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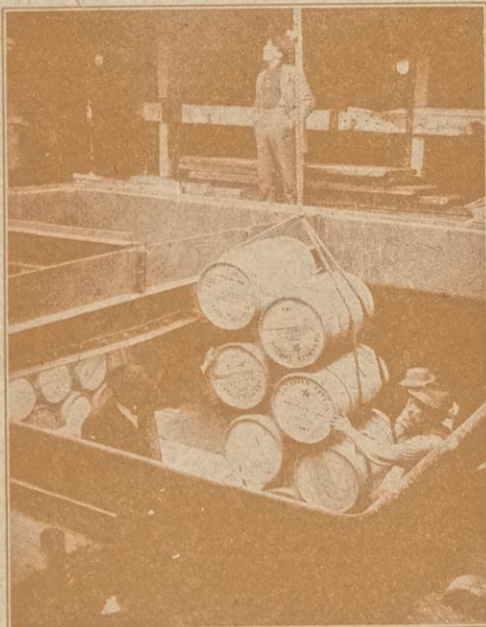
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The Canadian Horticulturist and Beekeeper

Vol. 23

PETERBORO, OCTOBER, 1915

No. 10

Cherry Precooling

Edwin Smith, in charge of fruit cold storage investigations, Dominion Fruit Division, Grimsby, Ont.

CHERRY prices in 1914 indicated that something had gone radically wrong with the industry. Some authorities attributed the low prices to the financial stridency in Canada and the consequent poor buying capacity of the people; others placed the cause with the poor marketing systems in vogue; and not a small amount of the cause was assigned to over-production.

With a lighter crop in 1915 prices were expected to go back to old figures. These hopes were not realized as prices for sour cherries were as low or lower in 1915 than they were in 1914. This indicates that the supply of sour cherries has been catching up with the demand of local markets, and that the increase of 21.9 per cent. in the plantings of this fruit between 1901 and 1911 is now having its certain and drastic effect.

To meet these conditions cherry growers must work along two lines,—viz, increase consumption and extend markets. Advertising well done will greatly increase the consumption of all fruits. By properly packing and precooling cherries their markets may be greatly extended.

By making a demonstration shipment of 18,284 pounds of cherries in 1914 the Department of Agriculture so induced Ontario shippers to ship to western markets that in 1915 cherry shipments from Grimsby to the west have totalled 168,057 pounds, or ten carloads of cherries, currants, gooseberries and similar fruit. Thus the western marketing of Grimsby sour cherries has been increased over 900 per cent. in one year. This increase could not go on at the same rate from year to year, but it is certain that western markets could stand a great

many more sour cherries if placed there at moderate prices.

During the past year the writer has investigated the source of supply of sour cherries for the prairie markets and has found that as yet but a very small amount of that fruit has been imported from the United States,—British Columbia and Ontario being practically the sole source of supply.

Practically none of the sour cherries thus far shipped from Ontario by freight have gone west of Winnipeg. Yet actual tests during 1915 with the Early Richmond, which is not considered so good a shipper as other varieties of sours, showed that this variety when properly precooled stood a ten days freight shipment, and after re-shipping one hundred and thirty-three miles by local express the cherries landed in splendid market condition. Ontario cherries may be ship-



An orchard in bearing on the farm of W. B. Gilman, Fredericton, N.B.



A fruit shipping platform at a railway station in the Niagara district. Note the light style of dray in the foreground.

ped by freight and re-shipped by express to small points in Alberta, or a similar distribution of British Columbia cherries may be given in Manitoba, although it would be foolish for the two districts to over-lap distributing territories. But as far as the physical condition of the cherries is concerned there is not a reason why all prairie points cannot be supplied with freight-hauled and moderate priced cherries if they are properly handled and shipped.

A Great Demand.

To illustrate the wonderfully large demand for moderate-priced cherries attention should be called to a large retail store in Winnipeg that bought an entire car of exceptionally good precooled Montmorency cherries and had a sale of the entire lot at 50c. per 6-pt. basket (eight pounds). So eager were the Winnipeg people to buy the fruit that the whole shipment of 2,333 baskets was sold in thirty minutes.

The sour cherry is a fruit that will stand a low temperature without injury. In general practice we do not use a temperature below thirty degrees to precool carload lots. However, our investigations show that no injury comes from subjecting the fruit to seventeen degrees for cooling, providing cooling is stopped before the temperature of the fruit reaches thirty-two degrees. By precooling to forty degrees and maintaining that temperature during transit the cherry may be shipped in splendid condition for ten or twelve days. If a temperature of thirty-two degrees could be maintained in our refrigerator cars cherries would stand freight shipment for two weeks. At the end of this time all cherries having stems out

or that have been bruised in any way in packing will be discolored and upon close inspection counted as waste. This emphasizes the great care that must be used in harvesting cherries for long-distance shipments, since as little handling as possible must be used, and for this reason we advocate the picking of the cherries directly in the shipping baskets.

When precooling cherries care must be used in selecting the refrigerator cars that the fruit is to be shipped in. Our experience would not warrant the shipping of precooled cherries in the "Brine tank" type of refrigerator car without the use of salt, and our work has not proceeded far enough as yet to advocate the use of salt with fruit shipments. Even though the fruit has been cooled to thirty-eight degrees before shipping much difficulty has been experienced in keeping the temperature of the Brine Tank refrigerator cars below fifty degrees during transit.

What has been said about sour cherries applies to a certain measure to sweet varieties, although these varieties will not stand the same length of shipment that sour varieties do. There is also a greater difference between the carrying characteristics of the sweet sorts than there is between the sour. Our investigations during the past year have proved that sweet varieties such as the Black Tartarian, Windsor, Bing or similar kinds may be precooled and shipped by freight for 1,300 miles.

The question that is asked more frequently than any other relating to the subject under discussion is "How will precooled cherries behave on the market?" It will be easy for the reader to realize that a cherry that has

been picked for ten days, even though it has been under refrigeration, will not be in the firm, resistant condition that a fruit that has just been picked from the tree. Ripening processes have been taking place slowly but surely. However, the fruit will not perish immediately upon being removed from the refrigerator car into the warm air. At first there is a rapid condensation of moisture on the surface of the fruit, (not so heavy on the prairies as in the east on account of the low relative humidity of the air in the west). This gradually disappears, but the moisture has helped to germinate mold spores. During the day that it is being unloaded and distributed the cherries remain in good condition without much sign of change. After twenty-four hours from the car or on the following morning the fruit will appear in as good a condition, but upon careful examination will show discolored spots, especially where it has been bruised. After thirty-six hours the discolored spots commence to indicate decay, which begins to be serious after two days. This gives the fruit time for distribution, but means that no time can be wasted in the sale of fruit that has been picked so long.

Frost Thermometers

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

Many nights, in the spring and fall, frosts threaten, which do not actually arrive; or, if they do, only come in local areas. It is very difficult for any person to foretell whether a frost will actually come or not; so that the only way to be on the safe side would be to supplement by the addition of a frost alarm. The frost alarm thermometers are accurate and reliable, and are simple in construction. Where a thermometer is used it should be placed in a cold part of the farm where frosts generally strike, and it should not be more than 900 feet from the battery box. The two wires are then led from the battery to the thermometer.

The alarm thermometer is a specially made instrument, with a fine platinum wire fused into the bore of the tube connecting with the mercury column at 32 degrees F., or any other one permanent point desired. A second wire, touching the mercury at a point below the other, completes a circuit, which is broken the instant the mercury drops below the designated danger point — the permanent point referred to above. A non-sparking special relay battery attachment causes a bell to ring at practically any distance from the thermometer itself the moment the circuit is broken. Until the alarm rings the danger is not imminent, and all unnecessary expense of lighting fire pots in the orchard may be spared.

The Apple King of Eastern Canada

L. D. Robinson, Berwick, N.S.

THE story of the struggle of S. B. Chute, of South Berwick, N.S., or "Sam" Chute, as his warmest friends and admirers delight to call him, to gain his present proud



"Sam" Chute.

position among the fruit growers of Canada is as interesting as it is instructive. He is well deserving of the title, "Apple-King." No man of his generation in the Maritime Provinces has had an equal influence for good upon the growing and marketing of fruit. His success in building up the greatest orchard industry in Eastern Canada should be an inspiration to every fruit grower.

Mr. Chute's work as manager for the United Fruit Co's., Ltd., Nova Scotia, is too well known to need any lengthy notice. Suffice it to say that, despite the opposition of speculators and pessimists, he has carried forward the work of this organization to a successful conclusion. To-day it stands unrivalled by any similar organization in America, and it is a matter of great regret to all wellwishers of the United Fruit Companies of Nova Scotia that he has resigned his position as manager.

Loyally he stayed by his father during his ups and downs, and at the age

of seventeen years we find him located in South Berwick, his present home, on a wornout farm, where the only thing that seemed to thrive was the mortgage. The story of how, through indomitable pluck and tireless industry, he has transformed this wornout farm into a veritable Eden of beauty and fruitfulness, is an inspiration to anyone unacquainted with the facts. Rescuing a few wretched plants from an old strawberry patch, he began his life as a fruit grower, and soon became known as the "Strawberry King" of the Annapolis Valley. And no king on his throne was prouder than he as, in overalls and battered straw hat, he drove to the station on top of wagon loads of luscious strawberries.

His ambition grew with success, and he began to see visions of a great apple orchard. Soon he began the planting of apple trees in his strawberry fields. They responded in a wonderful manner to the care and fertilizer necessary for the growth of large crops of berries. This work of orchard extension has gone steadily on till at the time of writing Mr. Chute's orchards cover 277 acres. Of these, 112 acres are in bearing, producing in favorable years some 10,000 bbls. of apples.

Mr. Chute's optimism is not dampened by war depression or the dangers of over-production. He feels that we in Nova Scotia have such an advantage over all competitors in the cheapness of our excellent fruit lands, and our nearness to the world's great markets, that we can defy competition. This year, 28 acres of new orchard

were set, besides 40,000 root grafts.

Mr. Chute is something of a landlord in relation to his hired help. Most of his helpers live in cottages, ten in number, built on the premises for their accommodation. Many of them work with him year after year, one of his employees, a boy of fifteen years old, being born in one of these cottages, where his father still lives, and takes his place among the other workers on the farm. All these employees, fifteen in number, receive a cheque for their services every Saturday night. The pay-roll during the summer season averages about \$100 weekly. Of course the number of helpers, and consequently the pay-roll, are greatly increased during the strawberry and apple picking. It is no uncommon sight at such times to see one hundred workers on this great farm.

Pruning.

In the early days of his experience in apple growing, Mr. Chute gave little attention to pruning, resting satisfied with abundant crops of fruit and healthy growth. But the demands of the market for highly-colored fruit, together with the ravages of apple scab and insect pests, have caused him to give the matter of pruning serious attention. He has learned by experience the impossibility of producing spot-free, highly-colored fruit in the shade. S. B. Chute makes mistakes, but unlike most people he does not make the same mistake twice. He now prunes systematically and thoroughly. The work of pruning begins early in March, and continues well on into April. His general instructions to pruners are: First, to remove all dead, diseased, and crossing branches; and second, to further thin the tree till air and sunlight can freely reach every part: this thinning to be effected rather by the removal of small branches than large ones.

The low-headed tree with open top has the preference, as this type of tree facilitates all orchard operations except cultivation. Canker has made its appearance in a block of Wagener trees, and is being vigorously treated. All the diseased limbs that can be spared are removed. In other cases, the sores are cut back with a sharp knife (a drawing knife may often be used to advantage) till healthy bark has been reached. Under this treatment, these sores as a rule will disappear, especially when covered with white lead paint. Mr. Chute has no use for the pruner whose progress through the orchard can be seen by the long stubs he leaves behind him. The limb removed must be cut parallel to the one from which it is taken, and as close to it as possible.

(Continued on Page 244)



A McMahon white apple tree, well loaded, at the Central Experimental Farm, Ottawa.



A prize winning collection of vegetables shown by T. S. Purvis at the Calgary Horticultural Exhibition, 1914.

The Beneficial Effects of Fall Cultivation

John Gall, Inglewood, Ont.

It is generally recognized that fall cultivation of soils has a beneficial effect upon fertility. Let us consider the subject from the point of view of the requirements of crops. It will make the central facts clearer, perhaps, if we first of all consider the chief properties of a fertile soil. It is required of a good soil that not only will it afford a safe anchorage for the roots of plants, but that it must give, during the growing season, a constant supply of water to the transpiring foliage. Furthermore, it must be able to yield up to the feeding rootlets all those different mineral constituents, such as phosphates and salts of potash, as well as those simple compounds of nitrogen that are absolutely required by all garden crops.

The capacity of the soil to hold air is one of the most essential aids to fertility. Ventilation is just as important for soils as it is for ordinary dwellings, as, in the absence of pure air, the active, living roots of our ordinary cultivated plants would sicken and perish. Moreover, as the oxygen of the air is used up in the process of respiration, not only by the roots, but also by the vast population of germs that inhabit the soil, certain waste products of a poisonous nature are produced, and these must be removed or rendered harmless if the soil is to be kept fit and sustained at its highest point of efficiency. Lastly, a fertile soil must be able to take up the sun's heat and retain it. Warmth is of supreme importance, and especially so in spring. If at times the land is too wet, the heat is

absorbed by the useless water, and the soil remains cold and uncongenial to early growth.

Cultivation promotes these conditions of soil fertility. The one great mechanical effect of digging is that it makes the soil finer in grain, and the finer the grain the greater is its fertility. To appreciate fully the importance of this fact let me refer for a moment to the way the roots of a plant feed. It is well known that all food taken up from the soil must be absorbed in solution in water. No solid particle, however minute, can pass through the membrane that acts as a covering to the young roots and root-hairs. But it is a peculiarity of all tillage plants that their roots are slow to take up what we may term "loose" water—that is, water that is free to drain away from the soil. The water they really take in is the water that clings to the surface of each little damp particle of soil, as such water is more highly charged with food slowly dissolved out of the little solid mass to which both the film of water and root-hair are so closely attached. Ordinary digging tends to break up the soil into a finer mechanical condition, and so tends to increase its water-holding power.

Fall cultivation carries the crumbling process much further, especially in the case of heavy or stiff soils. By throwing up the soil in rough ridges, the frosts of winter, by freezing (and therefore expanding) the water within the pores of the soil, causes the coarse lumps of soil to swell, and, because of

this pushing apart of its particles, cohesion is weakened and their former closeness of texture is destroyed. The ridges quickly dry out in the March winds, and are easily pulverized when spring operations begin in the garden. This expansive force of freezing water is by far the most powerful agent at the gardener's disposal for the breaking down of lumpy soil and so far converting it into a mellow and kindly workable condition. Neglect of this relatively cheap and easy method of increasing fertility is a refusal to take advantage of one of Nature's most generous offers to aid the gardener in his efforts to secure the best services of the soil in the bountiful production of crops.

Cultivation and Fertility.

A grower should always think in terms of area of soil particles available for exploitation by roots, rather than in terms of superficial area of his garden. A well-tilled plot of a rood area may be quite as productive as a badly-tilled plot of an acre, as it all depends upon the fineness of the soil. A little hard cube of soil has six sides or surfaces. If it is broken in two, the six sides become twelve, and if these two are again divided, there will be twenty-four sides, over each of which a water film can cling, and so the work of dissolving out plant food substances from the soil can be extended over four times a greater area in the last-mentioned case than in the first. In fact, a cubic foot of soil, such as is used for potting purposes, represents in reality about an acre of absorbing area for roots.

Almost all soils contain practically an inexhaustible supply of plant food, if only it could be made available. The only natural way in which it can be so made ready for the roots is through the dissolving action of tightly-clinging water films. It follows that working the soil is equal in effect to manuring it. Furthermore, such thorough cultivation, by increasing not only the water-holding power of the soil, but also its air-holding capacity, encourages the growth and general activity of useful bacteria in the soil, and especially such forms as are engaged in the work of nitrification.

Strawberry plants should be mulched late in the fall to prevent any injury from alternate freezing and thawing during the winter.

Cut out all dead canes from the raspberry and blackberry plantations, leaving only wood which grew this year.

Grapes should be pruned and covered before the ground freezes.

Delay pruning fruit trees until March or April.

Plan Now for Next Year's Perennial Border

John Gall, Inglewood, Ont.

THE man of moderate means who desires to see his small garden plot a mass of bloom during the summer months, and indeed well on into the fall, is often at a loss to know how best to achieve his purpose, and at the same time keep his expenditure within reasonable bounds. His quest for information leads him from time to time to the classic treatises on gardening, and he is told to raise this in heat, to prick that off and harden in a cold frame, to pot on the other, and to pinch out a fourth species of plant, until he recoils in despair from the effort to master the technicalities of the science of horticulture, and either calls in the jobbing gardener to "clean up" the borders or abandons the attempt to achieve order out of chaos.

He is not, perhaps, the owner of a greenhouse and a frame, and even if he were he has not the leisure to devote the many hours that are necessary to the successful raising of seedlings or the propagation of cuttings. All these operations are fascinating in the extreme to the amateur who boasts proudly, and not without reason, to his neighbors of his batch of plants from seed, or that bed of plants from cuttings. It is the aim of most amateurs to be able to say, "I did that. It is my own work from beginning to end."

This is all very good; but as I have said, it is not everybody who has the means, the time, or the inclination to attempt such horticultural flights. What, then, is the alternative? It lies in the cultivation of that class of plants known as hardy perennials. No finer sight can be imagined than a well-stocked herbaceous border when the flowers are at their best in July, August and September. The formal beds of scarlet geraniums and blue lobelia, beloved of the jobbing gardener, pale into significance beside the stately grandeur of well-grown perennials. The initial cost of such plants hardly exceeds that of more formal bedding subjects, and once overcome the owner of a group of hardy perennials has the satisfaction of knowing that his purchases possess the merit of permanence.

The great attraction which the perennial border has for the average amateur gardener is that when once it has been well and truly planted—that is to say, when a suitable soil medium has been provided, and due attention has been paid to the requirements of the plants in regard to disposition and situation—it demands comparatively little attention, save for an occasional

loosening of the surface soil with hoe or fork, and an annual top-dressing of manure. The plants take care of themselves. They put forth their fresh green spikes through the soil with the advent of sunny days in April, they attain the zenith of their splendor in summer and early fall, and then die down to be stirred into activity again and again as season follows season.

Preparing the Bed.

First of all, in planting a perennial border—and, indeed, in every other branch of gardening—comes the preparation of the soil. In the well-ordered garden this will be done in late summer or early fall. The chief point to remember in preparing the soil for perennials is that the border is to be the home of your plants for a number of years. The less you disturb them the better they will grow. Therefore dig deep and dig thoroughly. If you find that the good soil is two feet deep you may rest assured that you have it at sufficient depth.

It is possible, however, that you will have to contend with heavy clay or a light sandy soil, and that the drainage of the subsoil may be imperfect. The great object to be aimed at is to give your perennial plants a sufficiently deep root run. Where the top layers of soil are defective they should be treated so that, if they are too light, moisture-retaining substances are incorporated, and if too heavy, the lighter qualities of sand and road grit may be introduced, so as to bring about a better condition of porosity.

The building up of a border with

entirely new material will be found to be a somewhat expensive undertaking, but where it is possible the results will be nothing but satisfactory if the following method be adopted: The old soil should be taken out to a depth of two or three feet, the subsoil loosened for purposes of drainage, and the vacant space filled in with layers of well-rotted manure towards the bottom, old pieces of turf, road grit, and loamy soil. The surface should be raised and rounded to allow for the inevitable shrinkage which will follow as the soil settles down.

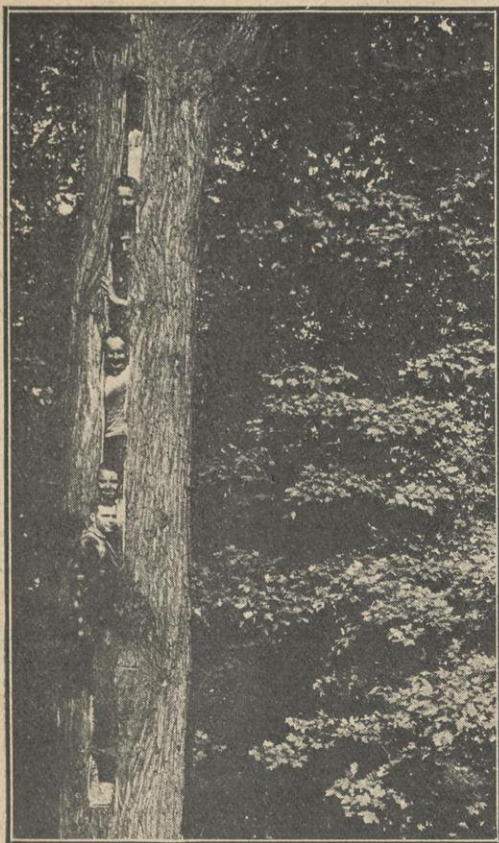
And here let me emphasize the desirability of generosity in regard to the width of the border. If the plants are not to be cramped for room; if they are to be allowed to flourish, and to attain the breadth and height that are natural to them, then be assured that they will only reach the standard of perfection of which they are capable if they be accorded spacious treatment. By this I mean a border not less than four feet wide, and if possible six. Its length will, of course, depend upon the dimensions of the garden—the larger it is the better chance will it give of effective grouping and the adoption of suitable color schemes.

What to Plant.

It is an education in gardening to study the catalogues of some of the leading growers of perennials, such as advertised in *The Canadian Horticulturist*, and who furnish them free on application. The classes are all carefully tabulated, and contain notes of the utmost value to the amateur.



Beekeeping and the growing of fruit and flowers make a splendid combination. This illustration shows the combined apiary, orchard and garden of Wm. Gibbs, Appin, Ont.



Tree doctors at work. The rotted centre hollowed out of a tree in a garden in Montreal, preparatory to being filled with cement.

A selection of the plants that are intended to furnish the border having been made, the next essentials are firm planting, and discrimination in the choice of positions, so that the effective groupings and color schemes can be arranged. Even the beginner in gardening will be familiar with the good old rule that tall growing subjects should be placed at the back of the border and low growing plants in the front. But he will be wise not to observe it too closely. Its adoption will inevitably result in a dreary and monotonous uniformity, which it should be his object, in this as in all other gardening operations, to avoid. By all means let him place his hollyhocks and rudbeckias towards the back, but do not let him hide his early flowering irises, his coreopsis or his choicest Michaelmas daisies in such a manner that their full beauty is obscured. Let him break up his border by judicious planting. A well-arranged border is like a shifting kaleidoscope, but to realize this constant variety the color, height, and habit of each individual plant need to be studied.

The propagation of paeonies from seed is a slow matter, for it takes four or five years for a paeony to grow from the seed to the blooming period, and even then it will hardly repay the trouble, for the chances are all against producing anything worth while.—J. H. Bennett, Barrie, Ont.

Ginseng: Some Practical Pointers on its Cultivation

H. S. Watson, M.D., Newmarket, Ont.

I HAVE been interested in ginseng growing for the past ten years, and have found it exceedingly interesting and also profitable.

Notwithstanding the fact that I have many reverses due to inexperience, I have still continued, with a good degree of success. I hope that this article may be of use to some who are starting out in the business, and may save them much expense, loss and worry.

Cultivation.

Select a sand loam soil, cultivated to a depth of from ten to fifteen inches. To enrich the soil, use well-rotted manure, preferably from the cow stable, also fine, rotted wood, chip-dirt and leaf-mold from the woods if procurable, and mix thoroughly with the soil.

Make your beds four feet six inches wide, and any length you may wish. They will hold nine rows, six inches apart lengthwise, and set plants six inches apart each way. Some prefer them eight inches apart lengthwise in the rows.

Make the aisles at least eighteen inches wide and raise the beds as much as six inches higher than the bottom of the path between them, in order to procure free drainage. Select your ground where the water will not stand in the spring or at any other season of the year.

I lost about five thousand four-year-old plants one spring in that way. Don't do the same thing; it is too expensive.

Shading.

Lath shading is the best to use in open cultivation. Put your lath up in sections, made by nailing four-foot lath on 2½-in. by 1-in. strips. Set it on edge with the same material nailed on the ends, which you will find the easiest to handle if made about twelve feet long. Nail the lath not more than one-quarter of an inch apart.

Wire these sections to 2 x 4 in. scantling nailed to the tops of posts at least six feet high above the surface of the beds. The higher the posts the better to prevent *Altenaria Blight* (which I have never had on account of my high shading), which comes from dampness and lack of free circulation of air.

Seed Propagation.

Gather your seeds as soon as ripe or when they begin to fall to the ground. This is from the first week until the end of September, owing to the season in this section of Ontario. The season is later in other parts of America, I suppose.

Place your berries in a box or barrel between layers of dry sand, well sifted through a very fine screen. I use the ordinary mosquito wire on a wooden frame. After four or five weeks I put them through the same screen, using water to carry through the sand and pulp, and the seeds remain in the screen.

I then make a box large enough to hold my seeds and about four times the quantity of soil. A hole is dug deep enough to hold the box, with about six inches of earth above the top. Nail wire netting on the open bottom and place the box in the hole. Sift the sand and dirt, one-third of the former to two-thirds of the latter, into the box about one inch deep.

Put in a layer of seed and alternate the seed and dirt till completed. Then cover with netting and then with earth. The netting above allows of free drainage below and moisture from above, and keeps out mice. Allow the seed to remain from the fall they are gathered until the following fall, when you sift again and sow in nursery beds.

Nursery Beds.

Make your nursery the same as the other beds, only have the dirt as finely pulverized as possible. Sow the seed so they will not be too thick, say three or four to the inch, and cover about two inches with finely-pulverized rich soil. Cover with very fine leaf mold, and when one or two years old transplant to the permanent beds.

Covering.

To cover your plants for winter, use wood-leaves three or four inches deep, and allow them to remain till the following summer. If they matted down during the winter, stir them up as early in the spring as possible, to prevent smothering the plants.

I have found ginseng a profitable crop, requiring but little labor and only a small amount of land. One acre will contain about 120,000 plants.

I have used for the past five years the natural woods and shade, but I believe it is overbalanced by the rapid growth under artificial shade. The roots of the trees take up too much moisture and substance from the soil to promote the rapid growth of the ginseng roots.

The growing of ginseng will be found a most healthful and pleasing as well as profitable occupation for any person in delicate health, as they will, when they become interested, spend a great amount of time in the garden, watching the growth and development of their enterprise.

✕ Preparations for Winter

H. H. Selwyn, Kirks Ferry, Que.

THE editor has asked for a short account of my methods in regard to winter preparation in connection with the apiary. We have been hard pressed to accomplish the necessary work in connection with the closing down of 135 strong colonies in order that the writer might get away by September 18th. Some beekeepers may consider this almost an impossibility, and it must be admitted, September 15th is early to have all fall work completed. Nevertheless, it may be safely said, that all the colonies are now in good shape for winter. The only thing that remains is to carry them into the cellar.

During the swarming season it is important that young queens be introduced into every hive. This will guarantee an abundance of brood late into the fall, and a resultant strong force of young bees for the spring upbuild. This is a point not to be lost sight of. We figure it worth while, even if the queens have to be bought, in increased production of honey the following year.

In operating 8-frame L. hives, there is considerably more work in rounding the bees into shape for fall, than with ten or twelve frame hives, especially if run for extracted honey. To give a really good queen enough room, it is necessary that she have access to 16 frames, until July or later. At approximately July 1st she should be driven below with the smoker, and an excluder slipped between bodies. This allows the brood to hatch in the upper eight frames in time for extracting.

With the removal of surplus in August, care must be taken that the hive be not left devoid of honey, as under normal conditions the queen will continue to utilize the entire brood chamber below the excluder for laying. There is opportunity here for starvation taking place, if the operator does not feed or return part of the super.

Mention might be made of the opportunity this fact offers for cleaning up European Foul Brood. The bees separate the honey and brood, and if all supers are removed, practically no honey remains to carry disease germs, and sugar syrup may be fed plentifully. This is one good point remaining in favor of the old standard hive.

This year, owing to the high price of sugar, it is doubtful if much sugar will be fed. In so far as we are concerned, we have been fortunate in securing a big crop of honey, and have held in reserve sufficient full extracting combs to give each colony four at least, in

place of the empty ones to be found at each side of the brood nest as the queen curtails her laying. Those containing small quantities of brood were stacked up over weak colonies, and will be removed later. This is the only work left undone in so far as manipulation of frames is concerned. In carrying out this work during the past few weeks, great difficulty was encountered owing to the ferocious robbing which began every time a hive was opened, caused by inability of the bees to work on the fall flowers.

Only by working at 5 o'clock in the morning, and in the rain (of which we have had far too much), could anything be accomplished, and even then Nature stepped in and made things more difficult, by sending wearying, humid weather, which caused the bees to be on the wing at the first glimpse of daylight. A tank of ten to one mixture of sugar and water was set out to divert their attention, as a last desperate resource, and even that failed to have much effect. Before all supers were off and brood chambers looked to, in so far as honey was concerned, more than one hive succumbed to the relentless efforts of the robber bees. This was the penalty for rushing fall work unduly, but it was a case of necessity.

In order to insure non-leakage of bees, and good ventilation for the cluster when packed away in winter quarters,

new 8-oz. duck quilts were placed over each colony. When covers are removed preparatory to carrying in, no bees can escape and disperse the green help usually hired for the job of carrying.

As a rule, Mr. P. H. Selwyn blocks the fronts with tissue paper, (which may be secured in rolls) and removes it after the bees are in and all doors closed. This is an expert's job. No green hand can work down long tiers of colonies, by the aid of a candle, in a closely crowded cellar, and stand the buzzing, climbing, stinging bees which come with the paper blocking. A few minutes, however, and they are all free and may then be left to rest in peace and quiet for the long ensuing months of winter.

The three chief points of fall preparation, as outlined in the foregoing, are as follows:

1. Young queens, and these ensure brood rearing late into the fall.
2. Strong force of young bees, with vitality. This comes automatically with the introduction of young queens in August.
3. Sufficient honey or sugar syrup to feed the cluster during winter, (30 to 40 lbs.) and tide them through spring until fruit bloom.

The Alexander treatment has not been a success when used on black bees.
—Chas. Stewart, Albany, N.Y.



The Guelph College Exhibit at the Canadian National Exhibition. See Page 239.

Rearing and Introducing Queens

Mrs. W. H. Hambly, Rose Island, Man.

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THERE are several plans of rearing queens artificially, but for the present we will consider only two, making use of a queenless colony, and making use of a second story of a very strong colony, confining the queen to the brood chamber by a sheet of perforated zinc. In either case the bees should be stimulated by giving them a little half and half syrup daily, beginning four or five days before they are to commence work on the queen cell. A queen-rearing outfit may be had of any supply house and a choice breeding queen is necessary to supply the larvae. If no queen cells are available naturally, a queen may be removed from a colony and the bees allowed to start queen cells to provide the royal jelly. It is essential though that if this colony is to be used for queen-rearing that all of these cells are removed before the grafted ones are given.

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Attach twelve or fourteen cell holders to a cell bar, and insert embryo cells. Have ready a supply of unsealed jelly, and a frame of larvae from your best breeder. Stir the jelly with your jelly spoon so that it will be of even consistency and put a dot of it in each waxen cup. Hold your frame of brood so that you can see plainly. Very carefully slip the transferring needle under one of the tiniest worker larvae, one just hatched from the egg, and place it on the dot of jelly. It is then placed in an artificial queen cell, and a row of these cells is fastened on a bar.

It is important that this grafting operation should take place in a very warm atmosphere. The top bar is then placed in the cell frame in the centre of the hive and the bees will complete the building and provisioning of the cells. It is far better where practicable to give the embryo cells to a strong second story, placing them between two frames of unsealed brood, as queenless colonies mean a serious loss of bees and honey. In five days the cells will be sealed, and the bar may be hung lower in the frame, and another set of embryo cells given.

Ten days after grafting the first cells are ripe, and must be taken out before they hatch. Very gently, without jarring or shaking, transfer them to the nursery cages, smearing a little honey on the tips of each so that the queen may get a taste as she is cutting her way out. Each cage is provisioned with queen candy made of powdered sugar and honey. This can be made up some days before needed and packed in a bowl. In a couple of days more sugar may be worked in. It should be moist and mealy, not sticky

or hard. These cages may be given at once to nuclei or placed in the nursery frame and hung in a second story till wanted.

Anticipating the hatching of the queens, mating boxes and nuclei must be prepared. A full sized hive may be used, a division board contracting it to two frames, one of bees and brood, and one of honey. We use a mating box containing four one-frame nuclei. Full sized Hoffman frames are separated from each other by bee proof partitions. Any box or board longer and wider than this hive does nicely for a bottom, and an alighting board, and little holes in ends and sides, give each nucleus its own private entrance. At the end of the season six or eight nuclei are united and fed from a Miller feeder and we have a strong colony.

Keep Old Bees In.

Unless nuclei are formed of bees brought from a distance, it is necessary to fasten them in for three days by tacking wire cloth over the entrance to prevent the old bees from coming home. To keep them in a flourishing condition a little syrup should be fed daily, and to prevent robbing they should be placed in a sheltered spot, away from the main yard.

The nursery cage is also a convenient introducing cage, the bees eating out the candy stopper and thus releasing the queen. A newly hatched virgin may often be introduced by simply placing her on the comb, but the cage method is safer.

If nursery cages are not available the cells may be put in West queen protectors and a cartridge full of honey or candy shoved in the bottom. If you have neither nursery nor protector take a piece of wire cloth five inches square. Pinch it up at the corners to form a two inch box, and ravel out a few strands along the edge. Stick a pin in the side of the wooden cell holder and hang the cell on comb containing honey. Place the cage over it, imbedding the edges in the comb. When the queen emerges she will find herself in a nice little room with plenty to eat. A good plan is to cage cell or virgin No. 2 in the nucleus, three days before No. 1 is removed. When No. 1 is taken out No. 2 may be released. A queen usually commences to lay when she is eight or ten days old, or several days after her mating flight.

While we are all willing to take pains to rear queens from choice mothers, it is not always sufficiently emphasized that to secure the best results the drones with which the young queens are mated, should be from choice mothers also. For this reason

wherever practicable, the mating yard should be four or five miles from any other bees.

As soon as the young queen is laying, she may be sold or introduced to a full colony. It is essential enough though to be sure that the colony is really queenless or the new queen will likely be killed. When queens are purchased they come in a Benton cage, having a little hole at one end plugged with candy for the queen and her attendants, and a strip of pasteboard tacked over it. The cage is placed between two frames in the centre of the hive, and the bees attacking pasteboard and candy from the outside release the queens in a day or two. With home-reared queens the Miller cage is very convenient, the principal being the same as in the Benton.

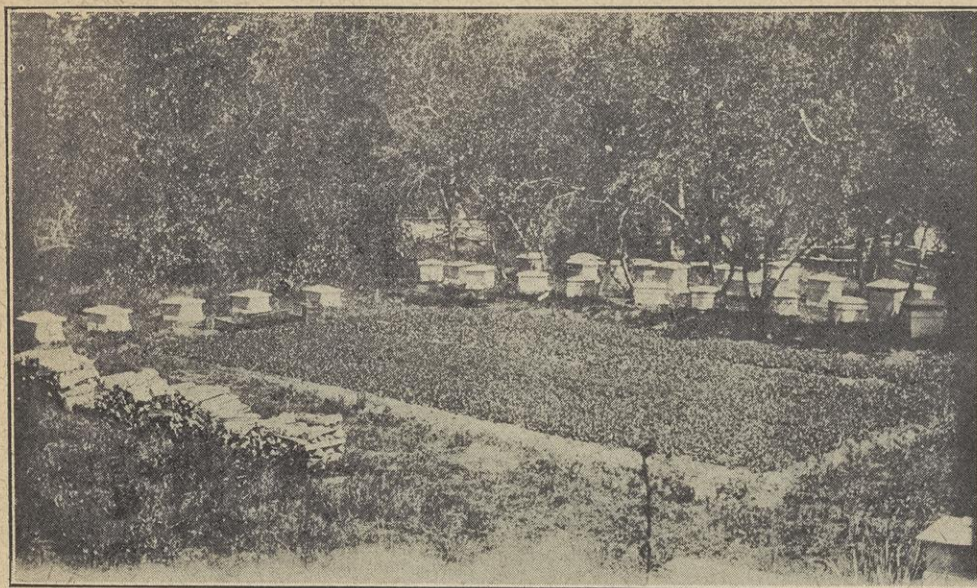
When a queen is to be introduced, so valuable that no chances may be taken, tack wire cloth over the entrance of an empty hive, and put in two or three frames of hatching brood, and one of honey, taking care to brush off every bee. Bring this into a warm room and release the queen and her attendants. In three or four days there will be quite a little cluster of bees in the hive, and it may be set out, and the wire cloth removed.

The smoke method seems to be much practised. Three full puffs of dense cool smoke are blown in at the entrance, which is tightly closed. In half a minute the bees will be roaring. The new queens then run in, followed by another puff, and the entrance kept closed for ten minutes.

Pointers on Wintering

AT the short course in apiculture conducted last winter at the Guelph Agricultural College, several of the speakers dealt with subjects relating to the successful wintering of bees. Mr. Morley Pettit said that the requirements include strong colonies and young bees of a quiet disposition. They should have a good young queen. The stores should be of the best quality, well-ripened honey or thick syrup of granulated sugar, and at least 35 to 45 lbs. per colony. The combs should also contain pollen.

Dr. Burton N. Gates stated that only the best granulated sugar, thoroughly dissolved in water, should be fed to bees for winter stores. They should be fed in the second or third week in September, so that they have time to arrange their stores. For feeding, use any convenient feeder affording rapid feeding and safety from robbing above or below the brood. Inverted gem jars with cheesecloth covers, honey pail with perforated cover, and tin pan with floats in empty super all make satisfactory feeders.



Part of the apiary of Harris & Son, situated in the Okanagan in British Columbia.

Mr. Kingsmill, speaking on "Packing Bees for Outdoor Wintering," gave the advantages as follows: Bees may be packed earlier and thus receive fall protection. Second, there is the possibility of a cleaning flight during the winter. Third, no need to unpack till settled weather in the spring, thus the bees receive spring protection without extra work.

Mr. H. H. Selwyn, who is a college local inspector, speaking on "Cellar

Wintering," stated that the cellar should be constructed under ground in light soil. It should be well ventilated by a subterranean inlet pipe, to ensure an even temperature.

The next lecture was "Robbing of Bees," by Dr. Gates. He gave the following indications of robbing: Rapid and hesitant flight around entrances, and a high tone set up, due to incessant flight.

Getting Ready for Winter

W. A. Chrysler, Chatham, Ont.

WHILE we are making arrangements for wintering our bees and preparing them for winter it would be well to take into consideration the different conditions that may be present this year. Last year, queens that were not the best, owing to such a poor honey flow, did very little breeding in September in this locality, and consequently went into winter quarters with a minimum of young bees that could live long enough to rear new batches of brood the following spring. Aster honey has been constantly blamed as a poor wintering food. It is, however, gathered at a time of year when it encourages late breeding; it being one of the factors of successful wintering. The quality of the honey is such that it granulates easily when not thoroughly ripened and inclined to give the bees the dysentery. We have read reports of very successful wintering from aster honey from bee-keepers whose statements could not be questioned.

It would be well to know the conditions that will make it a safe wintering food if it is possible under economic arrangements. It would be necessary to work out certain theories by experiments to arrive at facts that will en-

able us to overcome some of the setbacks that bee-keepers have.

In looking back over past years I can remember one particular year of having a good flow of an inferior honey, supposed to be from a plant called "Spurges," which lasted very late in October. The hives were boiling over with bees on going into winter quarters. This, no doubt, kept the brood chambers warm, and ripened the honey to a great extent. There was a large death rate of the older bees during winter, but all wintered well. The lesson that experience seems to indicate is that if our hives are protected during the chilly weather in early fall, queens will lay better, honey ripen better, and become well sealed.

Until we have more accurate knowledge of stores for winter, I would recommend that no matter what quantity of stores are in the hives, if it be not clover honey, to feed at least ten pounds of thick sugar syrup after the queens have stopped laying in October. Failing or poor queens should be replaced by young queens from a number that every beekeeper should have on hand for the purpose.

A cheap and very satisfactory way to protect colonies of bees in fall or

spring is to use tar paper cut in lengths long enough to go around the hive and lap about one foot; double it up narrow enough so that when placed around the hive there is enough extends above the hive that it will fold over the top under the cover. The sun's rays on the tar paper will warm up the hive inside and force out condensed moisture.

A Beginner's Experiences.

A. J. McLellan, Mille Roches, Ont.

IBECAME interested in bees in August, 1911, by helping my uncle extract the season's crop of light honey, which came to about 6,500 lbs. He contracted an incurable disease and was taken to the hospital shortly after, so I had to extract the dark honey and feed the bees for the winter.

We put 125 colonies in the cellar that winter, but took out only 105 in April, 1912. My uncle came home shortly before taking them out, and although confined to his bed and suffering continually, he directed me in my work all summer and until he died in December, 1912. He was a man of great intelligence and an enthusiastic beekeeper.

I raised fifty-seven queens that year by the artificial cell cup plan, my best case being nineteen virgins from twenty-four cells grafted. I had the queens mated mostly from three-frame nuclei, putting the queen-cell in ten days after grafting, and forming the nucleus twenty-four hours before putting in the cell.

We extracted 5,350 lbs. light honey and 1,500 lbs. dark honey in 1912, and put away 114 colonies for the winter. We took out 108 colonies the following April, and started an out-apiary five miles from home with thirty colonies. In moving them we left off the bottom-board and nailed on a screen having a frame 16 3/4 by 20 (size of the hive body). In the first load of ten hives we moved, there was about a gallon of bees killed by the combs shifting, so we put small nails in the ends of the frames of the next two loads, which prevented any loss. I was surprised at the ease with which they were moved, as I always thought it was difficult to move bees successfully. Not a bee escaped in transit.

The next season's crop was almost a failure, there being only 1,400 lbs. of light and 1,100 lbs. of dark honey. The number of colonies was increased to 135 in the two apiaries.

In the spring, 1914, we put 134 colonies out of the cellar on the evening of April 17th, and the next day being fine they started to take in pollen towards evening. I took 40 colonies to the out-apiary (having wintered them all at home) about May 1st, and got a surplus of 1,200 lbs. light honey.

A Valuable Work on Beekeeping

I have been asked to submit a review of the book entitled "Beekeeping," by E. F. Phillips, Ph.D., of New York.

As stated in the preface, this book is the result of an effort to present a logical discussion of the various phases of the complex subject of bee-keeping. It was not planned as a book of rules to which one may go for directions for each day's work. "The activities of bees vary during the season and no two localities present to the bees and their owners exactly the same environmental conditions, so that the successful bee-keeper is one who has a knowledge of the activities of bees whereby he can interpret what he sees in the hives from day to day and who can mould the instincts of the bees to his convenience and profit."

This book on bee-keeping will be welcome, for it treats the subject from a somewhat different point of view to that of the present widely read works. It is a comprehensive and well reasoned account of the bee-keeping industry based wholly on fundamental principles, the different features being presented in their logical order and only the essential manipulations described. It covers the whole field of bee-keeping, but in so succinct, logical and lucid a way that no part is involved or laboured, and the whole book may be read with sustained interest and much profit by all who have average intelligence and education. It is essentially scientific and presents bee-keeping from the scientific standpoint, and at the same time simplifies it so that it can be understood by all. Not so long ago American bee-keeping was almost entirely practical. Science has now taken the hand of practice and is training it to know itself. It needs only the discerning mind to extract from the book information and help that could not be explained in the ordinary way in a book twice the size. The book is a trained guide, assisting each bee-keeper to work out his own particular problems. For the use of teachers of apiculture it will be especially useful.

The bulletins on different phases of bee-keeping that have been published by the United States Department of Agriculture since 1905 are here summarized and welded into a harmonious whole and their best illustrations are reproduced; at the same time much additional matter is given.

The attitude taken is analytical and critical, and popular fallacies and statements made without proof are exposed quite frankly. For instance, the mythical drop of poison that the worker is said to put into the cell of honey just before sealing to preserve it—the alleged detecting by the lack of pollen-gathering in the spring that a colony is queenless, the supposition that the bee is a brilliant example of industry endowed with high intelligence, and the wide belief that some honeys are poisonous to human beings, all receive the lash. "It can scarcely be said that we know that the giving of substitutes for pollen is serviceable in brood rearing, but . . . no harmful results are recorded from the practice." The source of the brood food is stated to be still unknown.

Interesting comparisons between bee activity in the north and in the tropics are made. The seasonal influences that go to make up the year are intensified in the north and the proper control of bees is more difficult here than in the tropics, where every day to the bees is as the day before except for the indistinctly circumscribed honey flows and temporary disturbance in weather.

Swarming is particularly prevalent in northern regions, where it comes before and during the white honey flow, but further south the swarming period is less definite and more prolonged. Queens live longer in the north than in the tropics. Attention is called to the fact that bees are cold-blooded, and lose their power of movement at 45 deg. F. Queen cells built in advance of the laying of eggs in them are described as "pre-constructed" cells, the term, "post-constructed" cells being employed for cells that are built around the small larvae.

It is noted that the bees of an issuing swarm have a tendency to go up even inside the hive. When the queen does this she cannot get out and the swarm returns.

Almost the only place where the author allows himself poetic license is in describing the issue of the swarm, it being stated that "the bees whirl in bacchanalian delight as if drunk with joy."

Among the spring manipulations, spreading the brood and feeding are regarded as questionable. We are warned to avoid forming conclusions as to the functions of various organs from supposed human homologies, the structure of the bees' body being quite unlike that of the human body. The author points out that nowhere in the entire discussion of bee activity is it more necessary to avoid comparison with our own actions than in the field of the senses. Man is capable of conscious and volitional acts, while evidence of such acts in bees is lacking.

At a temperature of about 57 deg. F., the bees form a cluster, and if the outer temperature drops below that point they begin to generate heat. From the way in which bees perceive and regulate changes in temperature, it may almost be believed that they have a temperature sense superior to our own. Bees acquire knowledge, and evidence that they possess memory is shown in the finding of the hive and by the fact that memory is sometimes lost. The author believes that few places are now overstocked with bees, and that the subject of overstocking "worries the bee-keeper more than the facts warrant."

Attention is called to two essentials for the production of a maximum honey crop—(1) getting plenty of bees of the right age in time for the harvest, and (2) keeping the bees in proper condition. The first essential applies especially to the work in the spring, the second applies chiefly to the control of swarming.

There is a noticeable absence of the detailed description of apparatus, with dimensions, etc., so common in most bee books. Almost the only dimensions given are those of the Langstroth frame, N.P. The discussions on wintering and on swarming and its cause and control are valuable. The author inclines to the view that the cause of swarming is not unlikely to be a preponderance of young bees. In the discussion on the prevention of swarming, no mention is made of giving the queen more room to lay, but the principle of reducing the crowding of young bees in the brood nest is looked on as essential.

A useful list of plants producing nectar and pollen, including about 500 different kinds with notes on each, is included, and the study of the sources of honey around the apiary is urged in more than one place. This book is issued by The MacMillan Co., Toronto; contains 457 pages, sells for \$2.00, and may be purchased through The Canadian Horticulturist and Beekeeper.—F. W. L. S.

Honey Exhibits at Toronto

There was only one exhibitor of honey at the Toronto Exhibition this year, the veteran exhibitor, Mr. Geo. Lang, of Milton, Ont., whose display was a most creditable one. This year instead of the Beekeepers' Association making an exhibit as an association the officials of the exhibition decided to return to the giving of prizes. As Mr. Lang was the only exhibitor he won the first prize. As the money which last year was given to the association to meet the expense of putting up an exhibit was this year divided into a number of prizes and as only the one prize was awarded it means the association this year saved considerable money over last year, and will probably be anxious to continue this arrangement, next year especially, in view of the fact that Mr. Lang made such a splendid exhibit.

Of late years the sale of honey even in glasses at the Exhibition has been prevented, much to the disappointment of hundreds of people who, seeing the exhibits, were anxious to make purchases. This year this restriction was removed, with the result that Mr. Lang found his goods in considerable demand.

In addition to Mr. Lang's exhibit in the Horticultural Building, Mr. Pettit had an exhibit in connection with the Guelph College exhibit, which was staged in the Government Building. Mr. Pettit's exhibit was purely educational in character, illustrating different hives and utensils used in bee-keeping, as well as showing photographs of apiaries and work connected with beekeeping.

Under the grand stand an exhibit of bee supplies was made by the Canadian Branch of the Root Canadian House. It was unfortunate that these different exhibits had to be so scattered, as it necessitated considerable travelling on the part of those interested in beekeeping who desired to see all three exhibits.

Honey for the Soldiers

Morley Pettit, Guelph, Ont.

The beekeepers of Ontario are rejoicing in a good crop of honey. Three hundred members of the Association have reported over one and a half million pounds. While these are no doubt the most extensive of the ten thousand beekeepers in the province, the total crop must be large.

While we are enjoying abundance in this and other crops I am sure that every bee-keeper will be glad to learn that arrangements have been made with the Canadian Red Cross Society, whereby we may share our honey with our Canadian boys of overseas contingents who are fighting our battles so bravely, or are lying wounded in hospitals.

Contributions of honey are already coming in. There is no limit to the size or number of offerings which will be accepted and sent forward. The honey should be extracted and granulated in 60 lb., 10 lb. or 5 lb. tins, well sealed and securely boxed. None but first quality clover honey should be sent. Unripe honey, particularly basswood, or any of the darker grades would be sure to arrive in poor condition.

Donations of honey should be sent by freight as soon as possible to the Canadian Red Cross Society, 77 King St. E., Toronto. The railroad companies have offered to carry it free.

The Brant County Beekeepers' Association has decided to donate a half ton of honey to the Canadian troops at the front. Most of this has already been given by the members.

An Educational Exhibit

The exhibit of the Apiculture Department of the Ontario Agricultural College at the Canadian National Exhibition this year occupied one table and part of another. The rest of the end of the building in which it was shown was occupied by other departments of the College. The exhibit consisted of a model of an apiary constructed of hives built to scale 3 inches to the foot. These were arranged in the same order they would be in the regular apiary, the table being covered with green burlap to represent sod, and the hives interspersed with small palms and ferns to represent trees and shrubbery. There was also a model of a quadruple-hive winter case, also built to scale, and several small implements used in beekeeping, including the gearing of a new friction drive power honey extractor.

The feature of the exhibit which attracted the most attention, however, was a tall observation hive containing five Langstroth combs, one above the other, covered with bees, also a single comb observation hive and a pound package of bees. An attendant was constantly in charge during the two weeks of the exhibition, and was kept busy most of the time answering questions about bees and honey.

Dark Honey Crop Report

The Crop Report Committee of the Ontario Beekeepers' Association met on September 9th. It was found that 105 members had reported 116,400 lbs. of dark honey from 5,807 colonies, being an average of 20 lbs. to the colony. This is about double last year's average. The committee advises members to ask 7½¢ to 8½¢ per lb. wholesale, depending on the size of package and the quantity sold in one order. No buckwheat honey should be retailed for less than 10¢ a pound.

The local demand for white honey is exceedingly good, as many people are buying honey to put away instead of canned fruit, and the prices recommended by the committee are being realized.

Wholesalers are cautious about buying all lines of goods, including honey, and naturally have made an effort to buy as low as possible. A few large orders have been filled at a slightly lower figure than recommended, but these orders were for ton lots.

There is yet a large quantity of light honey unsold, but the market is firm and a great many of the smaller beekeepers re-

port their crop all sold at prices recommended by the committee. All considered the committee feels that honey need not be sold below prices recommended.

Signed by the Committee:

Wm. Couse, W. J. Craig,
H. G. Sibbald, Morley Pettit.

Ontario Beekeepers' Convention

The annual convention of the Ontario Beekeepers' Association will be held in the York County Council Chambers, 75 Adelaide St. East, Toronto, on Tuesday, Wednesday and Thursday, Nov. 23rd, 24th and 25th. The Executive have drafted a very attractive programme that is sure to prove interesting and instructive.

The principal outside speaker will be Dr. E. F. Phillips, in charge of Bee Culture Investigations, U. S. Dept. of Agriculture, Washington, D.C. Dr. Phillips has been investigating wintering conditions of the colony, and at the opening session, Tuesday afternoon, will speak on "Temperature and Humidity in the Hive in Winter." In the evening he will give an illustrated lecture—"Some Beekeepers of the United States." Being an extensive traveller and a keen observer, he is sure to have a valuable store of information for this occasion.

On Wednesday morning, Mr. H. G. Sibbald, a large honey producer of Ontario will deal with "Outdoor Wintering," and Mr. Morley Pettit, Provincial Apiarist, will give a summary of the year's work. The varying seasons of the past three years have introduced new features into bee management. Swarm control and summer protection have been practised by Mr. F. W. Krouse, and he will relate his experiences. For the beginner, as well as the experienced beekeeper, a discussion on honey production, both comb and extracted, will be interesting.

An exhibit of apiary appliances will be a special feature of the convention. These handy tools and jigs are the inventions of practical beekeepers and greatly assist, both for speed and accuracy, many of the small operations and manipulations about the apiary. Time will be allotted during the last session on Thursday afternoon for an address on "Modern Apiary Equipment and Buildings," by Mr. Wm. Elliott, Adelaide, Ontario. Mr. L. Caesar, of the Department of Entomology, O. A. College, Guelph, will discuss "Poison Sprays and Their Relation to Bees."

Programmes will be sent to members of

the association as soon as final arrangements have been completed. For further details address the Secretary-Treasurer, Morley Pettit, O. A. College, Guelph.

Notes from New Brunswick

H. D. Durost, Provincial Apiarist, Woodstock, N.B.

Very much against our will, we must admit that foulbrood has a foothold in New Brunswick. Ten colonies out of twelve were found diseased and treated by the writer in a yard in Kings county, and at least two other cases are known to exist in the south-eastern part of Westmoreland county. These yards are under quarantine, and nothing will be allowed to be shipped out of them, or removed from the premises, until they are free from the disease.

Now that the disease is known to be present, it is up to every person wishing to buy bees to first get in touch with the Department of Agriculture, or with the writer, and learn where the disease exists before having bees shipped to him from any part of the province. We have already emphasized the fact that there is no necessity whatever for going outside the province to get bees.

At time of writing, we are very busy getting ready for the exhibitions and fall fairs. The writer will give demonstrations in the handling of live bees at St. Stephen, Fredericton, Centreville, and at other points. In addition to the exhibits under the prize list, the New Brunswick Beekeepers' Association will put on a general exhibit of comb and extracted honey.

We are sure that we have succeeded in convincing at least one apple grower that bees are a mighty good thing to have in the orchard. We first induced him to get two or three colonies of bees. We then went to his orchard and enclosed one of his young Wealthy trees, that showed a good number of fruit buds, with a tent of cheesecloth—to prevent the bees and other insects from getting at the bloom. When the tree was examined later, not a single fruit had set. The other Wealthys surrounding this tree were well loaded. Unfortunately, in other orchards where the same experiment was tried, little or no fruit set on any of the young trees. There were no bees in these orchards.

The executive of the New Brunswick Beekeepers' Association has decided that the annual meeting of the Association will not be held until some time during the winter, probably at the time of the Farmers' and Dairymen's Association meeting. The results have not been satisfactory when the meeting was held during exhibition week.

Apiary Exhibits at Vancouver

A creditable display of apiary products was made at the Vancouver Exhibition, although hardly as large a one as might have been expected in view of the increase that has taken place in the industry in the province.

The following won prizes:

Best 12 sections of honey, 20-lbs. of extracted honey in glass jars—1st, J. Brooks, Vancouver; 2nd, Surprise Poultry Yards, Collingwood.

Best display of variety—1st, G. W. Stones, Vancouver; 2nd, Surprise Poultry Yards, Collingwood; 3rd, A. Keir, North Lonsdale.

Best exhibit of bees with queen, single comb—1st, J. Brooks; 2nd, J. E. Owen, Vancouver.

The Canadian Horticulturist and Beekeeper is so interesting and so practical that I cannot do without it.—Ad. Louzeu, S.M.M., Huberdeau, Quebec.



Home Apiary and House of A. J. McLellan, Mile Roches, Ont. It is protected on the north-west by a thick bush.

Packages for Canadian Cherries

Edwin Smith, of the Dominion Fruit Division, Grimsby, Ont.

WITH the progress being made towards fruit package standardization, we see various districts holding up their favorite package as standard for every kind of fruit. After a few seasons the same districts may be inclined to use an entirely different package, and at the same time that they are tearing down their old standards they will be clamoring to have their new standards recognized. It is well to change standards if occasion thoroughly warrants it, for the best possible package for each kind of fruit needs to be used in order that the growers may receive the greatest returns and the consumer value for his expenditure. But before establishing standards, we should thoroughly test packages in order to determine the one best adapted to the local and market needs.

During the past season, tests of this nature were started with cherry packages under the Precooling and Transportation Branch of the Dairy and Cold Storage Commissioner, Mr. J. A. Ruddick. As to which is the best package for sweet and sour cherry shipments, it has been a very unsettled question in the various cherry districts of Canada for a number of years. British Columbia has been using the 4-basket plum crate largely for both sweet and sour cherries, with some question as to whether it was the best package they could use. Ontario has been using the 11-qt. basket for local shipments, and both the 11-qt. and the 6-qt. Climax baskets for distant shipments of sweet and sour cherries.

The introduction of the strawberry crate into western districts for sweet cherry shipments, and the unpopularity of the 4-basket crate in the prairie markets, made the cherry package problem very unsettled, especially from a British Columbia standpoint. The object of the past season's tests was to secure information that would lead to a more standard package for Canadian sweet and sour cherries.

Shipments were made in the following ways:

1. Sour cherries, warehouse pack, 6-qt. Climax basket.
2. Sour cherries, warehouse pack, 4-basket plum crate.
3. Sour cherries, orchard pack, 6-qt. Climax basket.
4. Sweet cherries, warehouse pack, 4-basket plum crate.
5. Sweet cherries, warehouse pack, 24 4-5-qt. Hallock strawberry crate.
6. Sweet cherries, warehouse pack, 24 full-pint Hallock Strawberry crate.
7. Sweet cherries, orchard pack, Woolverton crate—3 6-qt. basket carrier.

The cherries having the warehouse pack were brought to the precooling plant and packed, facing the tops of the baskets with stems underneath, as is the customary way of packing cherries in British Columbia. The orchard-packed cherries were put directly in the shipping baskets by the pickers as the fruit came from the trees, this being the customary way of packing cherries in the east.

The tests with sour cherries were made in Winnipeg and Brandon markets. The cherries used were Early Richmonds, picked and packed July 2nd and 3rd, pre-cooled over Sunday, and shipped the following Monday by refrigerator freight.

The average percentage of all waste in the 4-basket crates was 2.5%, market condition good. Average percentage of waste in the 6-qt. baskets, warehouse pack, was 12.9%, with market condition good, while

in the 6-qt. baskets, orchard pack, the percentage of waste was but 4.8%, with market condition very good. The term "waste" included all discolored or injured cherries, and although the percentages seem high, the fruit was really in splendid market condition.

Injures the Fruit.

This shows that repacking sour cherries is very injurious to the fruit, and that those put directly in the baskets from the trees carried in much better shape than those packed in the warehouse. There was not much difference between the carrying qualities of the two baskets when packed the same.

The cost of the 4-basket crate and the packing amounted to 21.3c per package, or 1.06c per pound of packed fruit (20 pounds of fruit per crate). The cost of package and packing of the 6-qt. basket was 6.5c per package, or .81c per pound of fruit (8 pounds per basket). The cost of the 6-qt. basket, orchard pack, was 4c, or 0.5c per pound of fruit.

The average sale prices of the packed and unpacked 6-qt. baskets were the same, this being further argument in favor of picking sour cherries directly into the shipping baskets. The sales of the 4-basket crate, warehouse-packed 6-qt. basket and orchard-packed 6-qt. basket were \$1.46, 59.4c, and 59.4c; the average net returns to grower were 85.1c, 35.7c, and 38.2c per package, and 4.24c, 4.46c, and 4.78c per pound.

In addition to the good carrying features and the net returns secured from the 6-qt. basket, it may be stated that Winnipeg and Brandon markets, as well as other prairie markets, find the 6-qt. the best seller for sour cherries. As to repacking and facing sour cherries, it is evident that this fruit is such that it does not pay.

Sweet cherries, such as the Black Tartarian, Windsor, Smith's Bigarreau, will carry well for six or seven days refrigerated freight, as was shown in this shipment, which included Black Tartarians packed in 24 full pint strawberry crates, 24 4-5 qt. strawberry crates, and in the 4-basket crate. Returns on the Woolverton crate were secured from express shipments to Winnipeg and Brandon. It is evident that this package will carry satisfactorily on long shipments.

The net weights of sweet cherries in the full-pint strawberry crate, 4-5 qt. strawberry crate, 4-basket crate, and Woolverton crate (three 6-qt. baskets), are as follows,

in order of mention: 17 lbs., 24 lbs., 20 lbs., and 24 lbs. The cost of package and packing in order of mention: 32c, or 1.8c per pound; 35c, or 1.4c per pound; 21.3c, or 1.6c per pound; and 24c, or 1c per pound. The average sale price, in order of mention, was \$3.50, \$4.00, \$2.00 (estimated), and \$3.50.

The average net returns that would have been made to the grower in Grimsby, Ont., after deducting all expenses, would have been as follows: full pint strawberry crate, \$2.43, or 14.3c per pound; 4-5 qt. strawberry crate, \$2.75, or 11.5c per pound; 4-basket crate, \$1.31, or 6.5c per pound (estimated from British Columbia Market Commissioner's report for week of July 10th, 1915); Woolverton crate, \$2.48, or 10.3c per pound.

The full-pint strawberry crate seems to be the best package for sweet cherries in prairie markets. It carries the fruit well in the shallow boxes, is the most popular seller, and netted the Ontario grower 7.8c more per pound than the 4-basket crate, and 4c more per pound than the Woolverton crate (6-qt. basket). A trial of this package in the Montreal market showed that it would sell readily at \$2.40 per crate, which is very satisfactory, considering that it was its first appearance on that market.

In conclusion it may be definitely stated that the British Columbia grower is losing money by picking his sour cherries in orchard boxes and repacking them in 4-basket crates. By using careful pickers the fruit will carry far better and make greater returns if picked directly in the 6-qt. shipping basket.

There has been some discussion about baskets not loading well in cars with resultant loss from breakage. Our experience has been that baskets may be shipped in cars as well as boxes if they are properly loaded and braced, leaving a space in the centre of the car for that purpose and bracing the load firmly and rigidly in the same manner that boxes are loaded in cars for safe carriage. In doing this our results have shown 100% free from breakage on hauls of 1,500 miles and upwards.

With sweet cherries we find that all packages are giving away before the full-pint hallock strawberry crate in prairie markets and that it has a promising future in eastern markets for fruit stand trade. As this package is used only with fancy cherries, such as Lambert, Bing, Windsor or Royal Ann, it must be remembered that to top the market only first grade fruit should be used and the boxes must be well packed, facing all of the tops attractively with stems underneath. If the strawberry crate is not to be used, the next best package at present for prairie markets is the 6 qt. basket.

The Fruit Exhibit at the Canadian National

THE display of fruit at the Canadian National Exhibition this year was, with few exceptions, well up to the standard of other years. The apple classes were well filled with no indication of the fact that the commercial crop is badly infected with scab—a tribute to the skill of the exhibitors. The effect of the late season was more to be seen with grapes than any other fruit, these being at least two weeks behind other years in maturity. The soft fruits were decidedly watery and did not keep well. The warm, humid weather at exhibition time also hastened decay, with the result that many of the exhibits had to be removed some days before the close of the fair.

One of the most extensive exhibitors was W. J. Farminger, of St. Catharines, who had a large number of entries in apples, plums, pears and grapes. A. W. Austin, Port Dal-

housie, had entries in a large number of classes, especially in apples, plums and peaches. Prominent among the apple exhibitors was W. E. Weise, Carrying Place, Ont.; J. H. Horning and Bethanbreck Orchards, Ltd., of Waterdown. W. H. Bunting, of St. Catharines, an enthusiastic supporter of the idea that fruit that is good enough to box is good enough to wrap, broke the ice by wrapping all the boxed fruit which he exhibited.

The apples on plates were judged by Prof. J. W. Crow, of the O. A. C., and the fruit in packages by Mr. P. J. Carey, of Toronto. Mr. F. Clement, of the Vineland Horticultural Station, placed the grapes and stone fruits and E. F. Palmer, of Toronto, handled the collections.

The judges, while stating that the quality of the fruit exhibited reflected great credit

both on the fruit industry of the province and the Exhibition, very freely criticized the manner in which it was displayed and recommended to the Exhibition Board that radical changes be made in this particular for next year. Their recommendations are substantially as follows:

First: That plate fruits be exhibited five on a plate instead of nine as at present. The change would conform to the best pomological law and usage and has been recommended for the last two years. It is hoped, however, that the change will be made this year.

Second: That the varieties be better spaced on the tables and that the tables be decorated to show the fruit off to better advantage. At present no attempt whatever is made to make the exhibits attractive to the public.

Third: That the classes for apples in packages be thoroughly revised and that the class "any other variety" be discarded. For instance, there is now a class for the Astrachan, which is not a box apple at all, while such splendid varieties as the McIntosh Red and the Snow are thrown into the "any other variety" class. Mr. Carey is strongly of the opinion that these should each be given a class and the Astrachan should not be exhibited as a box apple.

Fourth: That wrapped and unwrapped stuff should not come into competition. It is impossible for a judge to give satisfaction when good fruit poorly packed and bad fruit well packed appear in the same

classes. Many prominent fruit growers now incline to the opinion that since the trade strongly prefers wrapped fruit fair boards should encourage wrapping by eliminating unwrapped fruit from the box classes, and allowing, say, 25 points for workmanship in wrapping and packing.

Fifth: That export classes of apples be eliminated. This year fully nine-tenths of the apple crop will be purchased for domestic consumption and the export class could very well be done away with. Classes for fall and winter varieties would cover all the necessary entries.

Government Exhibits.

The Ontario Fruit Branch had a large and attractive exhibit of fresh and preserved fruits. Duchess, Woolf River and Wealthy varieties of apples were on display and formed the bulk of the exhibit. Pears and peaches also occupied a prominent place and attracted much attention. Chemically preserved whole fruit of various kinds also set off the display to good advantage, the whole creating a favorable impression of the fruit growing possibilities of the province.

The outstanding feature of the Vineland Horticultural Experimental Station exhibit was the large number of varieties of grapes shown. Many varieties of peaches were also displayed, together with a considerable quantity of pears and a small quantity of plums and apples.

Lambton was the only county having a fruit exhibit. It was in charge of Mr. Bramhill, the County Representative, and consisted principally of apples, peaches and plums, with some grapes and a few pears.

The greatest lesson taught by these departmental exhibits was the way they demonstrated that a fruit exhibit may be kept wholesome and attractive during two weeks of warm, humid weather by carefully replacing spoiled fruit. The attractive way in which the fruit was displayed was freely commented upon, and in this also they could be well copied in the regular fruit exhibit.

Horticultural Exhibition

P. W. Hodgetts, Toronto

Owing to the abnormal conditions still existing in Ontario, the directors of the Ontario Horticultural Exhibition at a largely attended meeting held in September, decided to again defer the usual November Show for another year. All the buildings on the Exhibition grounds will be occupied by the soldiers in training and no other building suitable can be located in Toronto.

It was decided that the association could help the Red Cross Society better by giving a grant from the funds in the hands of the Treasurer rather than risk putting a great deal of expense and energy in holding a show, the gate receipts from which might not in the end amount to as much as could be given the other way.

Pointers for Packers

For the Minnesota apple-grower, R. S. Mackintosh, horticultural specialist of the Agricultural Extension Division, Minnesota College of Agriculture, has prepared these profitable rules to govern picking and packing:

- Pick by hand.
- Cool before packing.
- Grade carefully.
- Put only one variety, grade, and size in a package.
- Pack tight.
- Mark on outside the variety, grade, size, and grower's or packer's name.

Douglas Gardens

OAKVILLE, ONT.

At the date of writing (14th Sept.), many of the Fall blooming plants are in their glory.

ARTEMISIA LACTIFLORA (new), with its creamy, white spirea-like flowers on a 4-foot stem is a great acquisition. It requires protection in the colder districts.

CHRYSANTHEMUM ULIGINOSUM (Giant Daisy), when massed, with its chaste bloom, has a refining effect on the Hardy border.

HARDY ASTERS (Michaelmas Daisies) are just coming into their glory. "Beauty of Colwell" and "Miss Willmott" are both semi-double and are of shades of lavender. "Lil Fardell" is a tall grower and gives pink flowers. "W. Bowman" is of rich, rosy purple, and "Wm. Marshall" is a soft, clear blue, while "Perfectus" is a gem. "Madonna" and "Queen," of the dwarf whites, are both good white sorts and of different habits of growth.

HELIANTHUS MAXIMUS, single and double, with their clear yellow blooms, are both good subjects.

HELENIUMS, these are perhaps the grandest subjects for September bloom. "Autumnale Superbum" is a self yellow. "Aut. Striatum" is yellow and red. "River-ton Beauty" is a very chaste flower, light yellow with brown centre; and River-ton Gem has a gorgeous wall-flower bloom.

If one-quarter of the readers of this advertisement could see these plants in bloom we would not have nearly enough to supply the demand. We now have on file orders for delivery next spring and we shall be glad to add to this list. All these plants do well set out in the spring.

JOHN CAVERS

SAVE
THOSE APPLES
by using a
MAXWELL
Cider Press!



HOW many go to waste that might be turned into Cider or Cider Vinegar with a small investment! MAXWELL PRESSES are well made, of the best material, heavy, substantial frame, and cross section of extra weight and strength; furnished with two crates, galvanized hoops, and tin-rod rivets. Made for either hand or power.

MAXWELLS LIMITED
ST. MARYS, ONT.

SPRAY THIS FALL

If you want clean trees next season. Progressive growers are counteracting the recent wet season, with its consequent ravages of fungus diseases, by a thorough application of

Grasselli
Lime Sulphur Solution
the tried and proven fungicide.

Prevention is Better
Than Cure

GUARANTEED
MATERIAL

PROMPT
SHIPMENT

**The Grasselli Chemical
Co., Limited**

HAMILTON TORONTO MONTREAL



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.



BRUCE'S FLOWERING BULBS

For Winter Flowering in the House
and Spring Flowering in the Garden

Exquisite colors and fragrance—EASILY GROWN—Must be planted this Fall.

COLLECTIONS

No. 1, indoors	25 bulbs, postpaid \$0.70	No. 3, indoors	100 bulbs, postpaid \$2.60
No. 5, outdoors	25 " " .70	No. 7, outdoors	100 " " 2.60
No. 2, indoors	50 " " 1.30	No. 4, indoors	200 " " 5.00
No. 6, outdoors	50 " " 1.30	No. 8, outdoors	200 " " 5.00

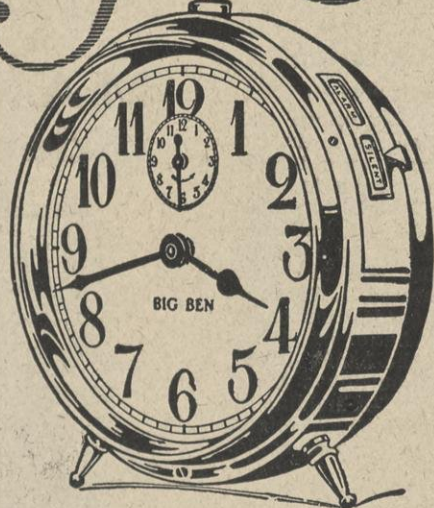
Each of these collections contains HYACINTHS, TULIPS, CROCUS, LILIES, NARCISSUS and other bulbs.

FREE—Send for our 32 page illustrated catalogue of Bulbs, Plants, Seeds, and Poultry Supplies, etc. NOW READY.

JOHN A. BRUCE & COMPANY, LIMITED

HAMILTON - Established 1850 - ONTARIO

Big Ben



He's Had Farm Experience

On thousands of farms, Big Ben has been the clock of all work—ringing up the people who must get out early, and telling the right time of day to those who stay 'round the house.

Big Ben works 24 hours at

a stretch—puts in overtime without extra pay, and never botches up a job.

He's husky, deep-voiced and strong. His call is clear—his bold numerals show plainly in the dim light.

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

Commission's Powers Limited

G. E. McIntosh, Forest, Ont., Traffic Expert for the Ontario Fruit Growers' Association

The Dominion Railway Commission is a governmental agency of real authority, a tribunal of far-reaching influence, and "friend at court" of the public. They provide a tribunal for the determination of transportation questions without costs to the appealing or defending parties, and they give a fair deal so far as lies within their power, but their jurisdiction is limited, when it comes down to a matter of remedying many of the little details that make fruit marketing a success, especially for those producing a perishable commodity.

They have no power to award damages for delays in transit.

They cannot issue an order in reference to rough handling or pilfering.

No jurisdiction over the settlement of claims.

Cannot issue an order in reference to delays, jolting, or rough coupling.

They have no jurisdiction over navigation companies, other than those controlled by a railway company.

Railway companies may grant special privileges to certain shippers, and unless unjust discrimination is proved, the Board cannot order the extension of such privilege to other shippers.

Some of these matters must be dealt with by the shipper or receiver under civil law in an action for damages, while there is no possible means of redress for others.

This is the condition in respect to jurisdiction of our Railway Commission, and there is urgent need of reasonable legislation that will extend the powers of the commission and require good service. The people want the railways to do well. They are interested in them, but they are opposed to those who monopolize the corporation, absorb their earnings, increase the watered stock, or otherwise burden them with a debt which they try to pay for out of the traffic furnished by the public, and leave it in the power of these companies to fix the rule of conduct. In other words, let the law furnish the rule of conduct in supplying equipment and transportation, and let the railroad pay the penalty if it fails. The purpose of such legislation, briefly defined, would be as follows:

To enable shippers to secure cars in reasonable time.

To enable farmers, stockmen, fruit growers to promptly market perishable freight.

To empower the Commission, when necessary, to provide minimum speed limit.

To enable contracts to be made and carried out on basis of reasonable service.

To make railroads responsible for failure of such duties.

To fix reasonable penalties to ensure reasonable service.

To assure proper handling of shipments.

To enable the Railway Commission to make rules and regulations with respect thereto.

To provide for establishing reasonable reciprocal demurrage charges.

To secure under proper rules the unloading and release of cars by shippers.

To exempt railways from penalties where compliance with the law is prevented by causes not reasonably anticipated or from accident.

A bill to regulate commerce, embodying the above, was recently before the United States Senate. Railroads which give reasonable service need not fear such a law; those which do not give such service should.

CIDER APPLES WANTED

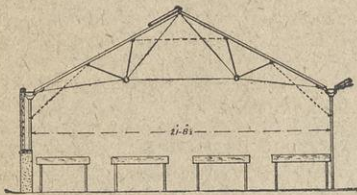
We are prepared to pay the highest cash prices for cider apples in car lots. Farmers who have not sufficient to make up a whole car themselves can arrange with their neighbors for joint shipment. Write us if you have any to offer.

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

Horse-Radish Wanted

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

Wm. Davies Company,
TORONTO, CANADA

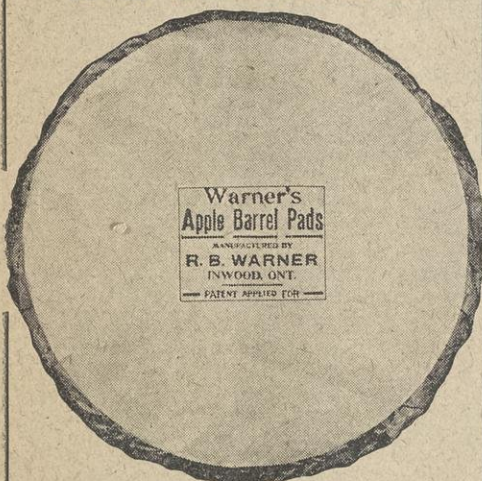


STYLE C

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.

Bruised Fruit is a distinct loss**WARNER'S APPLE BARREL PADS**

placed in each end of the barrel holds the apples firm and absolutely prevents them from being bruised when heading the barrel and shipping. It costs very little and pays well.

Sample Sent Free on Request.

R. B. Warner, Inwood, Ont.

Northern Bred Queens

This cold weather makes one think, "Where are you going to get your hardy queens for winter?"

I thank my Canadian friends for their hearty trade this season.

E. E. MOTT, Glenwood, Mich., U.S.A.

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.

GRANT ANDERSON

Riv Handa - - - Texas

Queens of MOORE'S STRAIN of Italians**PRODUCE WORKERS**

That fill the super quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, \$1.00; six, \$5.00; 12, \$9.00. Select untested, \$1.25; six, \$6.00; 12, \$11.00. Safe arrival and satisfaction guaranteed. Circular free. I am now filling orders by return mail.

J. P. MOORE

Queen-breeder. Route 1, MORGAN, KY.

QUEENS.

Give us a trial for Queens. We have established a Queen repository where Queens are placed when imported, so as to be ready for shipment when orders come in. We also breed from the best worker stock in our own Queen yard. We can furnish Leather colored, Goldens, Caucasians or Carniolans. Prices right. Satisfaction guaranteed.

THE ROOT CANADIAN HOUSE,
185 Wright Ave., - - - Toronto, Ont.

**Honey Pails & 60lb. Cans.
Glassware & Shipping Cases.
Bees. Queens. Honey. Wax.**

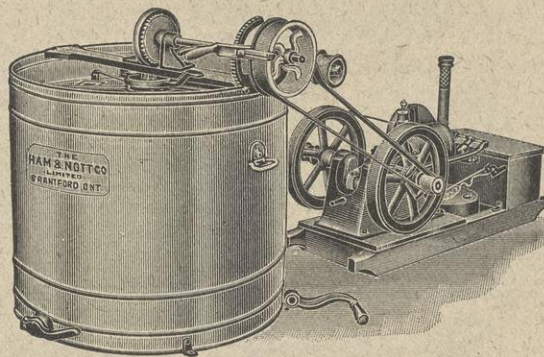
CHAS. E. HOPPER & CO.

126 Simcoe St., TORONTO, ONT.

The Root Canadian House

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.

**Power Honey Extractors**

Friction drive or with special cut gears, smooth and easy running. Speed control is perfect and simple. If you are thinking of purchasing a power outfit, write us at once.

The Ham & Nott Co., Ltd.
BRANTFORD, 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

NOTICE TO QUEEN BREEDERS

If you want to sell Queens and Bees advertise in the AMERICAN BEE JOURNAL. Read what some of our advertisers have to say about the pulling power of our advertising pages.

We have advertised in the American Bee Journal for thirty years. Have always found it a good advertising medium.—J. W. K. Shaw Co., Loreauville, La.

My advertisement brought all the orders I wished for. In fact, more than I was able to supply—quite a number of orders had to be returned.—J. A. Simmons, Sabinal, Texas.

The Reasons are self-evident—a good bee paper is taken by live and wide-awake beekeepers, and these are the kind that are always in the market for good bees and good Queens.

Rates on space are not high. Display at 15c a line, or \$2.10 per inch. Classified, 15c a line. Send in your order with copy to-day and get rid of your surplus Queens.

AMERICAN BEE JOURNAL, - Hamilton, Ill.

Cold Storage Fruit Warehouse

Finest Apple Rooms in the Dominion
for Export and Local Trade.

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The Canada Cold Storage Co.

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FREE LAND For the SETTLER in NEW ONTARIO

Millions of acres of virgin soil obtain-
able free and at a nominal cost are call-
ing for cultivation.

Thousands of farmers have responded
to the call of this fertile country and are
being made comfortable and rich. Here,
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awaits you.

For full information as to terms, regu-
lations, and settlers rates, write to

H. A. Macdonell

Director of Colonization

Parliament Buildings, TORONTO

HON. JAS. S. DUFF,

Minister of Agriculture
Parliament Bldgs., Toronto

The Apple King of Eastern Canada

(Continued from page 231.)

Where apple-growing, as in this case, is carried on extensively along with general farming, the harvesting of the fruit presents a difficult problem. Mr. Chute has obviated this difficulty to some extent by planting and grafting varieties that ripen their fruit in succession. He expects to gather this present year one thousand barrels Crimson Beauty, a very early variety. Then follows Astrachan, Duchess, Bow Sweet, Early William, Gravenstein, Blenheim, King, etc. Then, too, the pressure of work is somewhat relieved by making two or more pickings of the earlier varieties. The barrels, holding a minimum of ninety-six quarts, are made in a cooperage on the farm and hauled to the fields as wanted. In the case of most of the early varieties, the heads of the barrels are removed before being taken to the orchard, and the filled barrels are covered with bags held in place by the top hoops. This not only lessens labor, but also serves to keep the fruit free from bruises. With later varieties care is taken not to fill the barrels so full that bruising will result from too tight heading. The fruit is hauled to a large frost-proof warehouse owned by Mr. Chute.

Packing.

Apples are packed both in boxes and barrels, for the most part in the latter. Box packing is yearly taking a more important place in Mr. Chute's packing operations. At first it consisted of a mere jumble pack, the apples being placed in the boxes without any regard to system. Now, thanks to instruction given by experts sent out by the Dominion Government, the diagonal pack with approved bilge has taken the place of the barrel pack in the packing of fancy grades of Gravenstein, Blenheim, McIntosh, King, Wagener and Spy. All apples packed in boxes are wrapped in paper, thus facilitating packing, and also ensuring the apples against early decay.

The principal varieties are divided into three groups, according to size. Thus Blenheim, King and Fallawater belong to group I.; Gravenstein, Duchess, Astrachan, Baldwin, Greening, Stark, Spy and B. Davis to group II.; Ribston, G. Russet and Wealthy to group III. In the following table, the minimum size, inches in diameter, of each of the grades, is given. It will be noticed that the sizes differ uniformly by exactly a quarter of an inch, and that in all only five sizes are given—2¾ in., 2½ in., 2¼ in., 2 in., 1¾ in.

Variety.	Min. in. Diam.	Min. in. Diam.	Min. in. Diam.
	No. 1.	No. 2.	No. 3.
Blenheim, etc....	2¾	2½	2¼
Gravenstein, etc..	2½	2¼	2
Ribston, etc.	2¼	2	1¾

Each packing table is provided with a gauge with holes accurately cut out of zinc or stiff card-board, showing the sizes—2¾ in., 2½ in., 2¼ in., 2 in., 1¾ in. These gauges are of great use to beginners, especially. It is a very good plan when packing any variety, Gravenstein, for example, to place near at hand three apples representing the smallest that can be packed as 1's, 2's, and 3's, respectively. This, of course, is ascertained by use of the gauge.

The bilge hoops of the barrels in which apples are to be packed must be firmly driven down, and securely nailed with three or four nails in each hoop. These nails should be stout and short. A pulp-head is now laid on what is to be the face end of the barrel. Great care is taken to make this face as attractive as possible. The apples chosen for the face should be of medium size for the grade and variety, free from blemishes, and well colored. The stems are clipped and the apples placed so as to cover the entire bottom of the barrel. It requires skill to do this quickly. Now the apples may be poured carefully into the barrel and shaken down as fast as they come from the packing table. When the barrel is nearly filled the last two baskets

St. Joseph or Madonna Lily (Lilium Candidum)

On stem 3-4 feet tall, the deliciously fragrant flowers are borne 10-20 to each stalk. Keep in bloom June-August.

The one pure white Hardy Garden Lily. Must be planted early. (Bulbs ready now.)

	Each.	12.	100.
Extra Size	\$0.15	\$1.20	\$ 7.00
Mammoth	0.20	2.00	12.00

We furnish the best northern grown bulbs.

We wish to interest you in the growing of Narcissi and Daffodils to grace your home in winter, your grounds in early Spring.

Tulips flaunting gay banners.

Hyacinths to perfume your rooms and garden.

Crocus and Snowdrops to gaily ring in Spring's advent.

Lilies gathered in deep forests or mossy glens of Europe, Asia.

Rennie's Popular Collections

There are many lovers of flowers who would like to try a few bulbs, but hardly know which varieties to choose. Knowing this, we have made up collections of the different varieties which yield most satisfactory results in combination.

We are offering these collections at extremely low prices to influence a wider interest in bulbous plants, and customers who take advantage of any of the following offers will be very well pleased with the outcome of their small investment.

No change can be allowed in these collections.

COLLECTION A. For Outdoor Culture. (Postpaid.) 300 BULBS, PRICE \$3.75.
½ Coll. \$2.25. ¼ Coll. \$1.35.

12 Hyacinths, single, assorted.	28 Spanish Iris.	28 Tulips, single, assorted.
12 Hyacinths, double, assorted.	12 Scilla Siberica.	28 Tulips, double, assorted.
8 Trumpet Narcissus.	12 Ranunculus, mixed.	28 Parrot Tulips, mixed.
8 Double Narcissus.	8 Anemones.	100 Crocus, all colors.
12 Poeticus Narcissus.	4 Lilium Candidum, white.	

COLLECTION B. For House Culture. (Postpaid.) 120 BULBS, PRICE \$2.75.
½ Coll. \$1.75. ¼ Coll. \$1.00.

12 Hyacinths, splendid, named.	8 Narcissus, double, mixed.	8 Oxalis, Buttercup.
12 Hyacinths, Roman, red, white, blue.	4 Narcissus, single, mixed.	2 Easter Lilies.
24 Tulips, single, mixed sorts.	12 Alliums, Neapolitanum.	2 White Calla Lilies.
12 Tulips, double, mixed varieties.	12 Freesia Refracta Alba.	12 Spanish Iris, mixed.

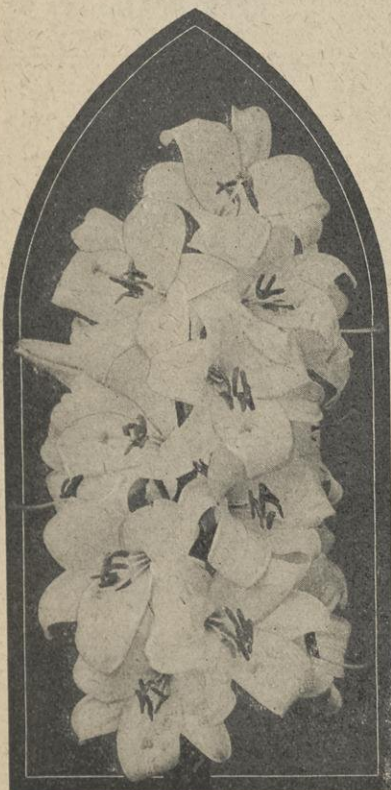
Our Pamphlet, "How to Grow Bulbs," free with every order.

Seeds to grow choicest Winter bloom. Seeds to sow in Summer and Fall for Hardy Perennials. Every bulb, every packet of seed, is specially selected for you—and delivered post or express prepaid by us.

Send for our Fall Bulb Book—It is free. Send to-day. Early orders secure the best.

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Head Offices and Warehouses:
Adelaide & Jarvis Sts., TORONTO.
Branches: 190 MCGILL ST., MONTREAL, QUE. 394 PORTAGE AVE., WINNIPEG, MAN.
1138 HOMER ST., VANCOUVER, B.C.



are often shaken down together, so as to get a smoother surface, either for the purpose of tilling or heading. As a rule, when the barrel has been finally settled by vigorous racking on a stout plank with a felt-lined head placed on top, the apples should present a level surface only slightly higher than the chimes. Many a finely packed barrel of apples has been ruined by too little racking, and too much pressing. Care is also taken to see that the heads are securely nailed. The name of the variety, the grade and the shipper's brand are neatly stenciled on the face head of each barrel.

The successful marketing of farm products is quite as important as production. Mr. Chute's great success as a fruit-grower is due largely to his splendid business capacity. It was this same remarkable power to grasp a business proposition and turn it to advantage, that has made him such a tower of strength to the United Fruit Companies, Limited, of Nova Scotia. Some people attribute Mr. Chute's success to "luck," but the better informed see that brains, pluck, and tireless industry, "not luck," have made him what he is often called, "The Apple King of Eastern Canada."

The Canadian Horticulturist is a useful and interesting paper from which much knowledge can be gained. I am a large fruit grower and have followed with success some of the methods of spraying described in The Canadian Horticulturist.—Edward F. Newling, Beckenham, Eng.

GINSENG

GINSENG FOR SALE

10,000 Roots one to six years old. 40,000 Stratified seed and 200,000 new seed, grown on natural soil and shade. All free from blight and disease. Price and instructions for fall planting on application.

DR. H. S. WATSON, Newmarket, Ont.

GINSENG ROOTS and SEEDS FOR SALE

Good, strong Canadian-grown roots, one and two years old, \$10.00 and \$15.00 per thousand. Tested seed for fall planting, \$1.50 per 1,000. No order for less than 1,000. Cash with order.

Dr. MACKENDRICK, Galt, Ont.

GINSENG

Plants and stratified seeds for sale. Canadian stock. Choice quality. Send for price list to

N. J. MACINNES, M. D.

Vittoria, Norfolk Co., Ont.

LANARK GINSENG

Fortune awaits any man who will give time and attention to the growing of Ginseng. We have made a complete success of it and are ready to point the way to others.

The time to prepare the ground is now; the time to plant is September and October.

Lanark Ginseng Seed is noted for its strong germinating qualities.

Lanark Ginseng Roots are sure growers and great producers.

Don't fail to make investigation of this highly profitable industry. Write to the Secretary and he will tell you all about it.

Address **C. M. FORBES**

Secretary Lanark Ginseng Garden Co.,
LANARK, ONT.

FREE FOR THE ASKING

This handsome Fur Style Book (containing 34 pages of illustrations) of beautiful

FURS and FUR GARMENTS

for men, women and children—will be gladly mailed free for the asking—affording you an opportunity to take advantage of our policy of selling furs From Trapper to Wearer.

We buy our Raw Furs direct from the Trapper and manufacture them ourselves, therefore, we can save you the many profits that usually go to the middleman

WE GUARANTEE
"TO SATISFY YOU OR REFUND
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Write to-day for this beautiful Style Book. It will show you how to save many dollars.

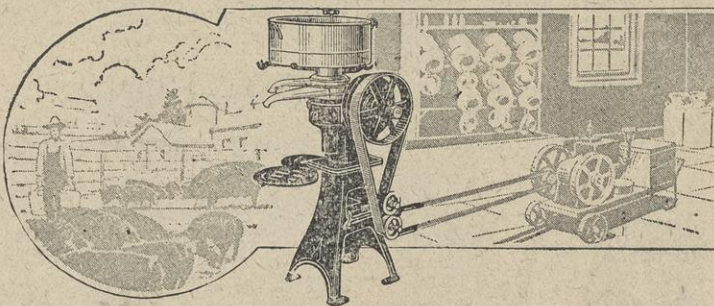
John Hallam
Limited



RAW FURS. We pay highest prices for Raw Furs. Write for price list if interested.

GUNS. We carry in stock a complete line of guns, traps, nets, acetylene headlights and camp lamps "Eveready" flashlights, animal bait, fishing tackle, sportsmen's supplies. Catalogue Free.

Mail Order Dept. 150, TORONTO, ONTARIO



International Harvester Cream Separators

THERE is a cream separator price that is right—the price of a **Lily** or **Primrose**. But here are three more important separator features.

The first is **Cleanliness**: A separator that cannot be kept scrupulously clean, inside and out, is dear at any price. Buy no separator that cannot be cleaned easily as well as thoroughly. Five minutes' work cleans a **Lily** or **Primrose**.

Second—**Close Skimming**: The separator that does not skim closely is wasteful. A **Lily** or **Primrose** leaves only a drop of cream in a gallon of milk. Insist on this standard.

Third—**Simplicity**: Buy a separator that needs so few and such simple adjustments that you or your wife can make them. Be sure to get one with a single automatic oiling arrangement which takes care of every bearing and avoid trouble.

When you buy a **Lily** or **Primrose** cream separator, you get these features, and pay the right price.

"Facts and Figures on Dairying," will help you choose right. You will be less liable to make dairy mistakes after you have read it. We send it free. Write for it.



International Harvester Company of Canada, Ltd.

BRANCH HOUSES

At Brandon, Calgary, Edmonton, Estevan, Hamilton, Lethbridge, London, Montreal, N. Lattimore, Ottawa, Quebec, Regina, Saskatoon, St. John, Winnipeg, Yorkton



Wilkinson Plows


THE oldest line of steel beam plows in the Dominion, made in the old Wilkinson Plow Co's factory, by old Wilkinson Plow Co. experts—every one of them men who know their business. It is the standard line of plows and includes 25 or more styles to choose from. U. S. S. Soft Center Steel Moldboards, highly tempered and guaranteed to clean in any soil. Steel beams, steel landsides and high carbon steel coulter. Clevises can be used either stiff or swing. Each plow is fitted especially with its own pair of handles—rock elm, long and heavy and thoroughly braced. The long body makes it a very steady running plow. Shares of all widths—specials for stony or clay land.

General purpose, light, medium, and heavy, side hill, sod, drill or one horse plows

The plow shown turns a beautiful furrow, with minimum draft and narrow furrow at finish. Ask for new booklet.

The Bateman-Wilkinson Co., Limited
461 Symington Avenue, Toronto Canada

Repairs for all Wilkinson Plows



Ginseng Growers Meet

The annual meeting of the Ontario Ginseng Growers' Association was held in Toronto, September 10th. While the meeting was not largely attended those who were there benefited by it.

Mr. Forbes, of Lanark, exhibited some fine specimens of both ginseng and Golden Seal and gave a practical talk on his methods of growing these roots, as well as of his success in disposing of them at a good price to a Chinaman in his home town. He strongly advocated the standardizing of the roots, and also having a central depot established where roots could be sent and sold, and where the best price could be obtained. The matter of shipping direct to China will be left over until war conditions are more favorable. Last year's officers were all re-elected.—P. Wilson, Secretary, 283 Evelyn Ave., Toronto.

New Brunswick

J. Bebbington, Fredericton

Potatoes are splendid here and scarcely any disease. They were sold on the market here early in September at \$1.50 to \$1.75 per barrel. My son happened to be in Oulton, Maine, recently, where there was such a glut that they were selling at 25c a barrel. They make a specialty, it appears, in that district of raising potatoes for export. They expected there would be thousands of barrels wanted for war purposes, but are disappointed, and thus some of the farmers are ruined, so they say. The Secretary for Agriculture, Mr. Duggett, has advised the farmers of New Brunswick for a year or so not to pin their faith to potatoes too much. They are an uncertain crop, as the State of Maine has found to its sorrow.

Cucumbers were imported here until August. When the New Brunswick crop came on they were so plentiful people did not want many. A grocer said a month ago, "I can sell cucumbers at 10c each, but when I ask 2c. no one wants them. I procured a case at 90c. per dozen in July and then they paid me well. They are not selling at 2c. each retail."

Tomatoes only ripened after August 1st, and then in small quantities. They retailed about the first week in September at 5c. to 8c. per lb. Beets and carrots sold for 5c a bunch, and turnips 75c. a barrel, which was a good price and paid well. Celery has done very well. The rather wet season suited it. A limited quantity was used this season for the table, also for pickles. Golden bush wax beans have been poor this year owing to rust caused by too much wet weather. It is a good thing here not to have too many eggs in one basket.



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.

DUTCH BULBS

For Fall, 1915. Direct import from Holland. Bulbs of first quality, guaranteed true to name and color. Low prices. Send for our Catalogue.

DORVAL NURSERIES, Dorval Station, P.Q.

The Big Money Leak

Thousands of dollars are lost each year by Horticulturists through stunted production—stunted production caused by inadequate and poor water systems.

An inferior water system is a perpetual loss, and if you have one you would save hundreds of dollars in the long run by throwing it out at once and installing a Peerless.

Peerless Water Systems

are simple, reliable, economical and do away with an expensive elevated tank with its many disadvantages. A reservoir tank, in the cellar or outhouse, or buried underground, holds the water pumped from the source of supply. The water in the reservoir is forced through the pipes by air pressure, thus insuring a steady and consistent supply of pure water in whatever parts of the house, greenhouses, barns and gardens you wish it.

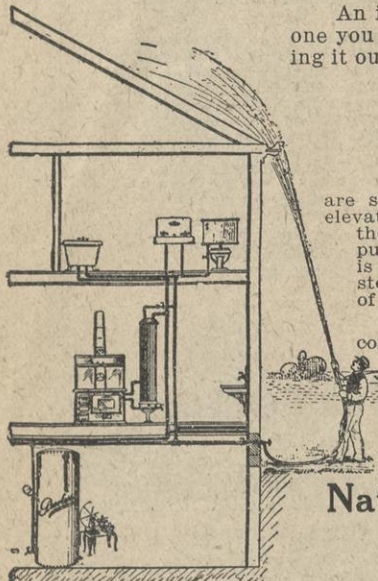
Hundreds of these systems in operation to-day bear out our contention that for a reliable and adequate water supply at low cost Peerless Water Systems have no equal. In case of fire they are a protection worth many times their cost.

Write us for full particulars and any special information you require. We assure you of a courteous and valuable reply.

National Equipment Company, Limited

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WHITE & CO., Ltd.

Church & Front Streets

TORONTO, ONT.

OCTOBER
1915

AS one of the largest and oldest commission houses on Front Street, we have a claim on your confidence and favor possessed by few others. The two things—perhaps there are three—that matter to you are: (1) the reliability of the house you deal with; (2) the ability to sell consignment quickly; and the third matter of importance is the ability of your commission agent to get top prices. We are 100% efficient in regard to these three items. We can and

Correspond with us first, if you wish. Ship without waiting to write, if your matter is urgent. Shipping Stamps and Market Reports supplied on request.

**WILL SELL
YOUR FRUIT AND VEGETABLES.**



Good seed and its products—a commendable exhibit of one of Canada's largest Seed Houses at the Canadian National Exhibition, Toronto, Ont.

The Steele, Briggs Seed Company started in the seed business 43 years ago in a small way, and have made such rapid progress and have given such good satisfaction to their thousands of customers throughout Canada, as well as many other countries, that to-day they are the largest Seedsmen in Canada and one of the largest in America.

The basis of all their dealings from the very beginning has been absolute reliability, and they have a great many customers who have been doing business with them for thirty-five years.

Recently they have established New Trial Grounds at Oakville, Ont., which comprise 28 acres, and they have spared neither money nor effort to equip the grounds in the most efficient manner. There every variety of vegetable, flower and field seeds are given a thorough test every year; thus they know their stocks and can eliminate any variety not true to type or not hardy in our Canadian climate.

Mr. Arthur W. Annandale, Secretary of the Steele, Briggs Seed Company, is resident on the farm, and all trial work is under his personal supervision. He has spent his whole lifetime in the seed business, in Scotland, England, U.S.A., and the last 22 years with the Steele Briggs Seed Company in Canada.

Ever on the alert, procuring and proving new varieties, enlisting the hardiest and best, keeping standard sorts up to the highest mark—this policy has made Steele, Briggs Seed for purity and quality unsurpassed by any in the world.

To-day there is no settlement in Canada where Steele, Briggs seeds are not known as a household word—no State in America where some of their stocks are not in demand—no country in Europe where their shipments do not go. Australia and New Zealand call for their seeds; South America gets them; South Africa and Japan. The confidence accorded them by customers, bankers and seed-growers in all parts of the world is a tribute to solid foundation

principles and an earnest effort to carry them out.

The persistent growth of their trade has been something more than a mere happen-so, and the fact that they have the largest establishment of its kind in Canada, and one of the largest on the continent, speaks for itself.

The variety and excellence of Steele, Briggs Seeds have gained for them the confidence of many thousands of customers, and they are not unmindful of the esteem and confidence of those many friends whose support and encouragement have made the business what it is.

Steele, Briggs assume the name of "Seedsmen." This means more than "Seed Dealer." The latter is usually great on newspaper advertising. Glowing description of "Best ever Seeds" is the magnet he depends upon. He adopts new varieties as the Seedsman proves and introduces them.

The Steele, Briggs Seed Company maintain that the business of the true Seedsman should include the Testing, Proving and Introducing of new Varieties. The field for this work in Canada is vast indeed. An important place for the Seedsman here is hand-in-hand with the pioneer who blazes the trail past the frontier and puts his plow into unknown soil—hardships and disappointment are his, but with patience and experience come knowledge and success.

Steele, Briggs' "Lion" Brand in Clover and Timothy Seed has become a household word throughout Canada, and as it has always stood for the very highest standard in Clover and Timothy, growers know that when they purchase "Lion" brand it is the best obtainable.

The firm have branches in Hamilton, Ont., and Winnipeg, Man.—Adv't.

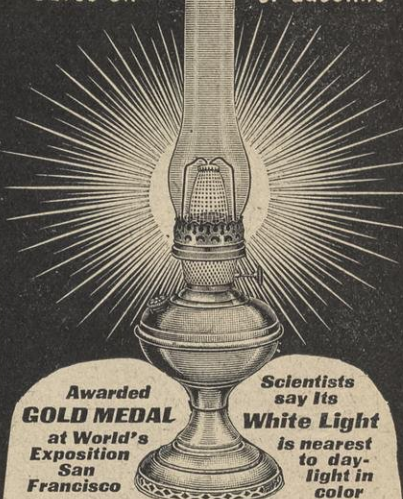
Wherein does the fruit inspector resemble the schoolboy preparing to go fishing? Both are looking for worms.

I enjoy The Canadian Horticulturist very much. All success to you.—J. E. Turner, Toronto, Ont.

Wonderful New Coal Oil Light

Burns Vapor
Saves Oil

Beats Electric
or Gasoline



10-Days FREE TRIAL

Send No Money, We Prepay Charges

We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days—we even prepay transportation charges. You may return it at our expense if not perfectly satisfied after putting it to every possible test for 10 nights. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at 33 leading Universities and Government Bureau of Standards show that it

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common coal oil, and gives more than twice as much light as the best round wick open flame lamps. No odor, smoke or noise, simple, clean, no pressure, won't explode. Children run it. Several million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

\$1000.00 Will Be Given

to the person who shows us an oil lamp equal to the new Aladdin (details of offer given in our circular.) Would we dare make such a challenge if there were the slightest doubt as to the merits of the Aladdin?

Men Make \$50 to \$300.00 per Month With Rigs or Autos Delivering

the ALADDIN on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 34 lamps out of 31 calls." Thousands who are coining money endorse the ALADDIN just as strongly.

No Money Required

We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory. Sample Lamp sent for 10 days FREE Trial.

We want one user in each locality to whom we can refer customers. Be the first and get our special introductory offer, under which you get your own lamp free for showing it to a few neighbors and sending in their orders. Write quick for our 10-Day Absolutely Free Trial. Just say, "Show me how I can get a strong white light from coal oil, without risking a cent." Address nearest office.

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Largest Coal Oil Mantle Lamp House in the World
Montreal Winnipeg

Help The Canadian Horticulturist by telling advertisers when you write them that you saw their advertisement in its columns.

"Sprayed 16,000 Trees—No Repairs"
 —so says one of our thousands of satisfied customers, Mr. J. A. Bingaman, Pillow, Pa. He did the work with a Goulds "Pomona" Sprayer, shown below. This two-hose, four-nozzle sprayer can't be beaten for use in small orchards, and where labor is cheap, is used in large orchards—several machines taking the place of a large power outfit. Wearing parts are of solid bronze. Large steel air chamber gives uniform pressure. Easily adjusted and cleaned. Fits any barrel. It's only one of 50 styles and sizes of hand, barrel and power sprayers, made at the largest pump works in the country.

**GOULDS
RELIABLE
SPRAYERS**

are guaranteed; backed by 65 years' pump-making experience. Write our nearest office for valuable 44-page book, "How To Spray." It is free. Send for your copy today.

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 Main Office and Works:
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Fruit Conditions in the West

The Dominion Fruit Commissioner, D. Johnson, during the summer visited the various markets of the prairie provinces for the purpose of making himself more familiar with the conditions under which fruit is distributed there. In Winnipeg, the Commissioner had an opportunity of investigating the arrival and sale of raspberries and strawberries. The wholesale houses had arranged to pool their cars of fruit, the greater part of which was received from the northwestern states. The demand for berries was better than had been anticipated earlier in the season, as it was thought that, owing to the war conditions and the high price of sugar, the amount of fruit consumed would be curtailed. The demand for tender fruit, however, not only in Winnipeg, but in other markets in the west, was much larger than last year, and on the whole he had reason to believe that the wholesalers made prices fully fifty per cent. higher than were obtained last season.

The same conditions existed in Saskatoon, Lethbridge, Edmonton and Calgary, although the province of Alberta was somewhat more seriously affected by the money stringency which exists in the west at present. They have a prospect, however, of an enormous grain crop, and if this crop is harvested without injury, the demand for fruit will be greatly increased.

A Marketing Conference.

In Calgary the commissioner attended the meeting which was called by the Calgary board of trade for the purpose of discussing the price of fruit. It was brought out at this meeting that last year the fruit grower in British Columbia received an average of 15c. (net) for his apples on the tree, while the consumer paid from \$1.50 to \$2.00 per box for the same fruit, the difference going to the transportation companies and the middlemen. It was the unanimous desire of the convention that the federal government should appoint a commission to thoroughly investigate the marketing of fruit and to devise some different methods than now exist of distributing same.

British Columbia.

In company with Chief Fruit Inspector Clarke, the commissioner visited the producing centres of British Columbia, and made an effort to meet the growers as much as possible on their own ranches. In the Kootenay district many of the growers were somewhat discouraged owing to the low prices secured last year and the unsatisfactory condition of the orchards. Scab and aphid have developed to an alarming extent and many orchards will have little or no No. 1 fruit for sale. Up to the present this district has been fairly free from such pests.



BULBS The Quality of our Stock is the Best

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 Princeps, 20c. doz., \$1.25 per 100, postpaid.
 Paper White Narcissus, 25c. doz., \$1.40 per 100, postpaid.

Write for our Price List

GEO. KEITH & SONS

Seed Merchants since 1866

124 King St. E. Toronto, Ont.

Fruit and Vegetables Solicited

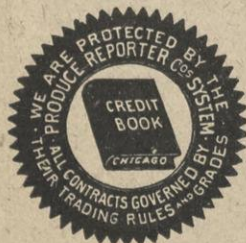
WE GET YOU BEST PRICES

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

H. PETERS

88 Front St. East, Toronto

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



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

Send for
 Shipping Stamp

The Okanagan lakes constitute the great fruit producing district of British Columbia, and many thousands of acres of beautiful orchards are to be seen. This district will probably have a tonnage equal to last year, but in some parts the quality will seriously interfere with the marketing, the scab and aphid affecting fully 50 per cent. in the northern part, while the south or dry belt is comparatively free.

The British Columbia fruit growers have made a special effort this year in the advertising of their fruits on the prairie markets as well as in their own province, and this campaign has resulted in practically no imported fruit being consumed. In the city of Vancouver alone it was estimated that \$80,000 worth of American small fruit would have been marketed had it not been for the vigorous advertising efforts carried on by the British Columbia fruit growers. They are making arrangements for an even more vigorous campaign for the marketing of larger fruits and are confident of good results.

Washington State.

The commissioner spent a day or two in the Washington fruit districts, as the fruit produced there comes in direct competition with the Canadian boxed apples. The apple crop in this district was about 60 per cent. of last year, and in Oregon and Northern California the crop was very light. This district has, perhaps, been more advertised than any other apple-producing district in the United States, with the result that 650,000 acres of orchard have been planted. These orchards are now coming into bearing, and, while last year they produced some 15,000 cars of apples, they predict that in ten years' time, at the rate of increased production, they will produce 50,000 cars. Many of the orchardists are growing discouraged, as they were led to believe that a fortune was assured them in the business, but are now beginning to fear over-production. Some are seriously considering the removal of their orchards in order to plant other crops, such as alfalfa, or wheat, which grow so wonderfully well there.

BRITISH COLUMBIA.

The inspectors this year have returned several large shipments of fruit, from United States points, owing to their being infected with the codling moth, and similar pests. One shipment contained 400 boxes of pears and 600 boxes of peaches. It was sent back from Vancouver. Another large shipment of pears was sent back from Vancouver.

As a result of the recent fruit conference at Calgary, a party of about 50 members of the Calgary Board of Trade is expected to visit the leading fruit districts of British Columbia early in October.

The executive of the Okanagan United Growers expect a material change for the better over conditions than obtained last year. They estimate that the total apple crop of the Okanagan will bring the growers cash returns amounting to close to half a million dollars, and that the sale of other fruits will show an increase in price of from 10 to 30 per cent. over the returns received in 1914. Putting the total shipment of apples from the valley at 350,000 boxes, which was the amount marketed last season, they figure that this will bring in about \$455,000, as compared with \$350,000 in 1914. Returns for apples are estimated to average about \$1.35 per box as compared to 80c last season.

Mr. W. H. Bunting, of St. Catharines, Ont., this year grew an Elberta peach that measured twelve inches in circumference.

NEWCASTLE-ON-TYNE, ENG.

In spite of the war there should be a great consumption of fruit this year in Great Britain. Government statistics show that there is less unemployment this year than there has been for years. Men are working day and night turning out munitions of war, working at a pressure never before dreamed possible. The world looks on amazed at the manner in which England has "found herself."

This city will be one of the large consuming centres as the working classes, many of whose homes contribute several members to war work, are earning as much as \$50 a week per family. It is a veritable gold mine to them and they are able to buy luxuries as never before.

ITEMS OF INTEREST.

The Vineland, (Ont.) Experimental Station preserved and donated its whole crop of peaches for the military hospitals. The donation was expected to equal 5,000 gallon tins.

A four weeks' campaign is being conducted in St. Catharines, and vicinity, to can 10,000 jars of fruit for Canadian soldiers in hospitals in France and England. Jars and sugar are being supplied by a committee, ladies will put up the fruit, which growers will donate on the trees. Boy scouts, soldiers and civilians will do the picking.

W. D. Culp, of Beamsville, this year picked twelve plums that weighed 2 lbs. 12 ozs. or an average of 3 2-3 ozs. each. One measured 7 1-2 inches in circumference.



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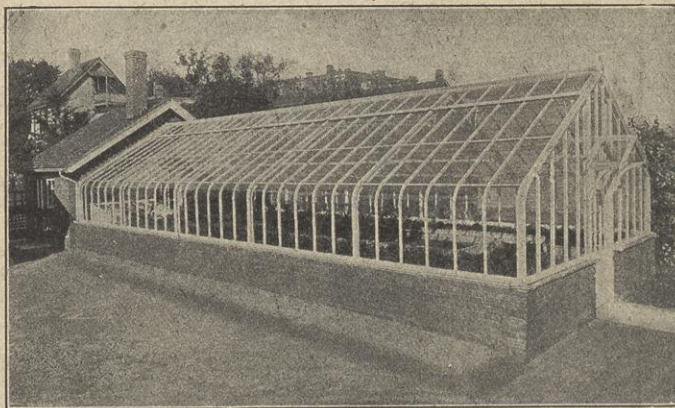
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Classified Advertisements

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.

BEEES AND QUEENS

GOLDEN 3-BANDED ITALIANS, also Carniolan queens. Tested, \$1.00 each, 6 or more, 85c each. Untested, 75c each, 6 or more, 65c each. Everything guaranteed to reach you in good shape. No disease. I. N. Bankston, Buffalo, Texas, Box 135.

BEST THREE BANDED ITALIAN QUEENS—June to October, mothers selected from more than 100 colonies and reared in hives running over with bees, according to the latest scientific methods. Every queen a dandy. Satisfaction guaranteed. Each 75c, per dozen \$7.20, per hundred \$50.00. Also bees and honey. J. H. Haughey, Berrien Springs, Mich.

MISCELLANEOUS

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

FOR SALE—A 1½ H.P. Gilson Gasoline Engine (practically new), on truck, with 60 speed countershaft and five interchangeable pulleys. Chas. T. Ross, 88 Quebec St., Sherbrooke, Que.

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

SANDER & SONS ST. ALBANS, ENGLAND

ORCHID GROWERS. The Finest

Stock in the World

Catalogue on Application

SKINNER SYSTEM THE RAIN MACHINE

OF IRRIGATION Write for six books on indoor and outdoor irrigation.

The Skinner Irrigation Co., 233 Water St., Troy, O.

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.

The production of apples, peaches, and pears in the United States this year will show a considerable increase over the average production for the past ten years. The percentage yield for apples is estimated at 62 per cent., compared with an average yield of 53 per cent. The yield will be smaller, however, than last year's yield. Peaches show a twelve per cent. increase over the average and pears three per cent.

The second annual exhibition of the Lambton County Fruit and Vegetable Grower's Association will be held in the city of Sarnia on October 27, 28 and 29. Special attention is paid to large commercial ex-

hibits of apples in boxes and barrels. The annual convention of the growers, including educational sessions, will take place in the same building as the exhibition. Manufacturers of spraying machinery and orchard appliances will have exhibits. The secretary is G. G. Bramhill, Petrolia.

"Observations and experiments on the San Jose Scale," is the title of Bulletin 180, issued by the University of Illinois, Urbana, Ill. A pamphlet on Apple Spraying Experiments has been received from the Maine Agricultural Experiment Station giving the results of work done at Highmoor Farm in 1914.

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.

H. J. ASH

44-46 Church St.

TORONTO - ONTARIO

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

Bankers:

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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.

Rogers Fruit Co. Limited

WINNIPEG, MAN.

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

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.

SIMONS FRUIT CO.

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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.

References—Any mercantile agency, or Bank of Hamilton, Hamilton, Ont.

Dawson, Elliott Co.

32 West Market St.,
TORONTO.

Telephone Main 1471.

Consignments of Apples and Vegetables solicited. Highest prices obtained.

This space costs \$1.40 or 5s. 9d. per insertion. If you want to do business with Ontario fruit growers this fall, order for November and December.

APPLE BARRELS

If you contract now we can guarantee delivery of well-made barrels. Apple crop prospects generally good and we may expect a rush later.

Write for Prices Delivered
your Station.

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TRENTON LIMITED - ONTARIO

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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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FREE SHORT COURSE

In Fruit-Growing, Jan. 25th to Feb. 5th, 1916
at the Ontario Agricultural College, Guelph, Ontario

The course covers all the details of Ontario fruit farming—orchard location, soils, varieties, nursery stock, sprays, fertilizers, pruning, marketing, etc.

Instruction in **Apple Packing** is also offered from Feb. 7th to Feb. 12th.

Other short courses for farmers and farmers' sons are:

Stock and Seed Judging	Jan. 11th to 22nd
Poultry Raising	Jan. 11th to Feb. 5th
Bee Keeping	Jan. 11th to 22nd
Dairying	Jan. 3rd to Mar. 24th

The only expense is board at moderate rates and reduced railway fare.

Short course calendar mailed on request.

G. C. CREELMAN,
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THAT they are in the luxury class has long ago been exploded; so that surely cannot be the reason.

Perhaps you think it requires a skilled gardener to run it and you don't know where to find such a man.

You can promptly set aside that objection; because we are constantly in communication with good gardeners all over the country; and without doubt we could put you in touch with just the man for your needs.

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you will have all kinds of trouble and bother in its building. But once again you are mistaken, because we will, if you wish, do every scrap of the work for you; from the turning of the sod, to the turning on of the heat all ready for your flowers.

You hold us responsible for everything.

It's as easy as buying the fully equipped automobile of these days.

Why don't you let us give you a price on a house like this one?

If you want to see others, you are heartily welcome to our Two G's Booklet, Glass Gardens—A Peep Into Their Delights.



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