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VOLUME 23, No. 11
\$1.00 a Year

PETERBORO, ONT
NOVEMBER, 1915

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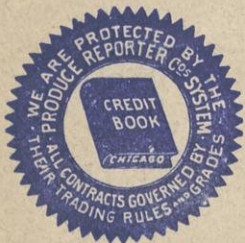
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All Three Editions.

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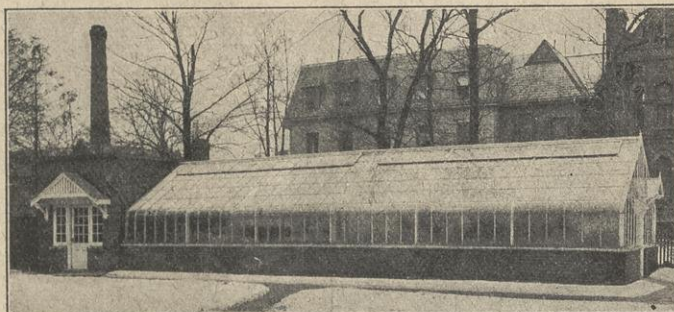
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The Canadian Horticulturist and Beekeeper

Vol. 23

PETERBORO, NOVEMBER, 1915

No. 11

The Accomplishments of a Market Gardener

E. B. Luke, Montreal, Que.

SIXTEEN years ago, there came to Montreal from Naples a young Italian to carve for himself a place in the new world. Possessing a thorough knowledge of market gardening, a descendant, in fact, from generations of market gardeners, possessing a capital of \$1,000.00, a strong physique and a clear brain, but without a knowledge of either English or French, he rented ten acres of land in Notre Dame de Grace, now a part of the City of Montreal. Three hundred dollars was paid in advance for a year's rent. Three hundred was expended in manure, seeds, implements, horses, etc., and living expenses came out of the balance, together with such credit as he could get. This, in short, is the history of the start of Pellegrino Del Sole, now the largest market gardener in the Province of Quebec, if not in the Dominion of Canada.

To-day his vegetable farms at Montreal West comprise ninety-nine acres, eighty-five of which are devoted to vegetable growing, and fourteen acres to apple orchard. In addition to these farms, he purchased two years ago one hundred and ninety acres of ideal vege-

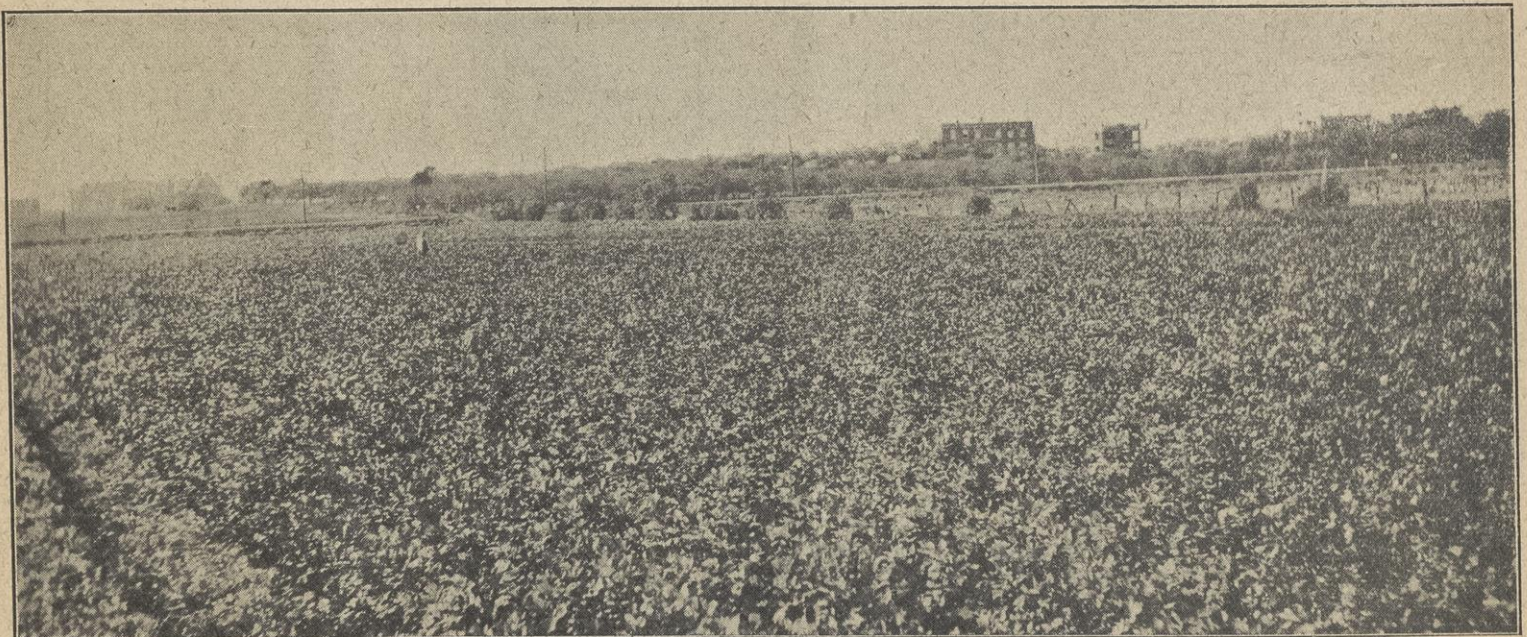
table land at St. Hubert, about eight miles from Montreal, of which sixty-five acres are planted to vegetables, thirty-five acres to hay, and forty to oats, and the balance in young orchard. On this farm he has his own private siding installed at a cost of two thousand dollars, also a private telephone line connecting his two places, and costing five hundred dollars a year.

Mr. Del Sole's policy has always been to produce in the largest quantities of the highest quality and to be in a position to supply vegetables in single bunches or in car load lots on any day of the year. Taking more from an acre than the ordinary farmer does from twenty, he realizes that plant food must be returned to the land in like proportion, so he is a prodigious user of fertilizer, using seventy to seventy-five tons an acre. His manure on both his farms costs him about six thousand dollars a year. His method of cultivating a new piece of land, after thoroughly manuring it, is to plow the first year six inches deep, the second year eight inches deep, and thereafter twelve inches deep, claiming the shallower the root system until the land

is thoroughly enriched, the quicker and better the growth. Even his hay field is enriched every year and broken up every four or five years. The wisdom of this is seen from the fact that last year thirty-five acres of hay netted him two thousand two hundred dollars, aside from that retained to feed his own stock.

The principal crops grown are celery, onions, cabbage, cauliflower, cucumbers, beets, carrots, parsnips, turnips, tomatoes, egg plants, pepper, spinach, lettuce, swiss chard, parsley, leeks, also three acres of melons that pay from \$3,000 to \$4,000 gross per acre.

Mr. Del Sole's turnover is from sixty-five to seventy-five thousand dollars a year. On an average six loads a day in the summer is disposed of on the Bonsecours market. About one-third is shipped to Quebec. Car load shipments are also made to such points as Halifax, N.S., and St. John, N.B. Large quantities are disposed of to the leading hotels and groceries in the city, who are his regular customers because he can always supply them, growing as he does more than any other twenty market gardeners in



A portion of a field of celery on Mr. Del Sole's farm at Notre Dame de Grace. Some of the varieties grown are imported from France and Italy.



A tenement built by Mr. Del Sole for his help on his farm at St. Hubert.

Montreal. His melons find a ready sale in Boston and New York. His celery is carefully graded at picking time, grades two and three being sold for immediate delivery, while number one plants are carefully crated and stored in his large frost-proof cellar for the winter market. In this cellar is also stored his winter supply of other vegetables, enabling him to supply his trade right up to the season for new vegetables.

From twenty-five to seventy-five picked and experienced men are employed, according to the season. They are paid the highest wages. Not a weed could be found on any of his farms, for, as he says, "I do not sell weeds, so I do not grow weeds."

The nature of the land on part of the farm at St. Hubert is interesting. The farm is very level. Part of it was

originally swamp. The land in that portion of it is rich, the black earth going down to a depth of twelve to thirteen feet. This land is as fine as powder. A person can put their arm down in it to the elbow without difficulty.

The cellar in which Mr. Del Sole stores his vegetables is simple in construction, and looks as if it did not amount to much, but it is well arranged. It is about two hundred feet long by about forty feet wide. It is arranged into compartments, enabling him to crate his celery four deep and with separate compartments for cauliflower, also a half story, covering a whole cellar, for onions and such other produce as can be stored in bins on the floor. At one end of the cellar there is a complete work shop, sorting and packing room.

In onions, such varieties are grown as the Early Red, Red Globe, Yellow Globe, Red Weatherfield, and Silver King, in addition to some Italian varieties, the seeds for which are imported. In celery, the varieties grown include the Golden and Green, and varieties imported from France and Italy.

That intensive farming pays is attested by the fact that Mr. Del Sole's net profits are from ten thousand dollars to twelve thousand dollars a year. It is also known that, aside from his farms, he owns valuable city property, and in addition has five farms clear of all incumbrance in Italy, on which he is producing considerable quantities of nuts that he finds a ready market for and at profitable prices in Canada. A conservative estimate is that market gardening has netted him well over two hundred thousand dollars, and he is only forty-three years of age—in other words, just in his prime.

Fall Work in the Orchard

M. B. Davis, B.S.A., Ottawa

Although the fall is the slackest time of the year for the fruit grower, there are a few things that need attention yet before winter sets in. In the orchard, little can be done after the crop is harvested, for pruning should be left until next spring. In the more favored districts, however, where fall plowing is practicable, such as in the Maritime Provinces, this work should commence at once.

In young orchards, where mice are generally abundant, now is the time to protect the trees against their ravages. Before the snow comes, building paper should be tied about the trunks of the young trees and a little earth mounded up at the base and well tramped down, so that the mice cannot work underneath the paper. This paper prevents the mice from girdling the trees in winter, which they will surely do when in search of some succulent food. This paper also acts as a very good preventative against sunscald in the month of March. It is removed from the trees in the spring of the year after the trees have started into growth.

Winter Protection.

The winter protection for the strawberry field should not be delayed too long. Put on a moderately heavy coat of straw, spreading it over the whole patch. If there are any low-lying places in the plantation, run a furrow through these spots to allow a circulation of air to pass through during the early spring months when the ice is thawing out.

Unless growing grapes in the fruit belt, where winter protection is not required, it will be necessary to lay the vines down and cover them with earth.



Crating celery for storage on Mr. Del Sole's farm at St. Hubert. Mr. Del Sole says that his summer produce simply pays his expenses. He makes his profits from what he sells from fall until spring. During the winter he makes as high as \$400 a week from his celery alone.

Pruning the vineyard is generally carried on at this season of the year.

If not already done, it is a good time to remove the dead canes from the raspberry patch, instead of leaving them for next spring, when work will be piling up.

The fall of the year is the best time for setting out raspberries and currants. This should be done as soon as possible now. It is also an excellent time to take currant cuttings for next year's new currant bushes. These cut-

tings are taken from the present season's well-ripened wood, and may be stored in moist sand in a cool cellar, or planted at once in nursery rows in the open. Scions from apple trees may also be gathered now; in fact it is better to gather them before severe winter weather, for then you obtain them before any drying-out has occurred, and the chances of their uniting with the stock are thus increased. They should be stored in a cool, damp place, and packed in moist sand or sawdust to prevent drying out.

it during a dry period. On account of the uncertainty of rainfall it is always desirable that irrigated land be well drained, if not naturally, then by means of tile to carry off at any time excess water.

Controlling Factors.

The practicability of irrigating land is dependent upon the greater returns that may be obtained from that land under irrigation. Many crops would not show a sufficient increase in returns to warrant the expenditure necessary to instal and operate a practical system, so that it at once becomes necessary to determine what crops may be expected to show a return under irrigation. It is partly for this reason that the various colleges and experimental farms in Canada have already installed systems. However, from our present knowledge we are reasonably sure that in many places under average conditions irrigation will pay abundantly on such crops as strawberries, celery, onions, etc., and on many lines of florists' stock. This profit may be obtained from the crop under irrigation by giving a greatly increased yield, a better quality crop in everything that makes for quality, an earlier crop, or a crop that is much freer from injuries from disease and insect pests. Also irrigation will frequently permit of a second crop after an early one, or will permit of the sowing of a cover crop after the main crop has been harvested, and by forcing this cover crop with water we can benefit

Irrigation Tests at Macdonald College

Prof. T. G. Bunting, Macdonald College

IRRIGATION has been practised for several thousand years in parts of the old world. The Egyptians have irrigated of necessity for probably four thousand years, and in recent years large sums of money have been spent in improving their system and in extending the area under irrigation in the great desert of the valley of the Nile.

With the opening and development of the Pacific Coast region to fruit growing and vegetable gardening irrigation at once became a great factor in the wonderful success of that country. Their systems of irrigation are largely modelled after those of the old world, in which water is taken from the rivers and carried by gravity to the land and there distributed to the crops by flooding or conducting the water through narrow furrows between the rows of plants. Within comparatively recent years irrigation for certain crops has been practised extensively in the eastern United States, and during the last few years has been introduced into Eastern Canada. With the greater importance of our crops and their increasing cost of production we have been forced to use more and more water, until now many hundreds of acres of vegetables, small fruits and florists' stock are under irrigation in the eastern United States and Canada.

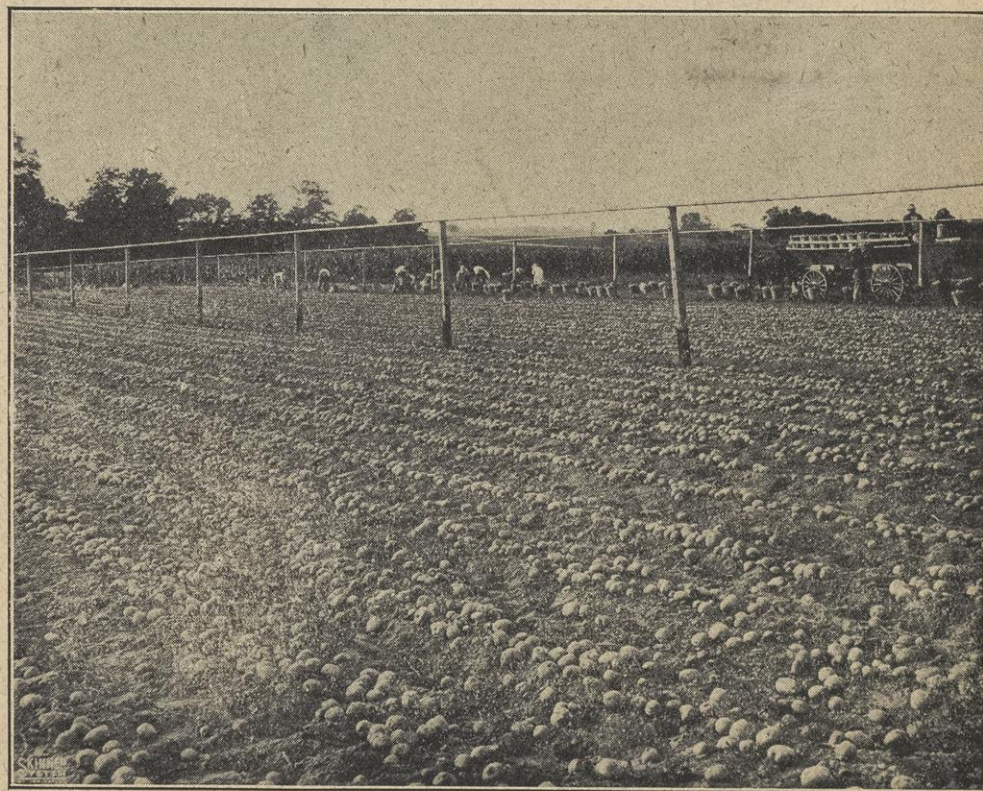
Droughts Cause Loss.

Not a year passes without a greater or less period of drought during the summer season. This is the time plants are or should be making their maximum growth. How often do we see reports that such and such crops have been greatly affected by a drought. These periods of drought are probably the greatest limiting factor in crop production that we have to contend with. This is because water is one of the most important factors in crop production, and one that is not fully appreciated. It is essential for the proper solution of plant foods in the soil. Without it the important soil function

could not take place. Plant food must be in very weak dilution in the soil water or it cannot be taken up by the plants. It comprises the larger part by weight of all plants, and for every pound of dry matter contained in them hundreds of pounds of water are required for the transference of this dry matter from the soil to the plant.

There are many ways of conserving soil moisture to tide the plants of whatever kind over these periods of drought, such as drainage, cultivation and mulching, but only in the direct application of water can we be absolutely independent of rainfall. This condition explains the great importance of reliable irrigation systems.

Irrigation is not intended to take the place of rain, but rather to supplement



This crop of potatoes yielded 600 bushels to the acre. Note the piping for the Skinner system of irrigation which was used.



The growing of grapes on a commercial scale is being developed in Lambton County, Ont.
This vineyard is owned by Robt. W. Riggs, Arkona, Ont.

the soil so that it will be in much better shape for the following year's crop.

There are many ways of applying water to the ground or growing crops, and one of the commonest to the florist is by means of a garden hose attached to a supply of water under pressure. This is slow work and expensive of labor or upkeep and is only feasible on small gardens. Small garden sprinklers of various makes and capacities are often used with the hose to reduce the cost of distribution, but they do not distribute uniformly and only partly reduce the cost. Surface irrigation, such as conducting water by gravity through ditches and distributing it between the rows of plants in shallow furrows is extravagant of water and not very well suited to our conditions of soil. Sub-irrigation, or the distribution of water through numerous underground tile is also extravagant of water and does not give even distribution or uniform results.

The system that is in general use and that is giving greatest satisfaction is a system of overhead sprinkling after the manner of rainfall, and is called the Skinner System of Irrigation. It consists of an overhead system of lateral pipes, three-quarter inches to one and one-quarter inches in diameter, depending on its length, in parallel rows, forty-five feet to sixty feet apart, connected to a main supply line, usually underground, and delivering the water to the laterals at a pressure of twenty-five to thirty-five or more pounds. The laterals are provided at intervals of from three to four feet with small nozzles in perfect alignment that throw a stream of water from twenty to thirty feet. This stream of water, in being thrown from the nozzle, is broken up into innumerable small drops which fall to the ground in much the same manner

as a gentle rain, and the ground is covered uniformly. The latest lines are provided with a turning device, so that the nozzles may be elevated or lowered, depending on the distance desired to throw the water, side to be irrigated, or direction and velocity of wind.

Approximately one inch of water may be delivered on the land for the full length of the lateral over a width of twenty-five feet in a period of ten hours, of course depending on pressure of water, size of pipe and nozzles used; or both sides of the lateral can be irrigated to a depth of one inch in two periods of ten hours each. One inch of water is equivalent to a heavy rainfall, and will give a thorough soaking to the ground for a considerable depth, depending on the dryness of the soil before the application. At Macdonald College we have been giving with good results an application of one-half to three-quarters of an inch of water at a time and the applications as frequently as every five to seven days, again depending on the rainfall and condition of the crop. One good irrigation once a week is of more value than a number of light sprinkles every day during the dry season. Light sprinkling only wets the surface soil and is soon lost by evaporation, and little of it ever gets to the roots of the plants.

Cost of Installation.

This system is an expensive one to instal, but of course much depends on the source of water supply, cost of pumping and delivering the water under the required pressure, cost of pipe and material, and labor required. As this varies a great deal no estimates can be reliably given, but if water cannot be delivered to the land to be irrigated at the required pressure at ten cents per thousand gallons the cost would probably be excessive. At ten cents per thousand gallons the cost is

approximately two dollars and thirty cents an acre inch of water for delivery charge, and one would require from two to five acre inches of water per season. During the past season we used on an average two decimal fifty-five acre inches of water over nine acres of vegetables, strawberries and some florists' stock, some crops requiring more water than others.

The cost of installing the system on the land, exclusive of the cost of delivering the water, can be more easily determined. Estimates will vary according to the price of pipe and other material used, labor and method used in supporting the lateral lines. These estimates may run from one hundred dollars to as high as three hundred dollars an acre or more. Our system, which has been in practical operation for two seasons, has cost for installation slightly under one hundred dollars an acre, but as yet the laterals are supported on wooden stakes, which will eventually be replaced by permanent pipe supports set in concrete. This will cost approximately twenty-five dollars per acre, and with a few minor changes and improvements the system will cost well under one hundred and forty dollars an acre for installation.

The question of depreciation cannot be determined until the system has been under operation for a series of years, but if properly installed and given reasonable care and attention the depreciation should not exceed ten per cent. per year.

We have not as yet obtained any definite information on the actual yearly cost of irrigating, including cost of pumping and delivering water, interest on capital invested in plant, depreciation, and labor attached to irrigating and the upkeep of the system, but judging from the present information it will not be far short, if not above twenty-five dollars an acre per season, depending on the season and the kind of crop to be irrigated.

Macdonald College was the first experimental farm in this country to install the Skinner System. We have nearly nine acres of it in operation. The crops that have been irrigated with apparent success are strawberries, celery, onions, potatoes, early corn, tomatoes and melons, together with some florists' stock.

We have yet much to learn about irrigation under our conditions in regard to amount of water required, frequency of application, and crops on which it may reasonably be expected to show a profit. Also it should in future be possible to considerably lessen the cost of installation and the cost of pumping water.

There are many growers who could obtain an abundant supply of water

(Continued on page 266.)

Room Plants in Winter

John Gall, Inglewood, Ont.

MANY plants that have succeeded fairly well in the dwelling house during the summer and early fall months begin, when winter sets in, to lose their freshness. Of course, one looks for this in the case of plants of a soft-wooded nature, but when such subjects as palms, the evergreen



A beauty spot in Galt, planted by the Galt Horticultural Society.

ferns, and even Aspidistras look more or less unhappy, the cause needs seeking.

There are several reasons that may be put forward for this, but one of the most likely causes of the plants being affected is that with the increase of fires, lamps or gas for the purposes of illumination, the atmosphere is rendered much drier than it was. This condition of things is very detrimental to plant life, and consequently the plants soon show the effects thereof. The best lighting medium for the welfare of plants is electricity and the worst, gas. The exceedingly dry atmosphere against which we have to contend also causes the soil in the pots to dry as quickly as, or perhaps even in some cases quicker than in the summer, though, of course, in this respect the condition of the plants, the requirements of the different individuals and their position in the room all play an important part in the matter.

A question put perhaps more frequently than any other is, "How often should I water my plants which are in the window or elsewhere in the room?" This question is easily asked, but absolutely impossible to answer. Take, for instance, a palm growing in a comparatively small pot. Around the bottom of this, the stout roots, whence the principal nourishment is derived, are coiled. Under such conditions it is almost impossible to over-water it, whereas another one, in a larger pot, and consequently a greater mass of soil perhaps unpenetrated by roots, would be killed by receiving the same treatment.

A mistake very often made is that as soon as a plant appears somewhat sickly it is looked upon as requiring a larger pot, whatever be the season of the year. Even if it would be benefited by an increased size of pot, the operation of repotting should not be carried out after September; indeed, the months of April, May, June and July are best for the purpose, as there is then ample time for the new roots to take possession of the fresh soil before the winter. Such being the case, if plants at this season appear to be underpotted, the better way will be to wait till April before disturbing them at the roots.

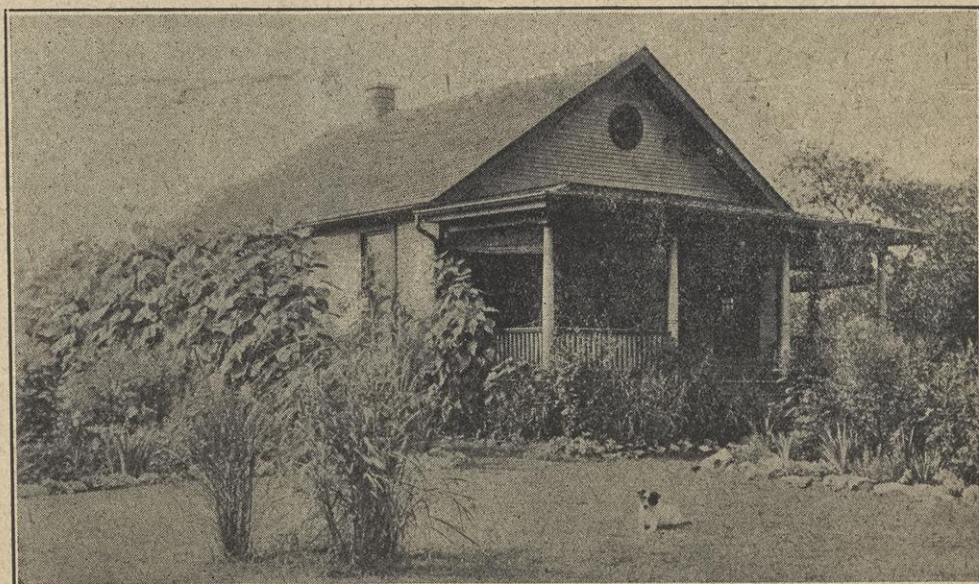
As it is impossible to state any definite period when room plants should be watered, a few words of advice may be given on this point. In the first place, the soil must be allowed to get dry before watering, and then enough water should be given to thoroughly moisten the ball of earth. By saying dry, it is not meant that the soil must be parched up so as to injure the plant, but rather that it is in that condition which a careful observer will at once see as likely to be benefited by a good watering. Above all things, avoid giving little drops occasionally, as this will undermine the constitution of plants. When a plant requires watering, the better plan will be to take and stand it in a pail of slightly tepid water at such a depth that the rim of the pot is covered. When the water has percolated through the entire ball of earth, which may be ascertained by the air bubbles ceasing to rise, it should

be taken from the pail, allowed to drain, and then put in its usual place. On no account should stagnant water be allowed to stand in the jardinières in which the plants are placed.

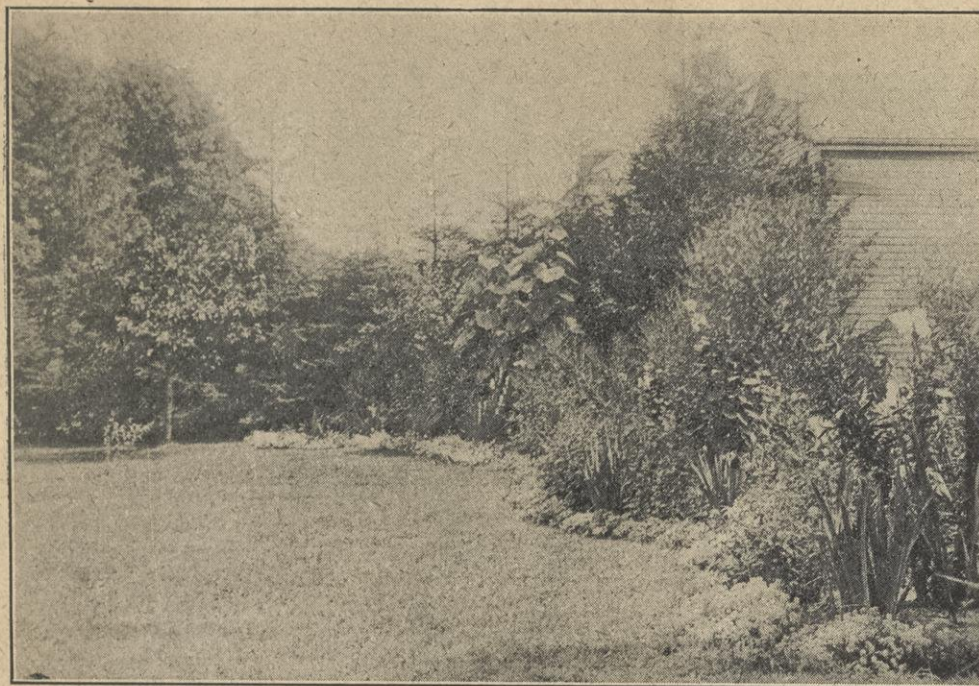
With the dry atmosphere there is always a certain amount of dust, and to keep the foliage of the plants as clean as possible is a very important matter. Such subjects as the Aspidistra and palms of different kinds, whose leaves are smooth and of a firm texture, may be readily kept clean by frequently sponging with lukewarm water. On the other hand, such subjects as ferns, whose foliage is very intricately divided, collect the dust to a greater extent than the smooth-leaved plants, and are also more difficult to clean. The better way is to take advantage of a mild day to give them a syringing. On no account, however, must this be done during frost.

Another very important matter during sharp, frosty weather is to bear in mind that the greatest cold is, as a rule, experienced during the night when the fire is apt to go down, and consequently the temperature of the room is lowered. The coldest part is, of course, near the window, where most of the plants are usually kept; and in order to make all safe, the plants should be removed from their more exposed position to the centre of the room, where, arranged in a close group and covered with a few newspapers, they will be safe. When possible, however, they should be stood near the window, so as to obtain the full measure of light which is so essential to the welfare of the plants in general.

We should work for "A beauty that supplies a daily need" and not a Sunday pride.



The bungalow and garden, in Lundy's Lane, Ont., of Mr. F. Junkinson, of Niagara Falls South. Two years before the photograph was taken the lot was a waste of weeds and rubbish. Stones from an old foundation were used for borders and landscape effects.



This shows another portion of Mr. Junkinson's garden. The garden throughout was planted with the object of creating an informal effect. Its pleasing character is well shown in the illustration.

Tender Plants in Cold Frames

B. C. Tillett, Hamilton, Ont.

MANY tender plants are wintered in cold frames, and on the other hand, many perish. The greatest enemy to contend with is damp, and therefore precautions should be taken to combat it as far as possible. In the first place, the bottom of the frame should be above the surrounding ground, and the bottom covered with ashes (not too fine), or some similar material. Then when the plants are placed in their winter quarters, they should be kept as dry as possible, consistent with safety.

Until frosty weather comes, air should be given night and day, so that the plants may be kept in as dormant and hardy a state as possible. The lights, of course, should not be left off during either rain or snow, but when air is desirable, they may be tilted during the night. This will keep the plants in as good a condition as possible to withstand severe weather. When the time comes when severe frosts may be expected, the exposed sides of the frame should be banked up with some frost-resisting material, such as litter, leaves or old straw. It should be as dry as possible when put into its place, as dry material of any kind resists frost much better when it is wet.

During severe and long-continued frost the occupants of the frame may become frozen, despite the covering of litter. In this case nothing can be done, and the least harm will accrue if

the plants are allowed to remain undisturbed. When the thaw comes is a very critical time, but with a little care the risk of injury may be greatly minimized. However pronounced the thaw, the frames should be allowed to remain shut up for twenty-four hours and the plants kept in absolute darkness. At the expiration of that time, the lights must be tilted a little at the back, which is the highest part, in order to allow the moisture to escape, but not enough to admit daylight. They may be left in this way for two or three days, and after this the plant inured gradually to the light. Then, as soon as possible, the frame should be examined to ascertain the condition of its occupants, and also for the removal of any decaying leaves. In this way many tender plants may often be brought safely through the winter months.

The Vegetable and Fruit Garden*

H. L. Patmore, Brandon, Man.

IF we want to have a garden in which the soil shall be sweet and clean and free from insects and grubs, we should clean up in the fall all rubbish, dead vines, and other litter and burn it. Have the land well dug, or if possible deeply ploughed and manured, first spreading on it rotted manure and then ploughing or digging it

*Extract from an address before the Manitoba Horticultural Society.

under. It is best to leave the land if possible a little rough in the fall, so that the rain, snows and frost can penetrate, sweetening the soil and leaving it in good, moist condition in the spring.

The ground allotted for the sowing of onions, carrots, parsnips and other early seeds should be made ready in the fall, so that the seed can be put in just as early as possible in the spring. This is where so many of our gardeners in this western climate fall down. A few days' difference with these seeds in the spring will often make a difference between a good crop and a failure, especially with onions.

For early spring use, Egyptian Perennial onions can be planted in the fall, and the earlier the better. These will be ready to use the earliest of any in the spring, when they are tender.

Rhubarb is a plant that runs out very quickly in this climate. To obtain the best yield and quality, the plants should be renewed at least every three or four years. To do this, the best plan is to take a few strong crowns from the old plants each fall and start a new supply. In this way you will always have a good stock of young rhubarb roots growing and coming into their best productive value. The older plants can be dug and left to rest in the fall of the year, even on top of the ground. Dry weather or frost will not hurt them; and if left available in any place they can be picked up in the winter time and brought into the house and placed in a flower pot or tub near heat, and in two or three weeks a supply of rhubarb for use can be obtained. This is so easy that if generally known it would be very useful and of value to many a family living on the western prairies.

Asparagus plants are all the better for manuring, and a loosening of soil in the fall of the year, if possible, leaving a little of the tops out to gather the snow.

If we have fruit trees and bushes in the garden, it is well to put manure around them and dig it under in the fall; and if there is danger of rabbits and mice being destructive, a little tar paper wrapped around the fruit trees will do much to prevent injury.

Currants and gooseberries should be pruned slightly in the fall, just taking away the old, dry wood or anything which is straggly. To obtain a crop of good, large fruit of these the following season a dressing of cow manure would be of great assistance. Cow manure is largely water, and if dug into the soil around the bushes in the fall of the year, it will keep the soil cool and moist all through the following summer, enabling the bushes to produce the largest sized berries.

Life History of the Worker Bee

Geo. F. Kingsmill, Guelph

UNDER ordinary conditions during the greater part of the year, three castes of bee are found in a colony—one queen, a few hundred drones, and several thousand workers. Each caste is distinctly different in shape, size, color, and performs entirely different kinds of work about the home. The queen is the mother or egg machine of the colony: the drones—male bees—mate with the queen and the workers. The most numerous about the hive are the slaves or laboring bees.

The queen lays the egg. If she has been mated with a drone, and happens to lay the egg in a worker cell, a worker or queen bee will be produced. That is, a queen or worker bee is produced from a pregmated—fertilized—call it what you may—egg containing some of the male elements. This is easily proven by the common practice of giving a queenless colony a comb of open brood. The workers will tear down the walls of two or three cells about a cell containing a young larva, and so enlarge it that it will form a queen cup, and by special feeding this young worker larva in the enlarged cell will turn into a queen larva, and in reaching the adult stage it will be a queen bee. The difference between a worker and a queen seems to be caused by a difference in degree of size of cell, and amount and kind of nursing of the larva. We may regard the worker bee as an imperfectly developed female.

If the queen heading the colony is young and vigorous, and the brood combs of worker cells, the greater part of the brood will be worker brood. As we get worker bees from eggs in worker cells, drone bees from eggs in drone cells, to control the number of drones limit the area of drone comb. To increase the worker force, increase the area of worker combs.

The queen lays the worker egg in the worker cell. The egg—one in each cell—is banana-shaped, about 6-100 of an inch in length, and pearly white in color. It is attached to the base or the rear wall of the cell by the small end. When the comb is held in such a position that the light is reflected into the cell, the small white egg is easily seen in the blackened cell. In the ordinary temperature of the cluster, this egg hatches at the end of the third day. It forms a very small white worm or larva. At first it is C-shaped at the rear of the cell. It is fed a rich food, probably a secretion from the nurse glands that are so conspicuous on the young bees, and at the end of the third day of feeding the rear end of the cell

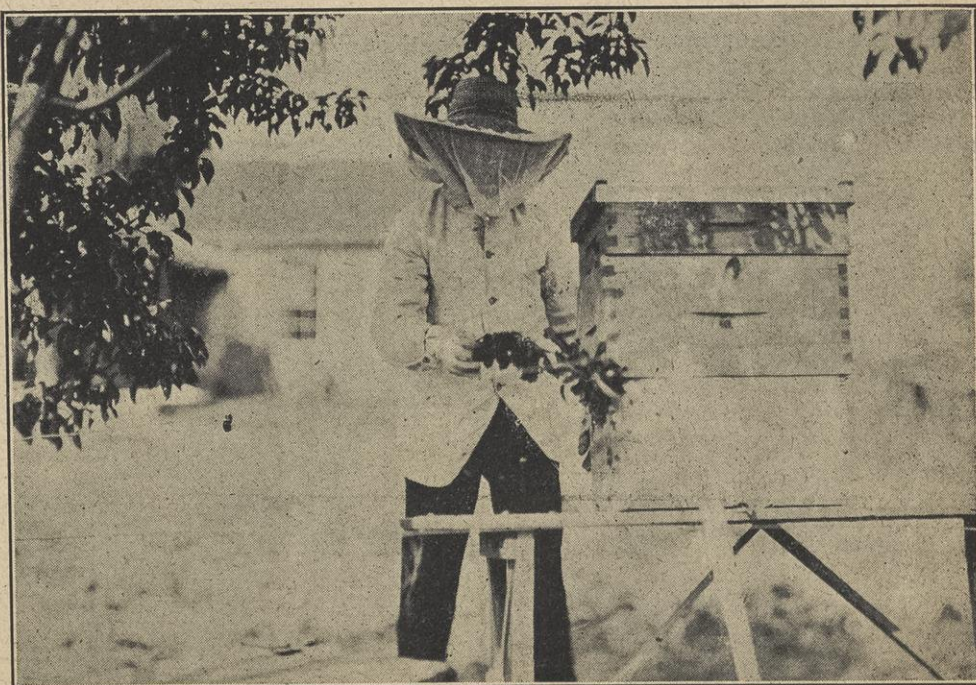
is completely filled with this rapidly-developing larva. It is well to note both the plump appearance and shiny, pearly white color of the healthy larva, as diseased larva present a different appearance.

During the last three days, making six in all for the larval stage, the food supplied by the young adult workers—"nurse bees"—is coarse and is a mixture of pollen and honey. The larva uncurls from its rolled-up shape and lies lengthwise in the cell. At the sixth day the workers cease feeding it, and cover the cell with a waxen capping. This is lined—only the covering, and not the entire cell—with a silken lining by the enclosed larva. It now enters the third period of its metamorphosis—the pupal stage. Entering this stage with the appearance of a white worm, it undergoes moults, and in twelve days it has changed in shape, size and color to resemble the adult worker bee. On the twelfth day, this young pupa gnaws a circular opening in the covering and lifts the lid of the cell and emerges from its cradle. It has the shape and appearance of the adult, and is quite furry and downy. It seems weak in the knees, but after finding a cell of honey and having a good feed it is much strengthened and ready to begin its life work. It has no infancy, no time for loafing, but after satisfying its own hunger it starts feeding the larvae in the cells. Then, perhaps, it will do some comb building or repairing, then some housecleaning,

cell polishing, ventilating, or any of the other inside the hive jobs.

In one to two weeks it seeks a fine afternoon to have its baby flight. Leaving the hive, it uses its wings and dashes to and fro at the entrance of the hive. This playing flight is often mistaken for robbing. It is well to learn the difference. It learns its entrance, its location, and when about two weeks of age it starts its field work. This is really the important part of its existence, as it is the nectar gathering that concerns us. Notice just here the length of time that has elapsed between the laying of the egg and the starting of the field work; three weeks has passed from the egg to the adult, and two more from the emerging from the cell to the beginning of its field work. If the pullet is to lay in December, the eggs must be set in April. If the bee is to gather nectar in June, for the clover flow the egg must be laid the latter part of April or early in May. It is the field force that gathers nectar, and not the hive workers or the developing brood. Have your laborers in the field when the grain is ripened—not after it has rotted.

The length of the days of the worker bee vary considerably. If hatched in May, it may live till July. It passes through the busiest season of the year, and its strenuous work wears out its vitality. It works itself to death. But if hatched in August or September, it may live till the following May, as it



Who's afraid of bees? A Lambton County beekeeper who is and isn't.

is not overly active at that season, and its energy is spread over a longer time.

Conclusion: The egg that produces the worker is laid in a worker cell: twenty-one days in the immature stage

and about two weeks in the hive stage, so that the bee is five weeks old when ready for field work. The workers are the nectar gatherers. They work themselves to death.

Beekeeping in Nova Scotia

Morley Pettit, Provincial Apiarist, Guelph, Ont.

TO the casual visitor Nova Scotia gives the impression of being the neglected Province, so far as honey resources go. The clover area there is limited, of course, but it is almost unoccupied. To understand the situation one must know local conditions.

The Province is about three hundred and seventy miles long and sixty to one hundred miles wide. A watershed runs through the whole length of it, dividing the Atlantic slope from that which drains into the Bay of Fundy and Northumberland Strait. While the former is in general rocky and barren, the latter is for the most part fertile and productive. The most remarkable feature of Bay of Fundy Basin is the tide, which would alternately flood and leave bare great areas of flat land were it not for the ridges of clay which were thrown up by the settlers years ago to reclaim these lands from their daily inundation. These reclaimed fields, which aggregate many thousands of acres and are locally called "the dykes," are kept solely for hay. They are immensely fertile and enormous crops are taken from them annually. But the most interesting feature for the beekeeper is that this hay, in a good clover year, is largely alsike. Needless to say that the beekeepers are getting good returns.

There are also the uplands, such as in the famous Annapolis Valley, where apples are grown extensively and various honey plants thrive. One of these which seems quite valuable is the wild radish. What little buckwheat is grown does not seem to yield honey. Golden rod yields freely a honey of good quality. In fact there seems to be little or no dark honey, so that extracting need not be done till the end of all honey flows.

Wintering in the Annapolis Valley seems a very easy matter. Many apiaries are left without protection and seem to thrive. The bees are all blacks, as the people are prejudiced against Italians. They have not yet had their baptism of European Foul Brood. In fact, very few are really taking the business seriously.

But then, the same can be said of most parts of the country. Wherever you go—almost—it is the same. When you enquire about bees, they say, "O, yes, this district ought to be good for

bees, there is lots of clover and plenty of fall flowers, etc. So and so, over here, is the only beekeeper around, but he is going right in for them. Why he must have sixteen hives!" Or in another place they will say that Mr. — is a regular professional, "he must have forty or fifty hives!"

On the other hand, the district where some are really in it for a business is liable to become over-crowded by those who really wake up. What is wanted is a business idea of beekeeping with a proper perspective on its possibilities and its limitations alike.

A Beginner's Experience

E. J. Porte, London, Ont.

Last fall I packed eighteen colonies away in outside cases. I packed around the sides and ends with leaves. There are twelve-inch trays on all my hives, and in these I put planer shavings and cork chips ten inches deep, as they are nice and light to lift when inspecting, and handy. I lost no colonies, but one was very weak and two were poor when I first opened. The balance were all good and eight A1. I opened the first time about February 20, and found sealed brood in two and eggs in five others. The balance had neither eggs nor brood, I believe. I opened next about March 13, and found young bees, eggs or larvae in all but four colonies, and plenty of honey.

All the colonies but four faced east until March 1, when I turned all but two around to the south, to avoid the bad winds I get on my hill. I have proven at least to my satisfaction that east winds are too scorching for my location.

Editorial Note: Mr. Porte is a business man who is very enthusiastic over his bees as a side line. He admits quite freely that he opened them too early in the season for safety, but as he is learning he would rather run the risk of damaging his colonies a little for the sake of learning what he can from them at all seasons. Turning the hives around to get a better facing was liable to cause as much harm as good, because if the first flight day proved to be chilly, many bees would be lost coming back to the old position of the entrance.

The correct temperature for cellar wintering is about 42 degrees F.

Wintering Weak Colonies

I started last spring with three hives. As I was anxious to get a great number, I took a lot of artificial swarms, most of which have a fertilized queen now. They are, however, quite weak. Owing to scarcity of work I was not able to make money enough to feed my 21 hives sufficiently. I now expect to have money enough by November. Would it be advisable to take the bees at that time into a heated room for feeding and brooding purposes?—Q. J., British Columbia.

Do not attempt to winter weak colonies, at least that is the advice I would give for Ontario. I am not certain about the nature of your winter, and if the bees would be able to fly every week or so, it might be possible to continue building them up after you are able to buy the sugar in November. For this purpose I would not move them into a room, but would pack them according to directions given in the bulletin on wintering, which I am sending you under separate cover. To feed them for brood rearing, I would use syrup made about half and half sugar and water, and give it to them in a perforated top feeder with just one or two holes in the top. This can be made by cutting a piece of tin the size of the glass top of a fruit jar. Fill the jar with syrup, then put the disk of tin with one or two pinholes in it on the top. Screw the ring down over it, adding one or two rubber rings to hold it tightly in place. This is inverted over the feeder board and packing material packed all around it to keep it warm and keep the top of the brood chamber warm. They should not be allowed to take this feed more rapidly than about half a pint a day.

Protection Advised

Do you advise the creation of a protection to keep cold winds from striking the hives?—M. S.

I am in favor of the eight foot board fence around the apiary provided there is not natural protection from the wind. However, I would prefer the natural protection if we had it in good shape. At the College apiary we have the hives in a bunch of evergreen trees and no very strong wind strikes them. However we have not tested the board fence very thoroughly as yet, but I have some apiaries under observation from which I hope to have results very shortly.

A cellar used for wintering bees should be dry and warm enough so that water does not freeze in it even in the coldest weather. The part of the cellar used for the bees should not be exposed to draughts and should be kept in darkness. There should also be two or three windows for the sake of ventilation. The ideal temperature for wintering bees in the cellar is 45 degrees F. and if the temperature goes much above this point open the windows slightly to reduce the temperature. If it drops much below 45 degrees it is advisable to introduce heat to keep the temperature up.—H. W. Jones, Bedford, Que.



The apiary of Alex. J. McLellan, Mille Roche, Ont.

Degeneracy and Foul Brood

John Ray, Fort Erie, Ont.

About four years ago foul brood was the dread of the beekeeper, but since then by tests and observation it has practically become the safety valve of the beekeeper, for the simple reason that if any beekeeper allows his queens to become degenerated the bees from such queens, those that hatch out, appear weak, stupid, and given to idleness. Those that do not hatch out are simply foul brood. From my observation the bees that do hatch out seem to know the condition of their queen. Give the same bees a good, vigorous queen—the brighter yellow after her specie the better—and they will jump to work. It is surprising how they will clean that foul brood out and put all in first-class shape for their new queen to begin laying eggs.

I have almost come to the conclusion that a beekeeper can tell to almost a certainty by the color of his bees whether there is any foul brood or not. As soon as they begin to fade in their color get a new vigorous queen for that hive. Therefore, I claim that foul brood is the safety valve of beekeeping; that is, those that do not keep their queens up to a high standard of vigor go down and out and leave the field to those who do.

I claim that foul brood is not contagious, but is caused by degeneracy. This is an old stand I took about two years ago against the contention of Mr. Pettit that foul brood was a contagious bacteria. I hold harder than ever to my theory, and it is backed up by my observation of the distribution of queens by the association. I claim that Mr. Pettit has done more to promote beekeeping the past two years by the distribution of queens than was done in twenty years before. It gives any man, especially a beginner, such a demonstration of facts, that if he does not heed

it out he goes; therefore, if I may suggest, why not raise queens for distribution at the Agricultural College under Mr. Pettit's supervision?

Commenting on the foregoing, Mr. Pettit says:

"I agree entirely with what Mr. Ray says in reference to the value of Italians as resisters of European Foul Brood, but when he states that the degenerate black bees are responsible for the disease and not the infection, I would ask how does he account for the fact that all through the eastern counties of Ontario black bees were kept and neglected for years without any disease of any kind appearing among them? It is only after the infection has got into the neighborhood that the conditions which are described are experienced. If Mr. Ray will explain this we might then consider his theory.

A Swarming Experience

Last summer I had an experience with my bees which I believe is a most unusual one. One of my colonies, which came through the winter in good shape, swarmed on May 30. Much to my surprise, the swarm again swarmed on July 8, a very heavy one. I put them in a hive, and they have done well. Have any other readers of *The Beekeeper* had a similar experience?—W. Z. Horrman, Westmount, Que.

Note.—Bees often swarm as you have mentioned, but swarms that issue as early as the last of May will not store as much honey as those which issue two to three weeks later. Swarms that issue as late as the tenth to the twentieth of July would not be of much value in many parts of Ontario or Quebec, where there is a late flow, and would stand a poor chance of wintering.—Observer.

The Lady and the Ladder

Rose A. Hambly, Rose Isle, Man.

Listen, my friend, to a story true,
And I hope nothing like it will happen
to you.

"What is so rare as a day in June?"
I wedded the words to a little tune
As I lay in a hammock under the trees
Where the leaves were stirred by a
vagrant breeze.
Glad was my heart at the bee's brave
hum
As I thought of the harvest days to
come.

Ninety-five hives, at seventy pounds,
At twenty-two cents, how jolly it
sounds!
For you know the pleasure we all de-
rive
Counting our chickens before they ar-
rive.
All at once from a little distance,
Clearly I heard a call for assistance,

And a little girl stepped into view,
Dressed neatly in gingham of white
and blue.

"Back of our house at the edge of the
scrub,

A swarm is clustered as big as a tub.
George is away, and mother's afraid,
Would you please come over and lend
your aid?"

Sure enough in a crooked old tree
Was the largest swarm I ever did see:
And right underneath was another
stand

Of the self same breed—just about one
band.

Then and there I called for a ladder—
Each time I think of it, makes me sad-
der.

The tree was short, and the ladder
long,

And what made it worse, not overly
strong,

So twisted and loose in every rung—
The man who made it deserved to be
hung!

With a sharp wee saw, I cut the bough,
And I shouted, "Hurrah! I have you
now!"

Just at that moment the ladder broke
And the bees underneath poured out
like smoke,

For quite as surely as you are alive,
I alighted right on top of their hive,—
The swarm clasped close to my frenzied
breast,—

But why prolong it? For you know
the rest!!

Into the cellar I wildly ran,
While the little girl shrieked, "Shall
I beat on a pan?"

Selling This Year's Honey Crop

Morley Pettit

IN 1903 the crop and price reporting system of the Ontario Beekeepers' Association was inaugurated. This did a great deal towards making honey a staple article of food, with something like regular market prices. In 1913 we were blessed with a very large crop of honey, and both producers and buyers got alarmed about over-production; but the crop failure of 1914 reversed conditions, and cleared up any surplus there might be.

In the meantime a great wave of land gambling, extravagant improvements and general mortgaging of the future in purchases of various kinds passed over the country, inflating financial ideas until a "blow-out" was inevitable. The outbreak of war in August, 1914, only hastened the collapse. As the inflation was graduated from normal or dull business, in the Maritime provinces, to the maximum of boom in the west, so the recovery has been first and strongest in the east, where they had no distance to fall, and have since been doing business "more than usual." But with an enormous wheat crop and record breaking yields, the west is again optimistic, and if sufficient transportation is really provided, will be able to pay the increased freight rates and accept the reduced prices and still make good-sized payments on the numerous implements which have been sold to them, and on the mammoth tractors they did not need.

Winnipeg men who should know, are not agreed on the probable buying power of the west this year. One man says that a good sale of the wheat this year will set the farmers on their feet, and enable them to pay off the implement men, so they can keep for themselves the proceeds of their 1916 crop. Another, who should be equally well informed, considers that the west will have plenty of money to spend this year, in addition to paying off debts.

One thing is certain, they are all interested in Ontario's honey, and have the impression that it is rather scarce. They are not raising much themselves, fruit is high priced by the time it reaches them, they must eat something, and with an enormous crop of grain, they are going to buy, so long as we supply them with a good article at a reasonable price. The farmers want 10 lb. and 60 lb. tins, the towns and cities want it in glass and in 5 lb. and 2½ lb. pails, with a very limited demand for the 10 lb. pails. All tins should be lithographed, and should bear the producer's name or brand. A buyer will often pay five cents more for a small tin bearing an established brand. They seem to prefer the honey granulated, as they consider that a test of purity, and many are suspicious of liquid honey. There is a fairly good demand in the towns and cities for clover honey in barrels, for manufacturing purposes.

At present honey is going west in various ways. There is the car-load shipment by the producer, who either has a large crop, or buys from his neighbors to fill out his car. These cars go mostly to jobbers, who resell to retailers, who resell to the consumer. One producer, who is able to make enough sales to retailers in one city, loads a car and consigns it to a commission man in that city, who distributes the orders for a small commission. This seems a very satisfactory arrangement and saves the wholesaler's profits, which are often considerable, as well as the difference in freight rates. The west

is also a dumping ground for carloads of honey bought up by eastern wholesale houses from easy-going beekeepers, afraid of a good crop, or anxious for quick returns. These are sold to the jobber, to the wholesaler, to the retailer, and to the consumer, and a rake-off taken by each party along the line. Then there are the many small shipments from the eastern beekeeper to his old neighbors who have moved out west, and every year want some honey that they know is good.

The great needs of the honey market in all parts of Canada to-day are first, a more uniform price asked by producers; second, a uniformly high quality of the product, put up in cheap but attractive packages; third, standard brands, under which flavor, etc., of honey will never vary; fourth, an all year around supply, and fifth, sufficient advertising to keep honey constantly before the public.

It is a great pity there is no very active selling organization of beekeepers in Ontario. As secretary of the Ontario Beekeepers' Association, I frequently receive enquiries for honey, and am sometimes able to bring buyer and seller together. Just at present some firms who hope to handle large quantities are writing me. If members having honey for sale will send me a list of what they have, I may be able to help them to a sale.

Programme for the Annual Convention

The annual convention of the Ontario Beekeepers' Association will be held November 23-25, in the Carls-Rite Hotel, Toronto, which will also be the convention headquarters. The programme for the convention will be as follows:

Opening Session.

Tuesday Afternoon, Nov. 23rd, 1915, 2 p.m.: Minutes—Morley Pettit, Guelph, Ontario, Sec.-Treas.

President's Address—J. L. Byer, Markham, Ontario.

1st Vice-President's Reply—F. W. Krouse, Guelph, Ontario.

2nd Vice-President's Reply—James Armstrong, Selkirk, Rt. 1.

Address—Dr. E. F. Phillips, in charge of Bee Culture Investigations, U. S. Dept. Agr., Washington, D. C. "Temperature and Humidity in the Hive in Winter."

Tuesday Evening.

Illustrated Lecture—Dr. Phillips. Some Beekeepers of the United States.

Honey Production from the Golden Rods and Asters—F. W. L. Sladen, Dominion Apiarist, Ottawa, Canada.

Wednesday Morning, Nov. 24th.

Outdoor Wintering—H. G. Sibbald, 111 Concord Ave., Toronto, Ont.

Discussion—Alf. T. Haines, Cheltenham, Ont.

Brief Summary of the Year's Work—Morley Pettit, Provincial Apiarist, Guelph, Ontario.

Question Box—Jacob Alpaugh, Stratford, Ont.

Wednesday Afternoon.

Address—Outside Wintering Problems—Dr. Phillips.

Question Box—J. F. Dunn, Ridgeway, Ont.

Election of Officers.

Reports of Committees, etc.

Thursday Morning, Nov. 25th.

Summer Protection and Swarm Control—F. W. Krouse.

Producing Both Comb and Extracted Honey—D. Anguish, Lambeth, Ont.

Question Box—Jno. A. McKinnon, St. Eugene, Ont.

Thursday Afternoon.

Poison Sprays and Their Relation to Bees—Prof. L. Caesar, B. S. A., Provincial Entomologist, Guelph, Ontario.

Modern Apiary Equipment and Buildings—Wm. Elliott, Adelaide, Ont.

Demonstration with some appliances on exhibition—G. A. Deadman, Brussels, Ont.

The Carls-Rite Hotel is situated on Front Street, opposite the Union Station. The rates are reasonable, considering the high class accommodation provided, being as follows: Room without bath, \$2.50 to \$3.00; room with bath, \$3.00 to \$3.50 per day. These rates are on the American plan and include all meals.

Arrangements have been made with the Eastern Canadian Passengers' Association for convention rates on the railroads. Every person attending the convention is requested to purchase a first class full fare one way ticket to the place of meeting, provided the fare is not less than fifty cents, and secure certificate to that effect on standard certificate form, which must be presented to the Secretary at the convention, immediately upon arrival.

British Columbia

The first annual meeting of the Kootenay Beekeepers' Association was held at the city hall, Nelson, on Friday, Sept. 24. There was a representative attendance of members from Nelson and the surrounding districts.

The report is as follows: "The association, organized in September, 1914, is the first beekeepers' association to be formed in British Columbia. Seventy-eight members have been enrolled. Unfortunately the past season has not been a good one for honey production in this section of the province. Exceptionally fine and warm weather prevailed during March and April, when the bees went ahead and promised well, but the following three months, May, June and July, were excessively wet and cold; consequently the clover on which we mainly depend for our surplus honey crop, yielded but little nectar. The honey that has been taken is much darker in color than usual. In many instances the colonies were actually starving in June and would have succumbed had they not been fed with sugar syrup. The honey label adopted by the association for the use of the members to promote uniformity in putting up honey for sale, has met with general approval and 3,825 have been sold to date."

The balance sheet, showing an excess of assets over liabilities of \$43.35, was approved and passed, and the following officers were elected for the year: Hon. president, W. E. Scott, Deputy Minister of Agriculture, Victoria; president, Major-General Lord Aylmer, Queens Bay; vice-presidents, G. E. Parham, superintendent, Dominion Experimental Farm, Invermere; G. Fleming, Nelson; executive committee, J. J. Campbell, Willow Point; Mrs. Casler, J. Hyslop, C. G. Johnson, W. H. Rixen, W. J. Mohr, Nelson; J. Blinco, Creston; B. Lockwood, Fruitvale; E. Alpaugh, Kaslo; R. E. Plewman, Rossland; J. H. Vestrup, Nakusp; H. W. Collins, Grand Forks; H. G. Slater, Westley; T. S. Gill, Cranbrook; G. F. Attree, Queens Bay; James Johnstone, W. Romain, Nelson; A. E. Watts, Wattsburg; Hon. Secretary-Treasurer, W. J. Sheppard, Nelson; hon. auditor, T. M. Rixen, Nelson.



Alpine McAlpine, Inglewood, Ont., in a critical frame of mind.

New Brunswick

H. B. Durst, Woodstock, N. B.

The N. B. Beekeepers' Association has every reason to be proud of the very fine display of honey and bee products which was put on under the auspices of that organization at the Fredericton Exhibition. It was during the exhibition held at Fredericton two years ago that the Beekeepers' Association had its birth. At that time there was on display at the exhibition not more than forty or fifty pounds of honey. At this show we had upwards of fifteen hundred pounds of as good honey as could be produced in the world. A resident of Ottawa remarked to the writer that he had never seen a better display of honey at the Ottawa Fair. Another resident of Ottawa was so well pleased with the appearance of the comb honey that he bought a case and had it shipped to his residence in Ottawa.

Much interest was taken in the live bee demonstrations. The writer handled live bees at all times during the week that the weather permitted. We were accused of all sorts of fake work, because we were able to take the bees up by handfuls and pour them from one hand to the other. Some said the bees were doped; others that they were trained; still others that we had something invisible on our face and hands that prevented the bees from stinging.

The writer plans to carry on some experimental work during the winter, to test out outdoor wintering in various parts of the province. Interest in beekeeping is rapidly increasing, judging from the large number of inquiries for bees that are coming in. Any person having bees for sale should get in touch with the writer at once.

A Successful Settler

Editor The Beekeeper: In the September issue of The Canadian Horticulturist and Beekeeper appeared a picture of Mr. Jas. M. Munro, of Slate River. I served fourteen years as Canadian Government Immigration Agent, and am the original New Ontario man who located people on 480,000 acres of land in New Ontario. Mr. Munro was one of the men I located. I selected his land and paid his money for it, and he

never saw it until he arrived with his family.

At that time I advised him to bring his bees. In 1913 he had six and one-half tons of honey; last year about three tons, and this year about three tons, as it has been a cold, wet year. Mr. Munro has now about seven hundred acres of land. I sold him his first two hundred acres, for five dollars an acre, on ten years' time. He paid for it within five years. It is worth fifty dollars an acre now, and will ultimately be worth two hundred dollars. There is no finer productive soil in Canada.—R. A. Burris, 31 Court Street, Port Arthur, Ont.

An Exhibition of Appliances

Every beekeeper is more or less of an inventor. In fact, the care of bees seems to lend itself to the inventive genius and the number of little devices applied to manipulations of beekeeping is very great. Many of these ideas, worked out into wood and metal, would be of value to beekeepers in general, if they were known, but the most ingenious inventor is often the most reticent, and keeps to himself the results of his ingenuity.

In order to bring these various ideas before the members of the Ontario Beekeepers' Association, we are asking every member to bring to the convention his own pet idea, whether it is a different feeder, bottom-board, bee escape or what not. A special room in the Carls-Rite Hotel, Toronto, the convention headquarters, will be set aside for an exhibit of these devices, and it would add greatly to the value of the exhibit if each one would write out plainly on a card attached to his exhibit, the name and purpose of the article shown.

Now let every member take time to prepare and bring to the convention something which will be of interest to the other members.—Morley Pettit, Secretary.

An Inspector's Troubles

Chas. Blake, Snow Road Station

While out on inspection work last season, I found a great many cases of E.F.B. that had just started to show itself. In one case I told the man that I had called to look over his bees. It was a very nice yard of some thirty hives of dark bees, and all in fine shape. This man understood how to care for them, having had his for some thirty years. He was running his bees for comb honey and had been all through them that spring. He told me that he had no disease in the yard, but I told him that I would have to send in a report anyway, so I might as well look them over. Out of the seven or eight we looked into, we found E.F.B. showing itself in six. He was very much surprised when it was pointed out to him, and could hardly believe that it was any kind of disease, as there were only two or three cells of it showing in the hive; but before we had gone over the yard he could see just how bad it was.

I have always found it to be the case that the man who has never found the disease cannot see much to be afraid of. So few read a bee journal, when a few cells of the brood are found not much notice is taken of them. So many of the pioneer keepers have their bees in hives the frames of which do not fit, it is not often that they are able to see what the inside of a hive looks like.

A home-made frame hive is in most cases no better than the old style box hive. Many beekeepers who make their own hives do not know any more about how to care for the bees than when they used only the old

box. I was surprised to find how many of this kind of beekeeper there are. It was a comfort when the factory-made hive was met with. One can get ahead with the work, even with cross bees and cool days, if the hive is of a kind that can be opened without smashing the bees or having to turn it over to drive all the frames out at once, as I have had to do where the Hoffman frame was used but where it did not fit the hives.

Honey Production

The total production of honey this year in the United States is about twelve per cent. greater than last year, according to reports received September 1.

The total foreign imports during the fiscal year ending June 30, 1915, were 303,965 gallons, valued at \$124,843, compared with 75,079 gallons the previous year, valued at \$38,665, in addition to imports from Porto Rico and Hawaii to the aggregate value of \$130,431, compared with about \$125,000 last year.

The increased imports are from the West Indies and Mexico principally, and result largely from interference with their usual European market as a result of the war abroad. Exports made during the fiscal year ending June 30, 1915, were valued at \$114,038, compared with \$136,000 for the previous year.

Honey for the Soldiers

In reply to a circular letter sent to the members of the Ontario Beekeepers' Association by the secretary many donations of honey for the soldiers have been sent to the Red Cross. As the donations are being handled by the headquarters of the Red Cross at Toronto the exact amount contributed is as yet unknown. A letter received by the secretary would indicate that the beekeepers are upholding their traditions and are responding very liberally. A few beekeepers that produce only comb honey have contributed their little bits by sending cash donations to purchase honey. We appreciate their generosity, but the lads at the front will show much greater appreciation.—Geo. F. Kingsmille, Guelph.

Willing to Send Honey

Editor The Beekeeper: On page 238 of The Canadian Horticulture and Beekeeper there is an article asking the beekeepers to contribute honey for the soldiers that are lying wounded in England. Below that you say that the Brant County Beekeepers had decided to donate a half-ton. I do not find anything about the Simcoe County Beekeepers' Association. Some time early in September our reeve received a letter telling him that one Association wanted to send a ton to our boys that are wounded in England. He passed it on to me and said he was sending thirty pounds. I sent sixty pounds to Mr. Couse, Cookstown, but he has not said that he has received. I have more honey for the boys, so has Mr. Walker, but we want those who handle it to acknowledge our gift before we send another.

Yours truly,

A. BUCKINDALE,

Hawkestone, Ont.

Note.—The address of Mr. Couse is Streetsville, not Cookstown. The honey is being sent forward by the Red Cross Society, Toronto.—Editor.

The success of next year's operations will depend in a large measure on the condition in which the bees went into winter quarters this fall.

An Analysis of Apple Market Conditions

E. F. Palmer, Sales Manager, The Co-operative Fruit Growers of Ontario, Limited

THE unusual factors which are attending the marketing of this year's crop of apples, are making the situation full of interest. While there is not the panic that prevailed a year ago, there are other influences at work which require that we shall use our best judgment and all the powers within our reach, if we hope to obtain maximum returns.

Initial Shipments.

Early shipments of fall apples from Maryland and Virginia sold at such satisfactory figures on the Old Country markets that they gave reason to expect a remarkably good market there for apples this year. These shipments, however, arrived in good condition, and on that account probably realized top market prices. Growers in Ontario, judging from the returns of these United States shipments, looked for good markets in the Old Country for Ontario apples. These expectations have been justified by the prices obtained for such fruit as we have been able to land in good condition.

The difficulty has been to land a large enough percentage of the apples there in good enough shape to command returns on a par with prices in the Canadian west.

This difficulty of the fruit arriving in good condition has been due to two or three factors. First, the weather at the time fall apples were being packed in Ontario was very warm for a considerable time. Apples picked and packed during such weather are bound to be in poor shape on arrival. Second, the ocean boat service has been poor. Many of the apples so far exported have had to go by very slow boats, boats which under ordinary trade conditions would not be used for carrying perishable products such as apples, unless in cold storage.

Some Good Sales.

A few shipments of early winter apples have arrived in excellent condition. The prices realized on them have been good. Ontario Kings, No. 1's, shipped on the Pretorian for Glasgow, sold for 28s to 35s; Ribstons, 26s; Greenings, 23s 6d. In Liverpool the market has not been so good. From London the report is that the demand for Canadian apples is not so brisk, owing to there being too many English apples on the market.

Indications are that certain of the Old Country cities are good markets at present, and all of them are likely to be good later on, providing the fruit arrives in good condition. This factor is the big difficulty with Old Country shipments this year. It is difficult to get service across the ocean that will ensure the arrival of shipments in good order. Prices realized in the Old Country need to be very good to warrant the risk and expense of shipping over there, as home prices and prices in the Prairie Provinces are very satisfactory.

The Western Demand.

The demand in the Canadian west has fallen off to some extent during September, owing chiefly to the unfavorable weather experienced there during threshing time. Threshing operations have been greatly delayed in consequence. The weather has been better of late so Ontario shippers may look for an increased demand from this market shortly.

A somewhat peculiar condition exists in the west. The grain growers' organizations are contracting for apples of good quality wherever they can get them, and at good prices. The wholesalers do not seem anxious to buy except at prices which Ontario shippers are not justified in accepting. The rea-

son for this probably is that the grain growers' organizations can supply their members with apples considerably cheaper than the wholesalers can supply them for, as the wholesalers have to make a profit on their sales.

The farmers' organizations supply their members practically at cost. As both have to pay practically the same price for the apples f.o.b. shipping points, the position is a difficult one for the wholesalers. A report has come through that the fruit merchants in the west have in some localities started a rumor that the grain growers' organizations have not been able to contract with Ontario shippers for any cars of apples. We do not vouch for the truth of this statement, though it is known that the grain growers' organizations cannot get as many apples of the varieties and grades required as they need.

Ontario Apple Crop.

Unfavorable weather conditions have induced the development of a great amount of apple scab throughout Ontario. It is likely that the grade of the crop has been reduced fully 40 per cent. from apple scab in many, if not all, sections. Shipping associations are finding it extremely difficult to fill orders taken for cars of grades one and two, standard winter varieties. In many cases these associations, on the strength of prospects six weeks ago, took orders for practically their entire pack, not expecting the late development of scab. It is extremely likely, therefore, that considerable No. 3's will have to be packed to fill these orders. No. 3's this season should be an excellent pack for this grade of fruit, as the apples are of good size, fair color and of good keeping quality, the only drawback being the scab infestation.

There would seem to be ample room in the middle west provinces to work up a considerable trade amongst the farmers, as well as in the cities, with this class of fruit, which is practically No. 1 fruit in every way except for scab. The problem is to get this fruit into the west in such a form that it can be sold to the consumer there at as good a price as he ordinarily has to pay for No. 3 apples, which No. 3 apples are usually of poorer quality than these slightly scabby No. 3's are this year.

Open Crates Being Used.

With a view to getting apples to the consumer with the least possible expense, British Columbia shippers have adopted an open crate for shipping apples "shuffle pack." This crate is cheaper than the ordinary apple box and also there is practically no expense in packing the fruit. The Co-operative Fruit Growers of Ontario, Limited, have also adopted a somewhat similar crate, holding practically the same quantity of fruit as the standard apple box. The advantages of such a crate over the barrel for shipping a grade of fruit which has every appearance of being No. 1 fruit, except for occasional scab spots, are, first—that the fruit, which can be readily seen from the outside of the package, is sold on its merits. If this class of apples were put in barrels, it would have to be stencilled No. 3 in accordance with the Fruit Marks Act, and the mere fact of the barrel having this No. 3 on it, immediately brings the selling value of the barrel down to that which ordinary No. 3's are worth.

Another advantage is that the box is a better carrier than the barrel. There is less bulk of fruit and there is better circulation of air. The barrel is a tight, close package,

and if the apples are packed at all warm or if they sweat in the barrels as they are likely to do, the apple scab will develop rapidly. The free air circulation which the slatted crate allows, greatly reduces the chance of the apple scab spreading.

A third point in favor of this packing is that the same quality of No. 3's in boxes, as in barrels, can be sold probably 30c per barrel cheaper packed in boxes, as the package is cheaper and the packing practically amounts to nothing as compared with the barrel. The consumer, therefore, can get his apples that much cheaper. As he can see what he is getting; he is almost sure to get a better quality fruit than in the No. 3 barrel, and at the same time the grower is receiving back better value for his fruit than if it had been put in barrels and marked No. 3.

Okanagan Valley, North, B.C.

Chas. Webster, Armstrong, B.C.

Our early tree fruits, cherries and plums, moved at low prices, particularly plums. Peaches are not a commercial crop in this end of the valley. Apples and pears show great improvement. In the north valley, however, good apples are not plentiful; a rainy summer and sadly relaxed care of orchards resulted in a serious infestation of scab. Maw and Sons, of Armstrong, who have considerable acreage in orchard, by thorough and timely spraying grew a splendidly clean crop.

The Economy crate, made of slats with inside edges bevelled, is proving a great success. Robert Hood, president of the local Fruit Growers' Association, was an ardent advocate of this crate principle for shipping other than No. 1 apples, and kinds of only cooking quality. Prairie consumers evidently appreciate seeing what they buy. It has been demonstrated that "too much wrapping paper" is possible.

The demand for vegetables has fallen off seriously this year. North Okanagan points have been heavy producers of vegetables.

The produce firm of Daykin & Jackson has lately made an assignment.

W. E. Dabney, now manager of the local branch of the Okanagan United Growers, came from "across the line." His capability for "hustling" is up to the standard of his countrymen.

The management of the Armstrong and Spallumcheen fair, held Sept. 28th and 29th, are to be congratulated on the finest exhibition ever held here. It is claimed that there were over a thousand more entries than a year ago. Apples were nearly as numerous as ever. Varieties susceptible to scab were less shown, particularly McIntosh, Snow and Spy. Pears were shown in greater number and perfection than ever. Grapes of local growth made an interesting exhibit.

The Indians of the Okanagan reserve were persuaded to make a representative exhibit. Their exhibit would have been hard to beat anywhere. W. E. Scott, Deputy Minister of Agriculture, bought the whole exhibit and had it shipped to Victoria.

Apples for South Africa

W. J. Egan, Canadian Trade Commissioner, Cape Town, S.A.

The exporters of Canadian apples will soon be making their first shipments and preparing for the larger shipments at the end of October and first of November. It may be well to suggest that great care must be exercised in the selection of fruit for the South African market, as there are strin-

gent regulations in force and all shipments receive a strict examination by the South African Government officials.

The season of arrival here for the Canadian apple is a very favorable one, as during October, November and December the market is almost empty of apples, and good prices are usually realized. It is understood that arrangements are fairly complete for the coming season's shipments, but as there may be some new shippers consigning for the first time, it is best to state that the apple which meets with most favor on this market is a hardy, well-colored red apple, medium size, grade one and two. Attention is directed once more to the law in South Africa re imported apples. The fruit must be sound and healthy in every way, or it is not admitted into the country.

A Danish Fruit Grower

Readers of *The Canadian Horticulturist* may be found in many foreign countries. One of them is Mr. Hans Rasmussen, of "Progress," Denmark. In a recent letter to *The Canadian Horticulturist*, Mr. Rasmussen wrote us as follows:

My farm is twenty-six acres, of which ten acres is planted in fruit, mostly apples, the principal sort being Cox Orange. A couple of hundred trees are planted of a local variety, Peterstrop Keinetta. This sort has shown more resisting power against disease, canker, etc., than sorts imported from foreign countries. One and a half acres is in raspberries (red). Some of them are planted between fruit trees, as shown in the accompanying illustration. Two acres are in black and red currants (the first pickings are shipped to England), three-quarters of an acre in gooseberries, one and a quarter acre in strawberries, and one and a half acres in asparagus. The asparagus is sold to the canning factory at an average of eleven cents a pound.

Last year my income from the sale of asparagus amounted to four hundred dollars an acre. The asparagus market requires white shoots. The plants are set one and a half feet apart in the row, and the rows are six feet apart. In the spring the plants, or the rows, are covered with the adjoining mould to a depth of ten inches, in order to secure white shoots of a length of eight to nine inches. The shoots are cut twice each day, to avoid the heads getting colored by the sun and air by growing above ground.

We also grow some hazelnuts, 1,110

bushes, some of which are planted between fruit trees, and some along the walks, as can be seen to the left in the illustration. In about four acres we grow garden and flower seed, including carrot, aster, viola, clarkia, etc. A plot is used for raising roots of lily-of-the-valley. A co-operative association has been organized for the sale of the roots. They are shipped to England.

Regarding the illustration: From the left hand side is seen, first, myself; second, my wife; third, our son; fourth, our daughter; fifth, our son (now in the United States); sixth, seventh eighth and ninth, pupils; tenth, our daughter; eleventh, teacher; twelfth, pupil.

My farm is acknowledged by the Government of Agriculture as a suitable one for young folks to learn fruit growing and gardening. I receive from the Government about thirty-three dollars for each pupil, male or female, who has attended an agricultural college or any other notable school, and who stays here at least six months. To fully understand this, I may add a few words of further explanation. Without going into details, I may state that much is being done to help people to obtain a piece of land, and not only to get hold of a tract, but also to teach these people how to use and till the ground, in order to be able to make a fair living on a small tract, say six to ten acres. As fruit growing and gardening realizes more money than ordinary farming, the Government gives aid to movements working toward this goal. The price of farm land, without buildings, is frequently two hundred dollars an acre.

Tomatoes from Canada

Claude Dyer, Canadian Commercial Agent

A noticeable feature of the window displays in some of the better class grocery stores in the Leeds district, England, has been canned tomatoes of Canadian canning. Taking advantage of the interruption to supplies from Italy, canning companies in Ontario have sent forward shipments of canned tomatoes to the English market.

This development is all the more interesting in view of the information which has been furnished in former reports calling attention to the opportunity for Canadian canners, in view of the likely curtailment of the Italian supply, owing to causes arising out of the war.

Douglas Gardens

OAKVILLE, ONT.

At the date of writing (15th Oct.) the following named plants are showing good bloom, viz.:

BEDDING PLANTS—

Antirrhinums—"Silver Pink."
Pansies.
Salvia—"Bonfire."

PERENNIALS—

Coreopsis—(Second Crop).
Delphiniums—(Second Crop).
Echinacea—(Rudbeckia) purpurea.
Gaillardia.
Hardy Asters—Nos. 22, 23, 26, 34 and 40.
Helenium—4 sorts.
Holly Hocks.
Kniphofia—"Pfitzeri."
Phlox—"Miss Lingard" (Second crop) "Jeanne d'Arc."
Shasta Daisies.
Veronica Spicata.

Garden makers would do well to keep these plants in mind for late bloom.

JOHN CAVERS

Items of Interest

A letter received by *The Canadian Horticulturist* from the firm of A. W. Kirkebye, of Copenhagen, Denmark, states that there is a large crop of Danish pears this year, but that the apple crop is much below a medium one, and that prospects of selling Canadian apples there this season should be good.

The apple crop of the Wenatchee Valley, Washington State, has been seriously damaged by the Codling Moth. Infected apples, packed in half-barrel crates, are being sold in the middle west at seventy-five cents a crate. The sale of this fruit is being vigorously condemned by leading fruit growers of that district, who are urging the authorities to enforce the law prohibiting the sale and shipment of infected fruit.

An interesting display of tropical plants was made at the recent Picton, Ontario, exhibition by Mr. W. G. Ross, the secretary of the Picton Horticultural Society. It included a banana tree which had been grown in his office. Mr. Ross has grown orange and lemon plants, as well as figs, without the aid of a conservatory.

In connection with the campaign conducted by the Dominion Department of Agriculture to advertise peaches and plums a meeting was held by the grocers in Ottawa, who decided that it would be better to spend the money in display advertising than to use it, as had been at first proposed, in the offering of prizes for window displays. The grocers pledged themselves to dress their windows and to make as attractive displays of fruit as possible, provided the Department would conduct the additional display advertising.



The orchard of a faithful reader of *The Canadian Horticulturist*, Hans Rasmussen, of Progress, Denmark. The farm comprises 26 acres, of which 10 acres are in fruit. It is one of the largest fruit farms in Denmark. A description of it is published on this page.

Fruit Growing Developing in Quebec

Fruit growing in the Province of Quebec has made considerable strides during the past ten years. Owing to the fact that there are districts where no fruit growing has

been attempted and where it is desired to establish this industry and other districts where the industry already exists but where it must be improved from a purely commercial point of view, the methods of instruction necessarily vary, in accordance with the requirements. The following have been established by the Department of Agriculture.

(1) Experimental Fields, in charge of good farmers, in districts where the climate is very severe and where several attempts to establish an orchard have already failed. These farmers are supplied with the hardiest varieties, over which a close watch is kept. There are now four of these experimental fields.

(2) Fruit Stations, the object of which is to teach the farmers the proper methods for the establishment, the cultivation and the management of an orchard. These stations are in charge of farmers who desire to grow fruit and who pledge themselves, by contract with the department, for a period of five years, at an annual rental of twenty-five dollars, to give their whole attention, free of charge, to the scientific management of the orchard established on their land, in order to collect the greatest possible amount of useful data for the fruit growers of their district. At the end of the five-year period, the department keeps ten per cent. of trees and shrubs originating from the scions that have succeeded. It also reserves the right to purchase the fruit of the said orchards in whole or in part for experimental purposes, exhibitions and packing demonstrations at the market price.

There are now thirty-eight of these stations, situated in different parts of the province, and they cover a total area of eighty-five acres. They are equipped with pruning instruments, spraying machines and spraying solutions. There were sent to these stations, this year, 550 lbs. of lead arsenate, 185 gallons of lime-sulphur wash and 15 lbs. of sulphate of nicotine (blackleaf 40). Some of the stations are drained and all are protected from trespassers by special fences.

(3) Demonstration Orchards, for teaching scientific methods of cultivation and showing the care with which the operations should be performed in order to market only first class fruit. These orchards are supposed to serve as models for the fruit growers of each locality. There are now seven of them covering a total area of 33½ acres.

The annual expenditure made by the department must not exceed the sum of \$500, including the annual rental of twenty-five dollars an acre, cost of building fences, cost of fertilizers, spraying solutions or chemicals necessary for the making of the same, leguminous seeds, 800 lbs. of chemical fertilizers, ten tons of farmyard manure per acre, and all necessary implements for the culture and the management of the orchard.

On the other hand, the owner is bound by contract to do all the work in accordance with a special program prepared by the department and which may be summarized as follows: he must, at his own expense, spread the manure, cultivate the soil, plow under leguminous crop, prune the trees, spray at least four times during the season, thin the fruit, pick the fruit by hand and pack it—the whole in accordance with the instructions of the superintendent of demonstration orchards.

The owner is entitled to the whole crop of fruit, but the department reserves the right to purchase this crop in whole or in part at the market price. Two of these

demonstration orchards are now using grading machines; one of them has a cold storage warehouse and all are equipped with automatic pumps.

The results so far obtained have been so satisfactory that fruit growing has made progress in the whole province. Not only are the farmers now establishing orchards or renovating those that they have already, but everywhere they are organizing new horticultural societies or co-operative associations in order to improve, increase and market the produce.

In all the horticultural exhibitions held this year a marked improvement could be noticed by comparison with the previous years in the appearance, the grading and the packing of the fruit. In order to facilitate the destruction of insect pests, the Minister offered last year, to the agricultural societies of the province, the advantage of securing, at exceptionally favorable terms, the spraying material they might need.

Grade Your Potatoes

Money may often be made by the sorting of potatoes. Consumers, large and small, do not like mixed lots. They want them uniform in size and quality. Consequently potatoes should, if possible, be sorted before being put on the market. The price which is paid the potato grower is the price of sorted potatoes, less the cost of sorting. The potato-grower who ships unsorted potatoes really has to pay the charge of sorting.

The shipper of unsorted potatoes has to pay another charge also, and that is the freight on the culls which are later taken out of his shipment. The shipper of unsorted potatoes, therefore, is simply wasting money. It pays to sort because it gives one the top market prices and because it saves freight on culls, and, it might be added, because the culls, in many cases, could be kept on the farm and made use of in rations for live stock.

Nova Scotia

Only six cases of the dreaded San Jose Scale in Nova Scotia orchards have been located this year by the provincial inspectors, according to Prof. W. H. Brittain, of the College of Agriculture and Provincial Entomologist. It is a noticeable fact that the six cases were found on stock imported previous to the inauguration of the government inspection over nursery importations in 1912. Not a single case of the San Jose Scale has been found on stock imported subsequent to that date. The comparative figures are very striking. In 1912, there were discovered 750 cases; in 1913, 64 cases; in 1914, only four cases, and in 1915, so far, only six cases, and all on stock imported prior to 1912.

Potato Inspection.

Inspection of the Truro and Cornwallis districts Garnet Chili potato fields was made recently by Mr. E. J. Wortley, Director of Agriculture for Bermuda, Prof. W. H. Brittain, representing the Provincial Government, and Messrs. S. J. Moore, Dominion Seed Inspector, and Paul A. Murphy, Dominion Plant Pathologist, representing the Federal Government. According to Mr. Wortley, the inspection revealed the fact that the Nova Scotia potato growers have learned a lesson from past experiences, and that by the use of rigidly selected seed and regular spraying they can save their potato crops from being condemned.

THE BEEKEEPERS' DIRECTORY

The following beekeepers will be able to supply Bees and Queens in any quantity for the season of 1916. Order early.

E. E. MOTT,
Glenwood, Mich.
Northern Bred Italian Queens.

J. P. MOORE,
Morgan, Ky.
Try Moore's Strain Next Year.

W. R. STIRLING,
Ridgetown, Ont.
Fine Italian Queens.

J. I. BANKS,
Dowelltown, Tenn.
Italian "Queens of Quality."

P. TEMPLE,
438 Gladstone Ave., Toronto, Ont.
Canadian Bred Italian Stock.

THE DERROY TAYLOR CO.,
Newark, N.Y.
Northern Bred Italian Bees and Queens.

M. C. BERRY & CO.,
Successors to Brown & Berry,
Hayneville, Ala.
Best bred Italian Queens and Bees.

THE PENN COMPANY,
Penn, Miss.
Bees and Queens.

F. W. JONES,
Bedford, Que.
Bees by the pound, also best Italian Queens.

H. C. CLEMONS,
Boyd, Ky.
Three band Italians bred for business.

THE ROOT CANADIAN HOUSE,
185 Wright Ave., Toronto, Ont.
Canadian and U.S.A. bred queens and bees. Bees by the pound or colony.

A. E. CRANDALL & SON,
Berlin, Conn.
"Quality" Italian Queens.

JOHN A. MCKINNON,
St. Eugene, Ont.
Best northern bred stock.

WM. ATCHLEY,
of Mathis, Texas.
Wants to sell you your early bees by the pound. Queens in season.

STOVER APIARIES
Mayhew, Miss.
Not a single complaint.

Niagara District Notes

F. G. H. Pattison, Winona

FOR the past week the Niagara District has been enjoying a spell of delightful weather, warm and sunny in the day and not too cool at night. This has come as a great boon to the grape-growers, who were beginning to fear that a large proportion of their grapes would not ripen. The former long continued cool weather, together with the very heavy growth of foliage seriously retarded the ripening of grapes, which had the bad effect of causing an unusual quantity of unripe, or only partially ripened grapes to be shipped, especially to distant markets.

Were the Niagara District thoroughly organized, as it should be, with a central selling organization controlling 65 to 75 per cent. of the grape crop, it would be possible to prevent the sale of unripe grapes entirely. It would also be feasible to standardize grape prices, at all events for Niagaras and Concords, the two great commercial varieties. A standard price, not varying more than one or two cents a pound throughout the season, would do away with the inducement to ship unripe grapes, and would thus abolish the present absurd anomaly of dealers and others being ready to pay a much higher price for grapes unfit for consumption than they are for grapes when sweet and wholesome.

The slow ripening of grapes had the effect of raising the price and for some time whites and blues were selling out at from 16c to 18c a pound in car lots, and in some markets were netting those who shipped on commission from 22c to 25c. Reds sold out at 22c to 25c, and still higher on commission. The Hamilton and St. Catharines open market price was 20c to 25c per small basket.

Now buyers are paying 12c to 13c for blues and whites, and 16c to 18c for reds. The latter are only fair in quality, having suffered much from mildew, thousands of baskets not being fit to pick due to this cause.

Grape juice men have been offering as high as 38 to \$40 per ton for Concord grapes nicely picked, and wine men \$34.

In the Erie and Chautauqua belt in New York state, the grape crop this season is away below the average, being estimated at only 50 per cent. of that of 1914.

Work at the Welch Grape Juice factory in St. Catharines is at its height now, and will remain so for about four weeks. This company is very particular as to the quality of its grapes, they must be "sweet and ripe," nothing else will pass. In order to induce growers to bring their best, the company pay more than the ordinary market price, they have been paying from \$38 to \$40 a ton and they expect to use 600 tons. Manager Childs believes they turn out a better quality of grape juice here than they do in the states. Recently he bought 100 tons of grapes in the Beamsville and Grimsby neighborhood, as to which he says: "I consider the grapes there are of a finer quality than we get in the great grape growing district of Chautauqua County, N.Y."

The Process.

After the grapes have been inspected they are put through large modern pasteurizers. By the means of an electric conveyor they are thoroughly washed in transit and put into large kettles, where they are cleaned and stemmed. Then they are formed into large cheeses and these are placed in hydraulic presses from which the juice runs into the process kettle which cooks it.

After being strained several times the juice is run into glass carboys and stocked away. After the grapes are received at the landing platform they never again touch the hands of an attendant. Everything is done by machinery, which is thoroughly sterilized before and after it is used. This company has an extremely modern washing, sterilizing, and drying apparatus.

About fifty men are at present employed by the company, but they expect to greatly extend their plant in a few years, and will both employ more men and purchase far more grapes. It is hardly necessary to point out what a benefit this company is likely to prove to the grape-growers of the district. Already they have had an appreciable effect on the steadying of grape prices.

The frosts that occurred during the nights of October 23rd and 24th, did a considerable amount of harm to vineyards that had previously been defoliated, but the great bulk of the vineyards below the mountain suffered little or no damage. Grapes have been freely rushed to market of late, and a large proportion of the crop is beyond the reach of frost.

West of St. Catharines the apple crop of the district and surrounding country is pretty fair, but east of St. Catharines it is very light. Greenings, snows and russets are the best. Baldwins and spys are light in most orchards and there is a good deal of scab and some ink-spot. The latter is prevalent on pears this season.

Practically all the pears are gone now, except Keifers, which are a fair crop and are selling well. Canning factories are paying three-quarters of a cent per pound for them, but the shipping market has been giving better net returns than that.

The spread of rust in black currants is likely to be a serious matter for the fruit-growers. It appears that this rust dies out in the black currant during the winter, but is carried over in the white pine which acts as a host for the disease. In the spring the currants get re-infected and the disease

Notice to Beekeepers.

Customers will please note that our special Winter discounts and terms on all lines of Beekeepers' Supplies commence November first. Beekeepers would do well to take advantage of these offers, not only on account of the saving, but the satisfaction of having their appliances ready for the bee season when it opens. Now is also the best time to order goods that have to be made especially. We are anticipating a busy season and desire to give our beekeeping friends the best possible service.

THE HAM & NOTT CO., Ltd.
Mfgs. Beekeepers' Supplies
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CHAS. E. HOPPER & CO.

BEEWARE

126 Simcoe St., Toronto, Ont.

The Beekeepers' Review

THE BEEKEEPERS' REVIEW, 15 months for a dollar to Canadian subscribers, postage free. Beginning with the October, 1915, number and ending with the December, 1916, number. A rare bargain. If you want Gleanings in Bee Culture a year clubbed with the Review, send along 80c. additional. Both postpaid. Review 15 months and American Bee Journal one year, both \$1.60, postpaid. All three for \$2.40, postpaid. To get this liberal clubbing rate, address all orders to THE BEEKEEPERS' REVIEW, Northstar, Michigan, U.S.A. Kindly remit by postal note and oblige.

The Beekeepers' Review, Northstar, Michigan

When good queens are wanted I have the goods. Pure Italians from imported mothers. Also pure Carniolans and Caucasians from imported mothers. 75c each, \$8.00 per dozen. No disease.

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185 Wright Ave. TORONTO, ONT.

Quality counts. Try our Queens; three banded, golden Carniolans or Caucasian, from best U.S.A. breeders; also from our own yards. Everything in Bee Supplies, Root's Goods; also "Made in Canada" Bee Journals and Books. Catalogue Free.

A New Bee Book Entitled BEEKEEPING

By Dr. E. F. Phillips, of the United States Department of Agriculture. 435 pages of interesting reading, with numerous illustrations, by an established authority.

Regular price \$2.00 (postage extra)
(Mailing weight 2 lbs.)

By special arrangement we can offer this book, postpaid, with a year's subscription to American Bee Journal, both for \$2.50.
(Canadian postage 15c. extra.)

AMERICAN BEE JOURNAL, Hamilton, Illinois

spreads with lightning-like rapidity. It also attacks red currants and gooseberries, but the results are not so serious on them. Spraying with bordeaux helps to some degree, but is by no means a specific. The extermination of the white pine adjacent to the fruit belt appears to be the only sure remedy.

P. Falconbridge, who died in Leamington on October 10th, was engaged in the fruit business in Grimsby for fifteen years before he went to Leamington about three years ago as manager of the Erie Co-operative Fruit Company, which position he filled for two years. Last December he organized the Essex Fruit Growers' Fruit Co., of which he was manager until his death.

The branch of the Dominion Canning Co., at Niagara-on-the-Lake, closed down last week after the shortest season it has ever had.

According to Provincial Inspector Biggar, the number of peach trees affected with yellow or little peach is again greatly reduced in number this year. They are not expected to exceed 1,500 or 2,000 at the most.

The first car load of fruit raised by the Canadian Club Fruit campaign at St. Catharines was shipped recently from the local headquarters to Montreal for shipment to

Great Britain. This car load consisted of 450 cases, each containing a dozen 12-quart sealers of fruit. The weight of each case was 60 pounds, which brought the total weight to the large amount of 27,000 lbs. Each case is securely packed.

The Vineland Canning Company is being wound up. The buildings and plant are represented as having a fixed value of \$168,960.74, but the real value is estimated at about half of that. Its stock of canned goods was hypothecated to the Imperial Bank.

When the 35th battalion left Niagara for the front, it was presented with 150 baskets of delicious grapes by local fruit growers. These were shipped on the Toronto steamer and were to be distributed to the men on the train en route to Montreal.

Inspector Elliott has notified the St. Catharines Park Committee that about 250 shade trees throughout the city are infected with San Jose Scale and that it is necessary for the council to have the trees sprayed this year at an estimated cost of \$200.

Beamsville fruit dealers have sent a letter of protest to G. E. McIntosh, of Forest, transportation agent of the Ontario Fruit Growers' Association, in reference to the lack of accommodation at the Hamilton,

Grimsby, and Beamsville Electric road's shipping platforms. The dealers claim that while the Dominion Express Company wants their business, the railway makes no effort to provide the necessary space or decent shipping facilities. In the busy season the present quarters are not half adequate to do business properly. They are also asking for a freight yard, instead of loading cars along the main street. Although the fruit shed at the G. T. R. is a long one, yet the shipments at different times this season overcrowded it, and in the same petition the G. T. R. has been asked to increase its platform space at this shipping point.

Up to Saturday, October 16th, the number of loaded express and refrigerator cars of fruit leaving the new station of Vineland this season was about 267. This is the station the G. T. R. refused for a long time to build on the ground that there would not be enough business to warrant its erection.

The grape crop in the Erie and Chautauqua belt, in New York state, extending over a territory of more than sixty miles, is estimated on good authority at only fifty per cent. of an average crop.

The annual convention of the Ontario Fruit Growers' Association, which for several years past has been held in November, will be held this year early in January. There will be an unusually complete program and an exhibit of fruits from the Experimental Stations. This change was decided upon at the last meeting of the directors of the Association, the idea being to secure a larger attendance at a time when the growers were not so busy as in November.

Ontario Horticultural Convention

The annual convention of the Ontario Horticultural Association will be held in the Railway Committee Rooms, Parliament Buildings, Toronto, on Wednesday and Thursday, November 10th and 11th. The programme is as follows:—

First Session.

10.30 a.m.—President's Address. J. H. Bennett, Barrie.

10.50 a.m.—Treasurer's Report. C. A. Hesson, St. Catharines.

11.00 a.m.—Report of Superintendent. J. Lockie Wilson.

11.30 a.m.—General discussion on reports and on matters pertaining to work of Horticultural societies. Opened by R. B. Whyte, Ottawa.

12.00 noon.—"Informal Planting of the Home Grounds." Miss Yates, Port Credit.

12.30 p.m.—Round table luncheon.

1.15 p.m.—3-minute addresses.

Afternoon Session.

2.15 p.m.—"Beautification of Country Homes and Rural Improvement." R. A. Penhale, St. Thomas.

2.30 p.m.—Addresses by Fraternal Delegates. American Civic and Kindred Associations.

3.00 p.m.—"Rose Growing from an Amateur's Standpoint." W. G. MacKendrick, Toronto.

3.45 p.m.—"Gardeners' Troubles." Maurice Fauld, New York.

4.15 p.m.—Discussion.

4.30 p.m.—"Horticulture in the Northland." Mrs. Lorne McDougall, Halleybury.

5.00 p.m.—"Notes on New Plants, and Plants not Well Known." Wm. Hunt, O. A. C., Guelph.

8.00 p.m.—"Wild Gardens." (Illustrated). W. H. Child, Hamilton.

8.30 p.m.—"Town Planning from a Horticultural Standpoint." Thos. Adams, Conservation Commission, Ottawa.

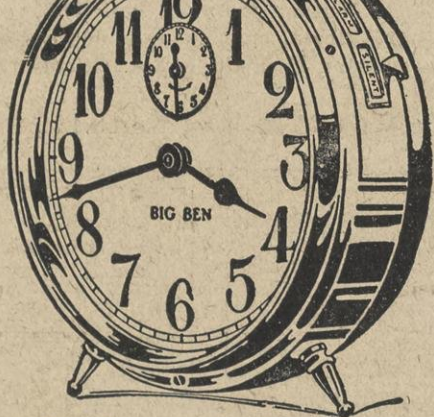


SMALL FRUIT PLANTS

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

WM. FLEMING, Nurseryman, 496-4th Avenue W., OWEN SOUND, ONT.

Big Ben



You set the hour—he'll wake you up

If it's *two-thirty* to get the milk to town, he calls you right on the dot. If it's *five o'clock* when work is light, Big Ben lets you get the extra sleep.

Dodge him around—*two* today—*five* tomorrow—give him a thorough try-out. Any hour

you say suits Big Ben. Just arrange it with him at bed time.

It's his business to get you up on time and he does it loyally—punctually—cheerfully. He stands seven inches tall; has great, strong keys that make him easy to wind; a big, deep-toned gong that makes him pleasing to hear—a round, jolly face that makes him easy to read.

If your dealer hasn't him, a money order addressed to his makers, Westclox, La Salle, Illinois, will bring him to you postpaid. \$2.50 in the States—in Canada, \$3.00

Morning Session, Thursday, Nov. 11th.

9.00 a.m.—Reports of Committees and Notices of Motion.

9.30 a.m.—Nomination of Officers and Directors.

10.00 a.m.—“The History, Development and Propagation of the Lilac.” John Dunbar, Assistant Superintendent of Parks, Rochester, N.Y.

10.30 a.m.—Discussion.

11.00 a.m.—Report of Committee on Names and Varieties.

11.30 a.m.—Report of Delegates to American Civic Association's Convention. Rev. A. H. Scott, and W. B. Burgoyne.

12.30 p.m.—Round Table Luncheon.

1.15 p.m.—3-minute Addresses.

Afternoon Session.

2.00 p.m.—Election of Officers and Directors.

2.20 p.m.—“Vacant Lot Gardening.” Geo. Baldwin, Toronto.

2.50 p.m.—Discussion.

3.00 p.m.—“California in Summer from a Horticultural Standpoint.” Prof. Macoun, Ottawa.

Patriotic Fruit Growers

Throughout Canada fruit growers are showing their patriotism by sending forward large quantities of fruit to the soldiers at the front. The Quebec branch of the Navy League is sending a supply of Canadian fruits to the sailors on board the war ships in the North Sea. Many fruit growers are furnishing fruit for this purpose.

The Ontario Department of Agriculture has undertaken to send from the Horticultural Experiment Station at Vineland, some 20,000 gallon tins of preserved peaches. This will go largely to the men in the Hospitals. Already several hundred boxes of apples have been forwarded by the Department, the intention being to send possibly 5,000 boxes or more during the winter months.

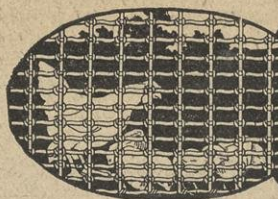
Leading fruit districts in British Columbia, such as Summerland, Naramata, Peachland, Kelowna, and Penticton are forwarding large quantities of fruit under the auspices of the Okanagan Woman's Patriotic Society, assisted by the United Growers. Some points are sending as much as a car of 600 boxes. That these donations will be appreciated by those who receive them goes without saying.

A Distribution of Seed Potatoes

By instructions of the Dominion Minister of Agriculture a free distribution of superior sorts of potatoes in three pound samples will be made during the coming winter and spring. The samples will be sent out from several of the Experimental Farms, the Central Farm at Ottawa supplying only the provinces of Ontario and Quebec.

Each application must be separate and must be signed by the applicant. Only one sample of potatoes can be sent to each farm. Applications on any kind of printed form cannot be accepted. Requests forwarded after the end of December will probably be too late. Samples will not be sent in response to applications (no matter when received) which fail to state clearly the needs of the applicant, his experiences in crop-raising, and the character of the soil on which he intends to sow the seed.

All applications for potatoes should be addressed to the Dominion Cerealists, Central Experimental Farm, Ottawa. Such applications require no postage. If otherwise addressed, delay and disappointment may occur. Applications for potatoes from farmers in any other province should be addressed (postage prepaid) to the Superintendent of the nearest branch Experimental Farm in that province.

**PEERLESS POULTRY FENCE****A Real Fence—Not Netting**

Strongly made and closely spaced—making it a complete barrier against large animals as well as small poultry. Top and bottom wires No. 9—intermediates No. 12 wire—made by the Open Hearth process which time and other tests have proven to be the best. Send for catalog. Ask about our farm and ornamental fencing. Agencies nearly everywhere. Agents wanted in unassigned territory. The Banwell-Hoxie Wire Fence Company, Ltd., Winnipeg, Man., Hamilton, Ont.



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Northern Grown Fruit Trees for Northern Planters

Look for a view of a section of our Nurseries in this issue.

Specialties—Crimson Beauty, North Star, Wealthy and Stark Apples; Black Champion Currant.

ALBERT NURSERIES.**Albert, New Brunswick****BULBS For Planting Now.**

We can still offer good stock of the following varieties:

Single Mixed Tulips, \$1.00 per 100 postpaid.

Double Mixed Tulips, \$1.25 per 100, postpaid.

Darwin Tulips, Mixed Colors, \$1.50 per 100 postpaid.

Hyacinths for Pots, or Outside Bedding, 45c. doz., \$3.00 per 100, postpaid.

Daffodils Princes, 20c. doz., \$1.25 per 100, postpaid.

Daffodils Emperor, 40c. doz., \$2.30 per 100.

Write for our Price List

GEO. KEITH & SONS

Seed Merchants since 1866

124 King St. E. Toronto, Ont.

Water Means Money to You

DON'T try to struggle along with an inadequate water system. Where it is a lot of trouble to get water to the plants, the plants suffer. The Peerless gives you all the conveniences of a City Water System. Turn on the tap, use a hose—you need not be afraid of using more water than the Peerless will pump.

Peerless Water Systems

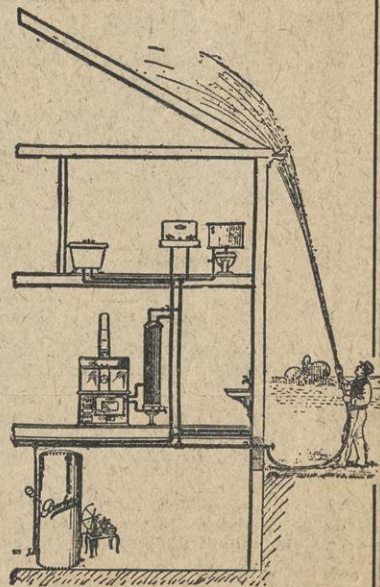
are dependable all the time. A reservoir tank in the cellar or outhouse, or buried underground, holds the water from the source of supply pumped in under air pressure. The pump is worked by hand, gasoline or electricity, as suits your convenience. No open tanks to allow water contamination. Water on tap in your bathroom, hot and cold; on tap in your gardens; on tap in your greenhouses—all costing astonishingly little to install, and practically nothing to operate.

Ample Fire Protection, too!

Write for full particulars and special information regarding your individual requirements.

National Equipment Company, Limited
9 Wabash Avenue, Toronto

(Sole Manufacturers of Peerless Water Systems).



Irrigation Tests

(Continued from page 251.)

at a few cents per thousand gallons. Where this low cost of water prevails, market gardeners and florists should give it a fair trial. From present indications, not only from the experimental farms, but also from the practical men who have already used it, there is great promise of its being a means of increasing our returns. It is a splendid way for the man of small acreage near our rapidly growing cities to increase his output without increasing his land area. In fact, with many crops it is possible to double them, which is equivalent to doubling one's acreage without irrigating. In many places you would not hesitate to pay from one to three hundred dollars an acre for land. This is only the cost of installation, and with irrigation you have the added satisfaction of growing better and earlier crops, that are more saleable, and

will usually command the "top of the market" prices.

SOCIETY NOTES

Aylmer Ont.

A horticultural society has been established here with Mr. A. J. Elliott as provisional secretary. The society expects to have about 100 members. The good work accomplished during the past few years by the St. Thomas Society has proved an inspiration here. Dr. F. E. Bennett, of St. Thomas, helped in the organization work.

Toronto

Great interest was taken at a meeting held

in the Massey Hall, Toronto, during October for the distribution of prizes in connection with the second annual Dovercourt Backyard Garden Contest. In all there were 616 contestants. The average size of each garden was 1,500 sq. ft., of which space two-thirds was devoted to the growing of vegetables. One of the most popular winners was Mr. Jos. Mantell, of 69 Herbert Ave., who was 105 years of age, and who was given a medal for the excellence of his garden. A boy seven years of age also won a prize. The chairman, Mr. W. W. Dinnick stated that if eighty per cent. of the backyard gardens of Toronto were devoted to the cultivation of vegetables, the net value of the production would be almost \$2,000,000.

Bulletins and Reports

Cut worms are the cause annually of immense losses to fruit and vegetable growers, as well as to general farmers. This year their depredations have been unusually heavy. Those who have suffered from their activities will be interested in a 31 paged bulletin (No. 10) entitled "Cut Worms and Their Control," prepared by Mr. Arthur Gibson, Chief Assistant Entomologist, Department of Agriculture, Ottawa. This is an enlarged and revised edition of a former bulletin dealing with the same subject. It is well illustrated and worth procuring.

The University of Illinois Agriculture Experimental Station is distributing Circular No. 182, entitled "The Fertilizer Problem from the Vegetable Grower's Standpoint," by C. E. Durst.

The College of Agriculture, Berkeley, California, has issued bulletin No. 257 entitled "New Dosage Tables," one of a series relating to fumigation studies and investigations.

Rose growers in Canada will be interested in bulletin No. 85, entitled "Hardy Roses, Their Culture in Canada," prepared by Mr. W. T. Macoun, Dominion Horticulturist and his Assistant, Mr. F. E. Buck, of the Central Experimental Farm, Ottawa. This bulletin amplifies the information contained in a previous publication entitled Pamphlet No. 9, for which there was a large demand. It deals with the site and soil for roses, plants and planting, cultivation, pruning, winter protection, insect and fungus enemies, and gives also descriptions of the leading varieties of roses.

The Fruit Growing Society of the Province of Quebec is distributing the annual report for 1914. It is an ambitious publication, comprising almost 200 pages, and giving in full the papers and discussions at the last annual convention.

Catalogues.

Fall catalogues that have reached The Canadian Horticulturist include one from Harrison's Nurseries, Berlin, Maryland, which deals both with fruit and flowers, and one entitled "Bulbs, Alpines and Perennials for Autumn Planting," from Perry's Hardy Plant Farm, Enfield, Middlesex, England.

Recent bulletins and reports that have reached The Canadian Horticulturist include the following: Bulletins 128 on, "The Arsenates of Lead," 130 on "Pruning," and 129 on "Fruit Bud Development of the Apple." These three were issued by the Oregon Agricultural College, Corvallis, Oregon. The University of Florida has issued Bulletins 121 dealing with "Cucumber Rot," and 125 dealing with "Tomato Insects." These can be obtained free upon application to the Experiment Station, Gainesville, Fla.

Read the advertising guarantee on page 258.

THE COMMISSION MAN

Under-noted are Canadian and British firms wishing consignments of fruit and vegetables. Correspondence is solicited

NICHOLSON & DEMPSTER

88 Colborne St., Toronto, Ont.

Receivers and shippers of local and carloads lots Potatoes, Apples, and Mixed Vegetables.

HERBERT PETERS

88 Front St. E., Toronto, Ont.

Wholesale Fruit and Produce

See advertisement on page 248.

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Consignments of fruit and vegetables solicited. We give personal, consistent and reliable attention to every consignment. Shipping stamps furnished on request.

Bankers:

London County and Westminster Bank, Southwark Branch.

Established 1880.

John Robinson

FRUIT IMPORTER AND SALESMAN,
3 Rochester St., Borough Market,
LONDON, ENG.

Telegraphic address: "Redsoil, London."
A.B.C. Codes.

I shall be pleased to have your consignments of Apples. Regular market reports sent on request.
Correspondence is invited.

JACKSON FRUIT CO.

REGINA, SASK.

WHOLESALE FRUIT AND PRODUCE.

Get in touch with us, we shall be pleased to advise you as to the conditions of prairie markets and will handle consignments to your satisfaction. Good connections throughout the prairies.

WANTED — Consignments of tomatoes, peaches, cherries, grapes, and all kinds of fruit and basket apples, also carlot apples. Centrally located; convenient to all car tracks.

LAING BROS.

Wholesale Fruit Merchants

307-309 Elgin Ave. : Winnipeg, Man.

Rogers Fruit Co. Limited

WINNIPEG, MAN.

Largest fruit and vegetable dealers in the West. Write or wire your offerings.

The Oldest

Commission House
in Toronto

McWILLIAMS & EVERIST

Send your
Consignments.

FRED BARKER

25 Church St., Toronto, Ont.

Representing J. H. Goodwin, Manchester; Thos. Russell, Glasgow; Nothard & Lowe, London; G. E. Cooper, Liverpool.

APPLE RECEIVERS.
Consignments Solicited.

HYSLOP & SONS

132 Princess Street : Winnipeg, Man.
Fruit Growers and Shippers

We have opened up a commission house in Winnipeg, and solicit consignments of fruit. Commission, 10 per cent.

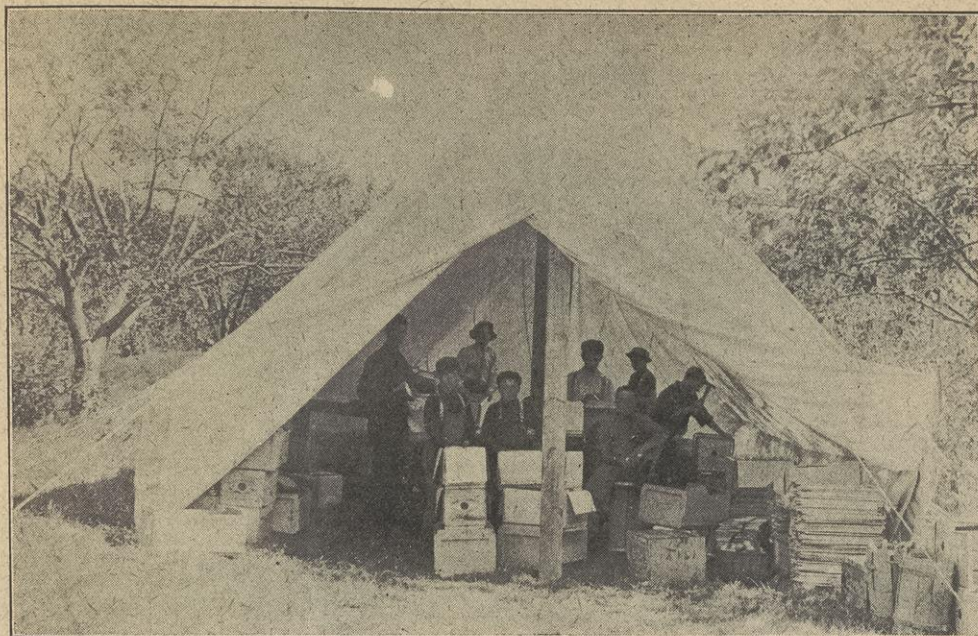
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Dawson, Elliott Co.

32 West Market St.,
TORONTO.

Telephone Main 1471.

Consignments of Apples and Vegetables solicited. Highest prices obtained.



An apple grading machine as used successfully in the orchard of the Agricultural College, La Trappe, Que.

British Columbia

At a meeting of the executive of the Okanagan United Growers, held recently, it was shown that shipments of fruit up to October 13th had amounted to almost 1,000 cars, and that there were orders on hand which would bring the shipment for the season up to about 1,400 cars. The apple tonnage handled by The United Growers will be approximately 347,280 boxes. Up to the date of the meeting the export shipments included over 20,000 boxes to New Zealand and Australia and some 2,000 boxes to South Africa.

The cannery at Kelowna has been leased by R. J. Graham, of Belleville, Ontario, who may also secure a building in Vernon. This firm proposed to establish a big evaporating plant for the handling of vegetables to fill contracts secured with the British and French Governments for army purposes.

About 1,000 tons of British Columbia potatoes have been marketed this season in

Australia. A large part of these shipments were obtained in the Delta and lower Mainland districts. The Government officials who looked after these shipments took great care in their selection and inspection.

Fruit Inspectors at Vancouver continue to condemn large quantities of apples from Washington State affected with the Codling Moth.

Okanagan fruit growers are well satisfied with the results obtained from the use of the Economy Crate. It has been used for the marketing of the lower grades of apples and contains about 45 lbs. Already it has been suggested that it be made a standard package.

Up to the middle of October some thirty-four carloads of fruit had been shipped by the Grand Forks Fruit Growers' Association. Before the end of the season upwards of sixty carloads will be shipped, including thirteen cars of prunes, one of plums, and three of pears.

The Dominion Fruit Division has appointed Mr. B. P. Boyce as a travelling instructor



Replace

the plant food your crops have taken from the soil. Our big book, "Bumper Crops," will tell you what fertilizers to use and how to use them.

FREE if you mention this paper.

Gunns Shur-Crop Fertilizers

CIDER APPLES WANTED

We are prepared to pay the highest cash prices for cider apples in car lots. Farmers who have not sufficient to make up a whole car themselves can arrange with their neighbors for joint shipment. Write us if you have any to offer.

BELLEVILLE CIDER AND VINEGAR CO.,
Hamilton, - - - Ontario.

SCALE ON TREES

Can be best reached in the dormant season when Lime Sulphur can be used full strength instead of diluted as it must be in summer spraying.

Grasselli
Lime Sulphur Solution
the tried and proven fungicide.

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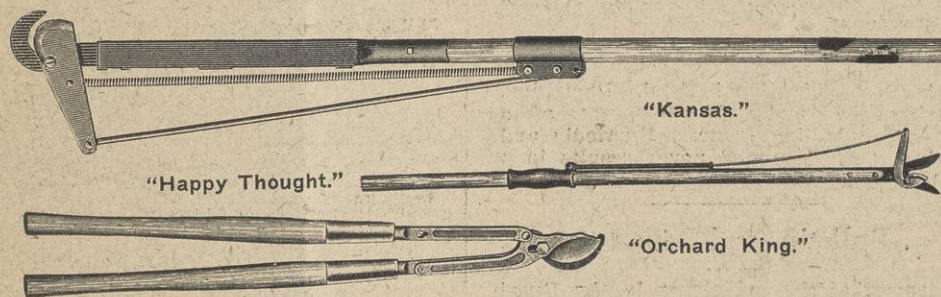
The Grasselli Chemical Co., Limited

HAMILTON TORONTO MONTREAL

"TAYLOR-FORBES."

"MADE IN CANADA."

Tree Pruners



Patented because they are light, strong and easily operated. Sold by responsible Hardware Dealers everywhere in Canada. Catalogue mailed on request.

TAYLOR-FORBES, Company, Limited

GUELPH, Canada

Horse-Radish Wanted

Highest price paid for good, firm roots free from dirt and small stringers.

Wm. Davies Company,
TORONTO, CANADA

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
53 William St., MONTREAL, QUE.



Picking Tomatoes for Seed.
Each tub contains a special strain. This method has been followed with success by L. A. Waitzinger, Echo Place, Ont.

in the commercial packing of fruit. He was expected to spend most of the month of October visiting isolated ranches where packing schools were not practicable.

An unusually large yield of onions has been reported from Vernon, where Mr. J. P. Mutrie, of Vernon, produced 206 tons of onions on six and a half acres of land, or an average of about thirty-two tons to the acre. The Yellow Globe Danvers variety was grown. At the price paid by the evaporating plant of fourteen dollars per ton in bulk, without sacks, this crop was expected to net Mr. Mutrie \$2,884, or about \$443 an acre.

Why School Gardens Fail

L. A. Dewolfe, Director of Elementary Education, Nova Scotia

School gardens, I think, fail (1) Because the teacher lacks enthusiasm and the power of leadership with the pupils.

(2) Because she is not well-balanced; and lacks persuasive powers and leadership with trustees and parents.

(3) Because teachers in various departments of the same school fail to co-operate.

(4) The teacher's ignorance of gardening causes the children to lose confidence in her.

(5) The school grounds are often unsuitable, either on account of condition or in size.

(6) Loafers on the school grounds after school hours often do damage. Making the school ground a thoroughfare also causes trouble.

(7) Too much is attempted.

(8) The frequent change of teachers.

(9) "Who will do the work" is a puzzling question. Frequently, the matter of ploughing is left to the voluntary efforts of some good-natured man instead of having the work done in a business-like way at the section's expense.

(10) Lack of care in summer vacation is, perhaps, the greatest drawback.

(11) Procrastination is fatal. Ploughing, ordering seeds, and making plans are often left until planting time. Hurriedly and poorly prepared ground never results in a good garden.

Bulletins and Reports

A remarkably fine volume in the Rural Text-Book Series entitled "Soils, Their Properties and Management" has recently been issued by The MacMillan Co., Ltd., Toronto. The authors are Prof. T. Lyttleton Lyon, Prof. Elmer O. Fippin, and Prof. Harry O. Buckman, of Cornell University. The subjects dealt with include soil forming processes, the geological classification of soils, physical properties of the soil, soil structure, forms of soil water and their

movement, the control of soil moisture, acid or sour soil, and many other similar subjects. The book comprises over seven hundred pages, and for those interested is well worth the price asked for it, which is \$1.90 a copy. It may be obtained through The Canadian Horticulturist.

The University of Illinois, Urbana, Illinois, is distributing Circular No. 180, entitled "The San Jose Scale." The information contained is the latest available on this subject.

I have found the different articles on perennial borders in The Canadian Horticulturist a great help to me in the planting of mine. Enclosed please find \$1.00 for renewal of my subscription.—Miss M. G. Gillies, Niagara-on-the-Lake, Ont.



FOR PROFIT

Plant our Top Notch Fruit, Shade and Ornamental Trees this fall. Evergreens, Shrubs, Roses, Vines, Bushes. Ask for Price List (no agents) at Central Nurseries.

A. G. HULL & SONS,
St. Catharines - Ontario.

GILSON Johnny-on-the-Spot
A husky trouble chaser. Will pump water, churn, separate cream, run grindstone and do other chores. Lengthen your days by lightening your labors. Write for catalogue. Sizes up to 15 H.P. Gilson Mfg. Company, 5 York St. Guelph, Canada. **\$47.50**

SANDER & SONS ST. ALBANS, ENGLAND

ORCHID GROWERS. The Finest

Stock in the World

Catalogue on Application

NEW AND RARE SEEDS

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

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

FREE LAND

For the SETTLER in

NEW ONTARIO

Millions of acres of virgin soil obtainable free and at a nominal cost are calling for cultivation.

Thousands of farmers have responded to the call of this fertile country and are being made comfortable and rich. Here, right at the door of Old Ontario, a home awaits you.

For full information as to terms, regulations, and settlers rates, write to

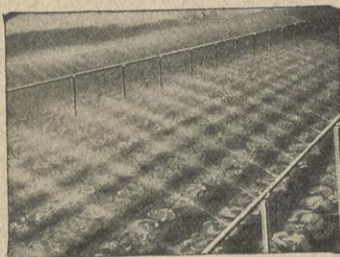
H. A. Macdonell

Director of Colonization

Parliament Buildings, TORONTO

HON. JAS. S. DUFF,

Minister of Agriculture
Parliament Bldgs., Toronto



What If You Could Make It Rain to Suit You Every Year?

AND everyone else had to take their chances or else spend most of their time at the end of a hose.

Think of being able to forget the word drought. Wouldn't every year be a profitable one?

That is exactly what we offer you—and it costs little more than hose.

RAIN as much as you want—wherever you want—any time you want it—as long as galvanized pipe will last.

Turn on the Valve. That's the Skinner System of Irrigation. Send for Bulletin 115.

**SKINNER
SYSTEM**
OF IRRIGATION

The Skinner Irrigation Co.

217 Water Street,
TROY, OHIO

Powdery Scab Regulations

Editor The Canadian Horticulturist:

The special plant disease regulations relating to Powdery Scab of potatoes which have been in force since November 7, 1914, requiring the inspection and certification of potatoes grown in the Maritime provinces and Quebec before they could be shipped either to the United States or any other part of Canada were rescinded by order-in-council on October the 8th, 1915.

This action was taken by the Hon. Martin Burrell, Minister of Agriculture, who arrived at the conclusion from investigations carried on in Canada that the disease in question did not warrant the drastic action that had been thought necessary by the United States in placing an embargo against all Canadian potatoes. The effect of the United States regulation barred Canada from the United States markets and seriously hampered the movement of potatoes within Canada itself. Moreover, the investigation carried on by the scientific staff of the Department of Agriculture under the direction of the Dominion Botanist revealed that Powdery Scab did certainly not prove a destructive disease in this country which would call for special legislative measures concerning its control.

The removal of the regulations now permits potatoes to be shipped unrestricted from one part of the Dominion to another. Negotiations are under way to induce the United States authorities who have already removed their own domestic quarantines against Powdery Scab, to also remove the embargo still in force against Canada. It is hoped that the action of the United States will be equally broad in its scope and that the former relations in the potato trade will be restored shortly.

Yours very truly,

H. T. GUSSOW,
Dominion Botanist, Ottawa.

Vegetable Growers' Convention

The annual convention of the Ontario Vegetable Growers' Association will be held in the Railway Committee Rooms, Parliament Buildings, Toronto, on Tuesday, November 9th. The programme is as follows:

Morning Session.

9.00.—President's Address. F. F. Reeves, Humber Bay.

9.15.—Discussion.

9.30.—Report of Secretary-Treasurer. J. Lockie Wilson.

9.45.—Discussion.

10.00.—Report of Vegetable Specialist. S. C. Johnston.

10.30.—Discussion.

11.00.—Report of Delegate to American Vegetable Growers' Convention, Cleveland, Ohio. F. F. Reeves, Humber Bay.

11.20.—"Fertilizers Best Suited for Vegetable Crops in Ontario." Prof. Shutt, C.E. F., Ottawa.

11.50.—Discussion.

12.00.—Address by fraternal delegates from Ontario Horticultural and American Vegetable Growers' Associations.

12.30.—Round Table Luncheon in Members' Dining Hall.

1.15.—Three-minute addresses.

Afternoon Session.

2.00.—Reports on Experimental Work Conducted at O. A. C., and Central Experimental Farms. J. E. Britton, and A. J. Logsdail.

2.30.—"The Vegetable Work at Vineland with Special reference to Seed Improvement." F. M. Clement, Jordan Harbor, Ont.

3.30.—"Tomato Blight." D. H. Jones. O. A. C., Guelph.

4.00.—Discussion.

4.15.—"The Skinner System Necessary for Successful Market Gardening." Thos. Delworth.

4.45.—Discussion.

5.00.—"The Production and Preparation of Celery for Exhibitions." John Harris, Belleville.

5.30.—Discussion.

Evening Session.

8.00.—"Problems in Marketing." Howard W. Selby, Philadelphia.

8.15.—"Greenhouse Problems." C. W. Waid, Lansing, Michigan.

8.30.—Discussion.

9.00.—"Injurious Insects Which Affect Market Gardening." Arthur Gibson, C. E. F., Ottawa.

A booklet entitled "Fruit Growing in Lambton County," has been received from the Department of Agriculture at Petrolia. This booklet was compiled by G. G. Bramhill, B.S.A., District Representative for Lambton County, and is issued by the Lambton County Publicity Association with the object of presenting the advantages of Lambton County to prospective settlers. It is an attractive booklet, well illustrated and fulfils its purpose.

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FURS**
And Remit
Promptly

More Trappers and Fur Collectors send their Raw Furs to us than to any other five houses in Canada.

Because they know we pay highest prices, pay mail and express charges, charge no commissions, and treat our shippers right. Result, we are the largest in our line in Canada. Ship to us today and deal with a Reliable House. No Shipment too small or too large to receive our prompt attention.

Guns
We sell Guns, Rifles, Traps, Animal Bait, Shoepacks, Flashlights, Headlights, Fishing Nets, Fishing Tackle and Sportsmen's Supplies at lowest prices. CATALOG FREE.

Hallam's Three Books "Trapper's Guide" English or French 96 pages, illustrated tells how and where to trap and other valuable information for trappers; also

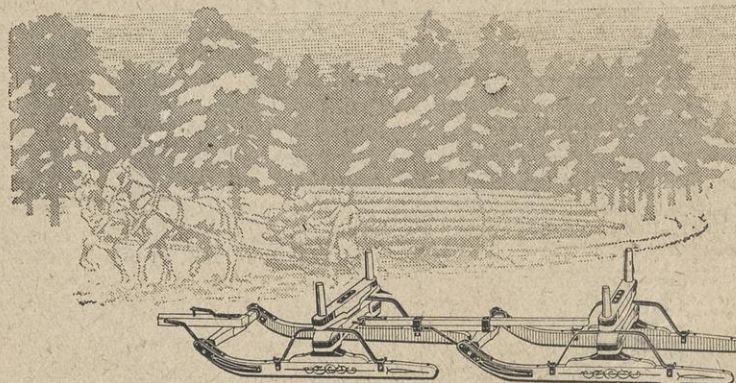
"Trapper's and Sportsmen's Supply Catalog" "Raw Fur Price List," and latest "Fur Style Book" of beautiful fur sets and fur garments.

All these books fully illustrated and sent FREE ON REQUEST.

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FOR the use of our customers whose hauling cannot be stopped by the snows of winter, or to whom the snows are welcome, as furnishing a smooth hard road over which to move their products, we offer a line of bob sleighs so complete that each man may find in it the kind of sleigh he needs and uses.

Unless a sleigh will stand hard knocks, it is of little value in Canada. Therefore, we make these sleighs, above all else, strong. Even the lightest one-horse sleighs are as strong as selected pieces of high-grade wood and steel and the most careful workmanship can make them. No imperfect or unsound material finds its way into the manufacture of these goods.

Each sleigh we sell is guaranteed, with fair usage, to carry its load over ordinary roads and to do the work intended for its size. We make a liberal guarantee arrangement to take care of the satisfaction of our customers.

See our line before you buy. It is handled by I H C local agent who will show you how big a line it is. Or, if you cannot conveniently see the agent, drop a line to the nearest branch house and we will send full information.

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Classified Advertisements

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

REAL ESTATE

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

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

FARMS—All kinds, all sizes, for sale, fruit, stock, grain and dairy farms. Let me know what you are looking for. H. W. Dawson, Brampton, Ont.

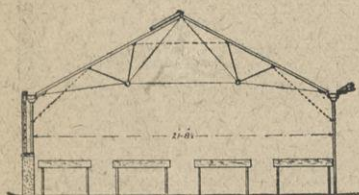
WANTED—To hear from owner of good Farm for Sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

MISCELLANEOUS

1,000 GUMMED HONEY LABELS, two colors, any wording, for \$1.30. Catalogue free. Pearl Card Co., Clintonville, Conn.

BOOKS FOR SALE—Horticultural, Agricultural and Scientific, from library of late Dr. Wm. Saunders. Send for lists. Henry S. Saunders, 41 Harbord St., Toronto.

People read the little classified advertisements in this column to find out what is being offered for sale. You can advertise any good article you have for sale at a very low cost and get results. A post card will bring you our advertising rates and sample copy of The Canadian Horticulturist. Address THE CANADIAN HORTICULTURIST, Peterboro, Ont.



STYLE C

This is a New Model for 1915, the result of fifteen years' experience in Greenhouse construction for Canada.

Dotted lines show location of wind-ties that positively prevents vibration of the sash. Supplied in widths up to 25 feet 2 1/4 inches from post to post.

KING CONSTRUCTION CO.,
40 Dovercourt Road - Toronto.



We have a large
stock of all size
FLOWER POTS
FERN OR BULB PANS
3/4 AZALEA POTS
and Rimless Pans

Orders Filled Promptly. Send for Prices.

THE FOSTER POTTERY CO., Ltd.
HAMILTON, ONT.

Marketing Conditions for Ontario Apples

According to Mr. E. F. Palmer, Sales Manager of the Co-operative Fruit Growers of Ontario, Limited, who is looking after the marketing of a considerable portion of Ontario's 1915 apple crop, the crop for this year is only about one-third of last year's, and what crop there was of 1's and 2's has been reduced probably forty per cent. on account of scab.

At the beginning of 1915, everybody expected and looked for big prices on all kinds of fall apples as well as winter apples. The early fall varieties, such as Duchess, brought good prices, but since then growers have not received as much as they expected, the reason being that the fall crop was much better, comparatively, than the winter crop. Taking the apple crop as a whole, it was light throughout Ontario, but the fall apples were better, comparatively, than the winter ones, and, therefore, the price for fall apples ran lower proportionately than for winter apples.

Regarding the disposition of the crop, a circular recently issued by the Department of Agriculture states:

"The bulk of Ontario's apple crop will find a market in the Canadian northwest this season. Much of the winter apple crop has already been sold there at good prices, for the northwest consumer is in a position this year to buy fruit even in the face of a short apple crop everywhere and corresponding high prices. Flat prices being realized for Ontario apples are in the neighborhood of \$3.00 or a little better per barrel for good winter varieties, ones and twos, f.o.b. shipping points.

"Considerable of the Ontario crop will also find its way over to Old Country markets. Several cars of fall stuff have already been shipped, though early in the season it was thought that considerable difficulty would be experienced in getting space across on the boats. It appears now, however, as if reliable shippers, whom the Steamship Companies can depend upon to always fill the space contracted for, and to get the fruit to the dock on time, will be able to get at least part if not all the space that they require.

"The British Columbia winter apple crop is practically all sold, chiefly in Alberta, Saskatchewan and Manitoba. The following word as to the approximate distribution of the crop, was received from R. M. Winslow, Provincial Horticulturist for British Columbia. 'About two hundred cars of our apples, or perhaps two hundred and fifty, are going into Saskatchewan and Manitoba; about three hundred cars into Alberta, and about one hundred and fifty cars for export, the balance to the coast local markets.' Prices for British Columbia good winter varieties, ruled about \$1.30 per box for No. 1 stock, f.o.b. shipping point.

"Nova Scotia apples are not being bought in the Canadian west this season, so that the bulk of the crop there will likely find its way over to the Old Country markets. Several boats have already been chartered by the Central Selling Association in Nova Scotia, to carry apples only. Much of their low grade fruit will likely be disposed of in Eastern Canadian cities, particularly in Quebec Province, as the apple crop there is very light and not nearly sufficient for home demands."

Old Country Conditions.

The working classes in England have more money this season than they have ever had and are spending money on what they previously considered luxuries. With the increased demand for labor, there is more

money to spend and everyone is in a more prosperous condition.

Summing up the export situation, conditions apparently simmer down to about this, that the western and home markets are good while the Old Country market must, of necessity, be very good to justify taking the chance involved in shipping stuff there.

Books for Review

Several books have reached the editorial desk for review, that are well worthy of notice. One of these, entitled "Productive Vegetable Growing," by John W. Lloyd, M. S.A., Professor of Olericulture in the University of Illinois is a book that should be of value to vegetable growers. It contains over three hundred pages and is profusely illustrated. Chapter headings include such topics as Types of Vegetable Growing, Soil and Location, Factors Influencing the Quality of Vegetables, The Feed, Plant Food and Moisture Supply, The Temperature Factor, Methods of Transplanting, The Use of Glass in Vegetable Growing, The Preparation of Soil for Planting, The Planting of Seeds, Controlling Insects and Diseases, Intensive Cropping, Harvesting and Marketing, and many other topics. The book is one of Lippincott's Farm Manuals, being published by The J. B. Lippincott Co., Philadelphia, Pa. It may be purchased through The Canadian Horticulturist for \$1.50. Postage extra 10c.

"Our Dooryard Friends" is the title of a well-arranged book on birds, by Sara V. Prueser, published by The Platform, The Lyceum and Chatauga Magazine, Steinway Hall, Chicago. Numerous illustrations furnish a guide to those who desire to become better acquainted with the birds common around most of our homes. Accompanying the illustrations are short articles descriptive of the birds, and their characteristics. Among the birds described are tree sparrows, chickadees, and tufted titmouse, white-breasted nuthatch, purple finch, woodpeckers, cardinals, meadow larks, blue jays, goldfinches, thrashers, and numerous others.

A book not horticultural in character, but of interest from a literary standpoint, is entitled "While the Fire Burns," by Alfred L. Flude. It comprises the musings of an editor on numerous subjects that are dealt with in a gay or pensive, but always attractive way, that holds the attention and interest. These include such unusual topics as "The shy young man," "The spider and the fly," "Being alone," "Ghosts," "A baby's teeth," "A white hyacinth," and many others. An extract from the latter may give an idea of the character of the work: "A white hyacinth is by my side as I write, and its perfume, more delicate than the breezes of Arabia, seems to linger lovingly about me in the firelight. I wonder where, in the cupful of mould, were hidden the pearly petals, the green leaves, the sensuous odor. I think it is like a handful of dust, called man, in which is hidden the embryonic soul, which leaves the clay and blossoms in an atmosphere divine. Yet, not like the soul, for the flower passes away and is gone. But the spicy odor greets me like an old-time friend. It is not from the tiny cluster beside me, but I think it comes wafted down through an avenue of years from the old home garden." This book is also published by The Platform, Steinway Hall, Chicago.

I could not do without the Canadian Horticulturist. Enclosed is one dollar to renew my subscription. — C. L. Biggar, Niagara Falls South, Ont.

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BATTS LIMITED
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Greenhouse
Construction
Material of
Louisiana
Red Cypress
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Sash.



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Get the highest prices.

Pack your Apples, Pears, Peaches,
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Let us quote you, knocked down
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No charge for printing.

Barchard & Co. Limited

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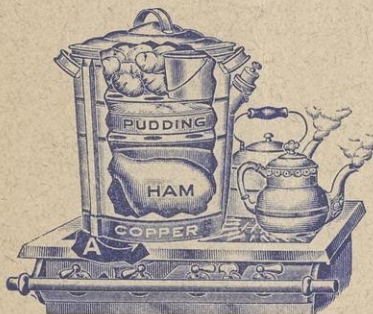
135-151 Duke St. Toronto, Ont.

CUT MEAT BILLS

YOUR ONE THIRD

WITH A

Peerless Steam Cooker



All Kinds of Meat and
Fowl Made Tender.

The Peerless Steam Cooker saves time, labor, and money. The size shown holds 7 gallons, and will cook an entire meal for from six to eight people. It can be used on any kind of stove, and on gas requires only one burner. It has four compartments, and will cook at one time meat, cakes, vegetables, bread, etc. It does away with odors and steam in the house, and yet cooks every thing to perfection.

REGULAR PRICE, \$5.00.

This cooker is offered **FREE** to our readers who will get us a few subscriptions from their friends. Only get 6 Yearly Subscriptions to the Canadian Horticulturist at

\$1.00 each, or

3 Three Year Subscriptions at \$2.00.

And the Cooker is Yours.

The Horticultural Publishing Co., Ltd.

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For the Land's Sake

Use the best Manure
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GOOD CROPS

For Nurseries, Fruit Growers
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Sure Growth Compost

(A Composition of all Natural Manures)

Makes poor land fertile and keeps fertile
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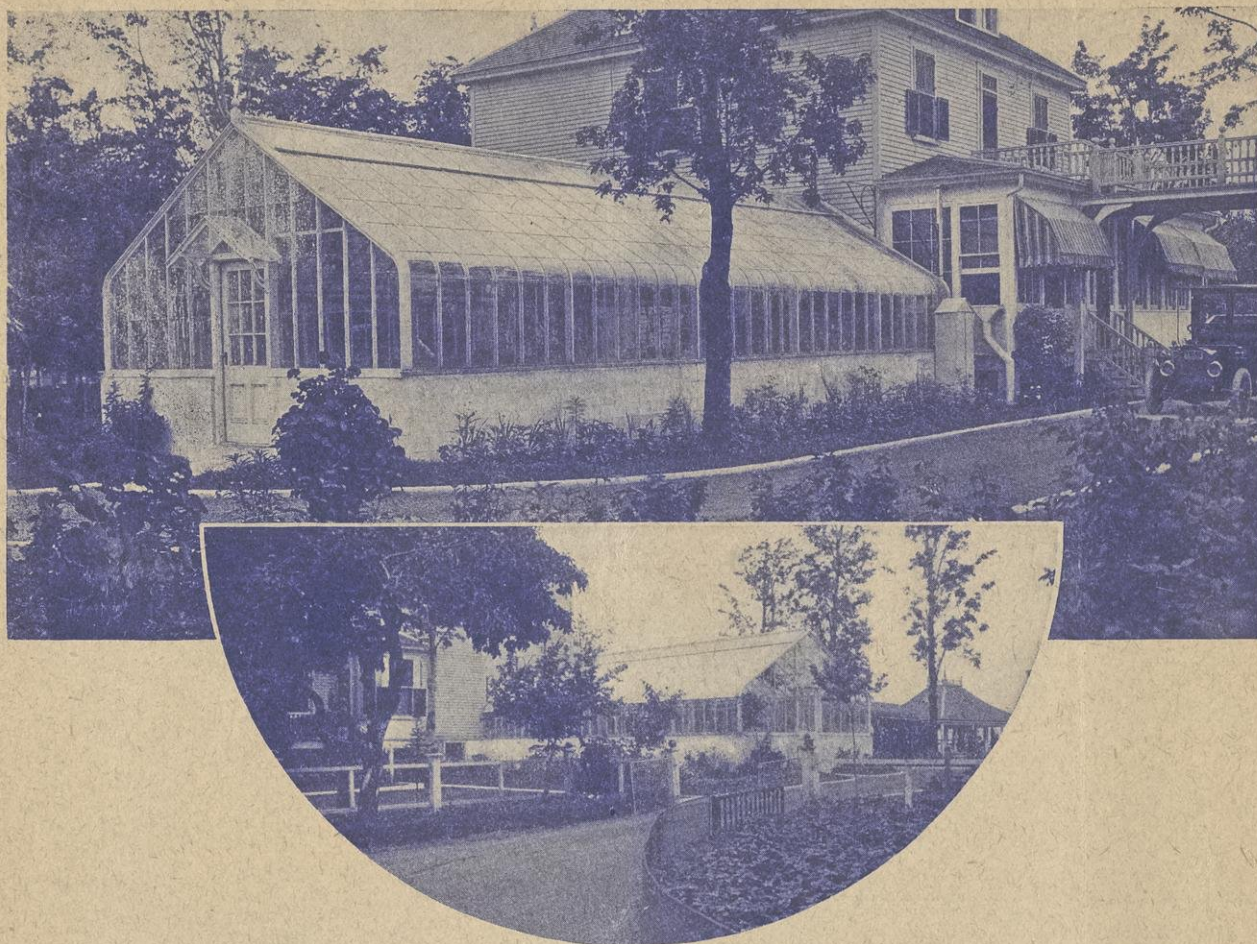
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Your Glass Enclosure Problems

How We Will Help You Solve Them

WHEN Mr. N. F. X. DuFresne concluded he wanted to have a glass enclosed, all-year-round-garden adjoining his residence at Pointe-Aux-Trembles, we had the pleasure of working it out with him.

Not only did Mr. DuFresne want a joy-giving spot to take the barb off Winter's tooth, but also a thoroughly practical place in which to grow early bedding plants, flowers and vegetables for setting out in the spring. He wanted his inside garden to start when his outside one stopped in the fall. He wanted it to boost his outside garden several weeks ahead in the spring.

So we planned and built for him this choice, curved

eave, glass garden and attached it directly to his residence, which opens into it by double doors.

The photo at the top, from the near-by point of view it was taken, really magnifies the size of the glass garden in proportion to the residence, but the lower view shows you its actual relation.

We tell you all these rather intimate facts, so that if you have a greenhouse or conservatory problem that you are seeking a happy solution for, you will know that we can help you out.

We will be pleased to hear from you, or we'll gladly come and talk things over with you.

Send for our Two G's Booklet—Glass Gardens—A Peep Into Their Delights.

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