Tulips, Double, good mixed, all colors	25c	\$1.25	\$10.00
Tulips, Parrot, mixed, all colors, late	25c	\$1.25	\$10.00
Tulips, Darwin, mixed, all colors, late	35c	\$2.00	\$17.50
Tulips, Darwin, named sorts, 6 colors	50c	\$3.00	\$27.50

Also a full assortment of Bulbs for Winter Blooming in the house, and Spring Blooming in the garden, such as Crocus, Freesia, Hyacinth, Lily, Narcissus, Snow-drop, Scilla, etc. Also Plants, Seeds of all kinds, and Poultry Supplies.

Ask for our 28-page Illustrated Fall Catalogue. FREE.

JOHN A. BRUCE & CO., LIMITED Seed Merchants **HAMILTON, ONT.** Established 1870





Steele, Briggs' Bulbs FOR FALL PLANTING

For winter blooming in the house, or for early spring flowering in the garden. These Bulbs must be planted this autumn, Hyacinths, Tulips, Crocus, Narcissus, etc., are the most charming and attractive spring flowers.

We have a complete list of these varieties to offer. Send to-day for our Fall Catalog. It's Free for the asking.

STEELE, BRIGGS SEED CO., Limited
 TORONTO WINNIPEG HAMILTON

Simmers' Bulbs For Immediate Planting

WE WANT every reader of The Canadian Horticulturist to have a copy of our AUTUMN CATALOGUE, in which is offered the most complete and comprehensive list of bulbs to be found in Canada. It's free for the asking. To keep up-to-date floriculturally your name should be on our mailing list, and our various Catalogues will be sent as issued.

BULBS. — Thousands of people overlook the planting of Spring Flowering Bulbs in the Fall, and have many regrets when they see them blooming in the gardens of their neighbors in the spring. Send for our Catalogue now, make your selection and plant your Bulbs out before hard frost comes, or selection of sorts may be left to us.

HARDY PERENNIAL PLANTS. — No better time to set these out than now. They quickly take hold, and invariably make finer and stronger plants than when planting is done in the Spring.

J. A. SIMMERS
 LIMITED
 TORONTO, ONTARIO
 ESTABLISHED 1856.

A Highly-Improved Grimsby Fruit Farm

We have been instructed by the owner to dispose of his fruit farm containing 12½ acres of fine sandy loam adjoining the town limits of Grimsby. This is one of the finest properties in the fruit belt, every foot of which is planted in bearing fruit consisting of 950 peaches, 25 pears, 250 plums, 400 cherries, 1,000 currants, three acres of raspberries, 1,000 strawberries, and over one acre of grapes; also a few each of apples, apricots and quinces. The buildings consist of fine eight roomed frame residence in good condition and with many conveniences, also barn, fruit house, poultry house, preserving house, etc. A splendid property ideally located and practically in the town of Grimsby, close to schools, churches, post office, canning factories and steam and trolley lines. The annual revenue averages \$5,000. Stock and tools in first class condition also for sale at valuation. Price to effect quick sale, \$15,000.00. Terms arranged. For further particulars, write

MELVIN GAYMAN & CO.
 REAL ESTATE
 Insurance and Financial Brokers
 5 QUEEN ST. - ST. CATHARINES, ONT.

Carter's Seeds

Among the thousands of people who passed through the west wing of the Horticultural Building, few failed to notice the splendid exhibit of Carter's Seeds, whose Canadian branch is at 33 King Street East, Toronto.

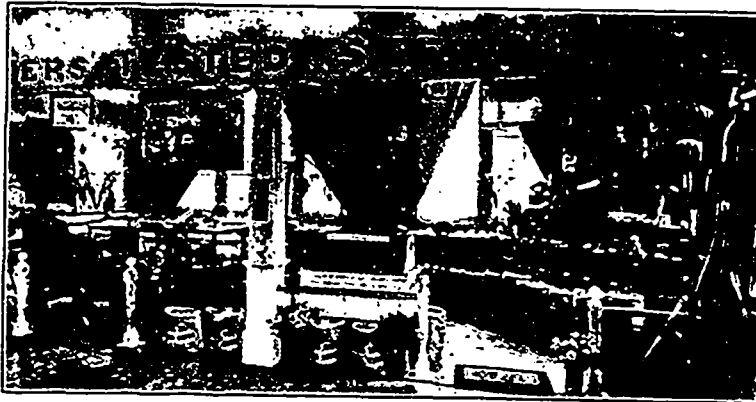
As will be noticed from the photograph above, it was in an especially attractive and catchy booth, finished in white and gold.

Some people, largely from prejudice, declare that English seeds will not grow well in Canada. That this is certainly a fallacy, was clearly shown by the splendid display of vegetables grown from Carter's Seeds throughout the Dominion.

As the company's nurseries and farm are

in England, these specimens were entirely supplied by gardeners and owners of private estates in Canada.

Much comment was caused by the size



and obvious high grade of the specimens. Several plants from five to six feet in height and laden with fruit were evidences of good strain. There were also other specimens ranging from Mangels, Swede Turnips, and other farm roots, to splendid

vegetables of various kinds and both annual and perennial flowers from seed.

Every precaution is taken to make the seeds true to name, and it is a well-established fact that Carter's Seeds produce the highest percentage of germination qualities of any seeds. Carter's believe in the courteous treatment of their customers, and during the Exhibition coupons, entitling the visitor to a free package of choice seed, and redeemable either by post or in person, were given to all leaving their name and address with special representatives.

When you are laying in your Fall bulbs and Spring seed supplies, consult Carter's Tested Seeds. Get results and satisfaction by raising only seeds of the highest germinating qualities bearing the stamp of the oldest seed growers of Great Britain.

Carter's Tested Seeds, 133 King Street East, Toronto.

The British Columbia Exhibit

That the Commissioner of British Columbia believes that the best way to reach and interest people is to show them what the province can produce, was clearly shown by the provincial exhibit. It represented the very best in horticulture that the prolific growing conditions of the fruitful province of British Columbia could produce.

The booth in which the exhibit appeared was attractively arranged being finished in white trimmed with gold. The sides and walls were decorated with large photographs of British Columbia scenes.

Ontario has been called the land of promise; British Columbia might well be called the greater land of both opportunity and promise.

The British Columbia apple, which was

CENTRAL NURSERIES, ST. CATHARINES, ONT.

Have a Fine Assortment of

Trees, Vines, Plants, Oramentals, Etc.

For Fall Planting

For Satisfaction, Plant Cherry Trees in Fall

Our prices are right and so are the trees. Send for priced catalogue if you have none, also your want list for special prices on Apple Trees. We can please you.

Look over our Price List No Agents

A. G. HULL & SON



Cables :—Flourish, Manchester

William Darlington

Fruit Salesman

MANCHESTER

Population within a fifty mile radius 9,800,000. Send your consignments to THIS MARKET, which is the most important Apple Distributing Centre in the World—All business done on up-to-date lines—My terms are moderate and your goods are sold to the best buyers at the best prices—Please write me.

**WHITE
DUPLEX FRUIT
WRAPPER**

This wrapper is a product of many years of experimenting by the larger fruit packers. It protects, as no other wrapper can, the individual fruit from spread of any decay which may accidentally get into the box. The thinner tissue wrappers cannot give the protection from bruising, given by the thicker substance of our Duplex.

9 x 9 10 x 10 12 x 12
Corrugated, Pulp and Lace Barrel Heads. Corrugated, Lace and Wax Papers for Boxes. Tissue Fruit Wraps.

Samples and prices upon request

J. H. GAIN

124 RICHMOND ST. W. - TORONTO, ONT.

Gerhard Heintzman Pianos Pianos of Prestige

There is something in Music which you never discover
until you play for yourself

Most composers have a personality which is
revealed in their work and to recognize it makes
music more enjoyable because more interesting

WITH A

GERHARD HEINTZMAN — PLAYER PIANO —

Which anyone can Play—ANYONE

You soon begin to regard music as a discovery. You
learn the characteristics of the composer and learn to
bring them out.

There's no confusion of needless attachments. Every-
thing is simple. You think of the music—not mechanical
details.

Your old instrument taken in exchange. Con-
venient terms arranged. Why not write for the
booklet giving you fullest particulars.

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LIMITED
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OPPOSITE CITY HALL

represented by nine varieties, is one of the best in quality grown in Canada, and, with the transportation facilities afforded, forms an important export commodity. In 1912 over 1,200 cars were shipped to various

parts of Canada, and exported. In addition there were splendid specimens of three varieties of British Columbia peaches, six of plums, cherries, pears, crabapples, nectarines and tomatoes.

The display of fresh fruit was surmounted by prize bottled fruit and honey. A portion of the bottled fruit which attracted considerable attention was that prepared for the C.P.R. dining car service, which is all produced and prepared on the farm of Mr. James Johnston, Nelson, B.C.

There are also unexcelled opportunities for agricultural farming in the province, there being at the present time about 15,000,000 acres of rich prairie land capable of producing best quality crops.

For further information, apply to J. W. Brandrith, Commissioner for British Columbia, Boundary Bay, B.C.

merland. Mr. J. H. Grisdale, Director Experimental Farms, has been going over the ground. It is expected the farm will be devoted mostly to cattle, fruit and poultry.

British Columbia fruit growers are meeting with keen competition from Yakima and Wenatchee growers. The reduction in freight rates on the railroads south of the line have enabled the latter to sell at even lower prices than last year.

Experiments in cover crops have been carried on in the Kootenay district by M. S. Middleton, Assistant Provincial Horticulturist

MAX STOLPE

Ex-Superintendent Saxony Royal Gardening Institute
Germany
Holder of Gold and Silver Medals

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

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

ASK FOR PRICE LIST

17 Main Str. East - HAMILTON, Ont.

Phone 148

THIS WASHER MUST PAY FOR ITSELF.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right.

Well, I didn't like that. I was afraid the horse was not "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them. In less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it doesn't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 50 cents a week, send me 50 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me personally:

B. G. MORRIS, Manager, "1900" Washer Co., 357 Yonge St., Toronto.



British Columbia

The Dominion Department of Agriculture is intending to establish an experimental farm in the neighborhood of Sum-

NEW AND RARE SEEDS

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

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

The Bee-Keepers' Review

Is out on a hunt for new subscribers and has a special offer to make to those subscribing at the present time. The regular subscription price of the Review is \$1 per year. Our special offer is to give the last half of 1913, and all of 1914, at the regular annual price, then to those who ask for it we will include the April and May numbers containing the National Convention report for 1913. A bargain worth considering. No extra charge for Canadian postage.

Address with remittance, The Bee-Keepers' Review, Northstar, Michigan.

BULBS

HYACINTHS

Not or glass culture. Separate colors. Your selection. Red, White, Pink, Light Blue, Dark Blue. 100 each 3 for 25c. 12 for \$1.00.

For outdoor culture - separate colors as above. Each, 5c. 45c per doz. \$3.00 per 100. Roman Hyacinths. Pure White. Each, 5c. 50c per doz. \$3.50 per 100.

TULIPS

Single Early Separate colors. Your selection - Red, White, Pink, Yellow, Red Striped with Yellow. 15c per doz. \$1.00 per 100.

Harlequin - separate colors. Red, Pink, White. Dark Purple. Your selection. 40c per doz. \$3.00 per 100.

Parrot, mixed. 15c per doz. \$1.00 per 100.

All Prices Quoted Here are Post Paid

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Seed Merchants since 1866

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WE QUOTE POST PAID. Our Stock is the best of the season's crop. Nothing better can be got. WE WILL GIVE YOU SATISFACTION. Send your order early.

NARCISSUS OR DAFFODILS

Victoria, Emperor, Empress, Golden Spur, Sir Watkin, Orange Phoenix, Sulphur Phoenix, Von Sion. Your selection as to varieties. 50c per doz. \$2.00 per 100. Princetons, 15c per doz. \$1.25 per 100. Poetsia Ornatus, 10c doz. 75c per 100. Jonquils, 10c doz. 75c per 100.

Paper Whites, 15c per doz. \$1.00 per 100. Grand Soleil d'Or, 25c doz. \$2.00 per 100. Chinese Sacred Lily, 8c each. 80c per doz.

SNOWDROPS, CROCUS (Yellow, Blue, White, Striped, your selection), ANEMONES, FREESIA, SPANISH IRIS, ENGLISH IRIS, SCILLA, SIBIRICA, GRAPE HYACINTHS. Any of the above, 10c per doz. 70c per 100.

Ask for Price List