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VOLUME 23, No. 8
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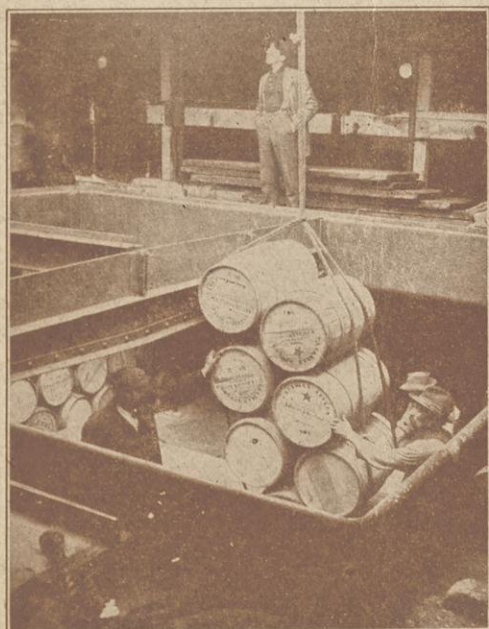
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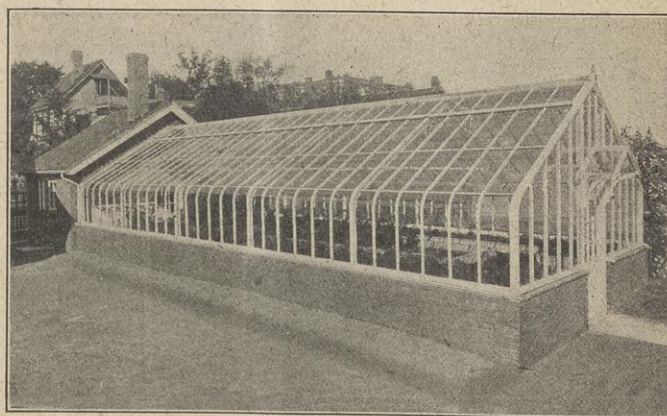
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The Canadian Horticulturist and Beekeeper

Vol. 23

AUGUST, 1915

No. 8

Winter Injuries in 1915

W. A. McCubbin, M.A., Field Secretary, Entomological Division, St. Catharines, Ont.

SO many cases of damage due to winter conditions have come under my observation during the past two seasons that a few words on the subject may be of interest. The term winter injury may be used to include those injuries due to winter sustained by plants which are either dormant, are about to become so, or which are emerging from the dormant condition. It should be noted that while extreme cold may at times cause damage it is where the low temperature is associated with other factors that the greatest injuries occur. Among these contributing factors there are several important ones from the point of view of the general grower. Variations in temperature, especially if sudden and extreme, are to be considered. A tree which would be uninjured by a week's zero weather if during the preceding and succeeding weeks the temperature gradually fell to and rose from the low level, would be badly hurt by a very cold week suddenly following a warm spell or a warm period abruptly ensuing after a very cold period.

There is also the protection of the tree to be considered. In the natural state a tree would have a humus-filled soil, an old sod, or a matting of weeds and old leaves around it which would modify very materially the effects of frost. In cultivated orchards where the bare soil is left freezing takes place more suddenly and extends more deeply, while thawing is more rapid in the spring. This is especially true of hard and earthy soils which lack humus, and in such cases freezing of the roots may be expected.

The most important factor, however, is the dryness of the plant tissues. When a tree prepares itself for winter growth ceases and the tissues undergo certain changes, associated with which is the drying out of the surplus water. Every effort is made to keep as little water as possible. Here again our methods of cultivation sometimes interfere with nature's processes and our trees are hindered from getting rid of water, when, of course, they are not fit to meet the cold of winter, and are

frozen. We commonly speak of this as "ripening" of the wood in the fall, and while the presence of too much water is the main factor which prevents proper ripening, there are others which also hinder the process to some extent. Among these may be mentioned severe summer pruning, which stimulates a late growth and leaves unripened wood to face the winter. Similarly defoliation by insects or fungi may start the tree to putting out new leaves and shoots which are liable to be immature when winter comes on. Also young, newly-set trees which do not have an early start in spring may not get a proper chance to ripen up in the fall. In many trees which are unhealthy the growth processes are slow and an early cold wave may damage them before their wood has had time to become mature.

In a climate like ours, where there are such variations and sudden changes, we can scarcely hope to entirely banish winter injuries. We can, however, help our trees to pass the winters with more security than has been customary in the past by paying some

attention to the factors concerned in the problem. One might sum up the general methods that may be followed to assist nature in bringing the orchard safely over the winter, as follows:—

1. Plant trees known to be hardy for the locality.
2. Keep the orchard vigorous and healthy.
3. Avoid late growth of the orchard. Give it every chance to ripen the wood in the fall. Especially see that it has not too much water in fall.
4. Protection measures may be useful. A humus-filled soil is good insurance against collar rot. A mulch of straw or strawy manure or even a heap of earth will in some cases modify the sudden changes to which an earthy soil is liable.

Dieback of Shoots: This is a very common form of winter injury. It may be seen in almost any orchard. The shoots are killed back from the ends for varying distances. It is extremely frequent among tender trees like the peach, and among trees not quite hardy for the locality, as for instance,



Indian women picking gooseberries, which have been grown as fillers between the fruit trees, in the orchard of Mr. Bell, of Burlington, Ont.



The Skinner Sprinkler System as used in his celery patch by Mr. Buck, of Freeman, Ont. The pipes can be turned to throw water to either side.

the mulberry in the colder parts of Ontario.

It might be noted that this dieback is only a mild form of what occurs normally in many of our perennials, where all the top above ground dies back each fall.

Bud Killing: This is very common also. The buds, and especially the flower buds, are frozen and drop off. In many cases only the delicate stamens and pistils are destroyed and the flower opens but remains sterile.

June Drop: Each year after the fruit has set a large number of fruits, especially among peaches, plums and cherries, drop off in June. Sometimes this is only due to a natural pruning which nature gives to a large crop. A weak tree, or one which bore heavily the preceding year, will suffer in this way. In many cases noted in 1915, however, the June Drop was due to a lack of fertilization brought about by very cold weather during the blooming season.

Spotting of Plums and Cherries:

This effect of late spring frosts was very noticeable this year. It was frequently mistaken for Brown Rot, and while spots were brownish in color they did not increase in size as the fruit ripened. In many cherries examined the spot on the outside had a small counterpart on the pit directly beneath it.

Sun Scald: This term is used to denote the long dead areas on the trunks of apple, pear, plum and peach trees. Plums are especially troubled in this way and whole orchards may be seen in which every tree has a dead strip on the south or southwest side of the trunk. In this case the trouble seems to be due to sudden changes of

temperature in March and April. A calm, bright day raises the temperature on this side of the tree and starts a little growth. The sudden fall of the temperature at night is then too much for the tender tissue and a strip on the exposed surface dies. A board loosely nailed on the south side of the tree, a coat of whitewash on the trunk, or a cylinder of building paper loosely wrapped around the trunk have been used to prevent Sun Scald. These, of course, should be put on in the late fall. When the damage is already done, sun scald areas should be cleaned out and the wood painted to prevent decay.

Crown or Collar Rot: These names are used to denote a killing of the stem of a tree at the ground or below it, and it often involves the roots as well. Very many orchard trees of all ages die annually from this trouble, which is the direct result of freezing of the part below ground. Such trees in spring may put out leaves and flower and then suddenly wilt and die. More frequently, however, the girdling is not complete and the tree lives for two or more years after the injury was sustained, the small living connection with the roots sufficing to keep it alive. Such trees are characterized by small and yellowish leaves and many dead twigs. When one side of the trunk only is frozen in this way the branches above it may be unhealthy and the rest of the tree normal. If not too badly injured the tree may recover, but when such freezing takes place at all it is usually bad enough to kill most of the way around the base of the trunk. One can easily determine how bad the damage is by cutting into the bark of the underground stem. The

normal bark is greenish white, while the dead tissue is quite brown clear to the wood beneath. Collar rot is prevalent on low, wet soils, especially if these lack humus. It has also been found that a mulch of straw or barnyard manure or a heap of earth around the trunk helps trees to pass the winter without this root freezing, presumably because they tend to prevent sudden changes of temperature in the soil. It may be noted here, also, that where a budded tree is used and the stalk grows faster than the scion, or is imperfectly united to it, the liability to injury of this kind is greater than where the two parts of the tree are uniform in size and there is a perfect union. There is a strong suspicion also that the stock used in certain cases is one that does not possess the hardy qualities that ought to be expected of it.

Black Heart: One often meets with fruit trees in which the whole of the heart wood has taken on a brown or dark color and to these cases the name Black Heart has been given. They are due to winter injury also, and it is a very unwise proceeding to plant out nursery stock affected in this way. Apple, pear, plum and peach trees are all subject to this form of injury and experience shows that if such trees live at all they make little growth for the first two or three years. When the injury occurs on a tree that is established it may not do much harm unless the injury is very severe, and flourishing orchards can be seen which years ago had their heart wood browned and darkened by some exceptional winter. It is advisable, however, to examine nursery stock and see that it is free from Black Heart, for nothing but dissatisfaction will come from planting out an orchard with trees affected by this sort of winter injury.

Strawberry Root Killing: A great many complaints have been made this summer of the death of plants in strawberry beds. They usually looked well in spring, and put out leaves and flowered in a normal way, but when the soil dried out they shrivelled up and died out singly and in small areas all over the bed. This killing was variously assigned to the use of too strong manures, to the strawberry mildew which was unusually prevalent this season, or to the "white grub" which has recently done considerable damage to strawberry plantations in various districts. It was not due to these, however, but to the freezing of the strawberry roots, possibly in early spring after growth had begun. In the plants which are beginning to wilt the root system can be seen to be brown and dead. In older plants the outside or cortical part of the roots brown normally in winter more or less, but in

these the central part is also dead and, of course, useless. The lower part of the crown tissue above the roots also shows in most cases a like discoloration.

Chlorosis or Yellowing of Grapes:

The foliage of a very large number of grapes shows this year a pronounced yellowish tinge, due to early spring frosts. Wordens have been noted as especially troubled in this way. The strips or areas most affected by the disastrous frost of May 27 now show more

of this chlorosis than the rest of the grape district. It is not thought that any permanent yellowing will result, but that it is a temporary condition only that will disappear next year.

Asparagus Curl: Many of the late asparagus shoots come up curled and dwarfed with a brownish streak on the inner side of the curl. This also was due to the late spring frosts which slightly injured the shoots on one side near the growing point and brought about an irregular growth when the shoot elongated.

Success in Strawberry Growing

UNUSUAL success has attended the efforts of Mr. Geo. Johnson, of Peterborough, Ont., as a grower of strawberries. His start was made almost by accident. While busily occupied a few years ago farming ninety acres of land, he yielded to the suggestions of his family and put in five rows of strawberries at one end of a small field, "just for family use." That was four years ago. The small family-sized plot of berries proved a pleasant revelation to Mr. Johnson of the possibilities of intensive cultivation, as the five rows which had been intended to supply only the requirements of the family yielded an additional revenue of \$104 from berries sold.

The following year, Mr. Johnson set out half an acre. This also proved profitable, with the result that the next year he had one and one-half acres in bearing. Markets favored his new venture, and all of the crop was sold at prices ranging from twelve cents to eighteen cents a box. From his one and one-half acres, Mr. Johnson picked 5,100 boxes. When the boxes had been paid for and picking expenses deducted, he found that he had realized \$670 from the small area in fruit.

In 1915 the market was not so favorable, and equally satisfactory returns were not realized, but still they compared to advantage, considering the labor and capital expended, with the returns from the remainder of the farm, on which general farming was still practiced. Herbert raspberries have been added, and have proved almost equally satisfactory with the strawberries.

"Senator Dunlap and Parsons are my favorite varieties," Mr. Johnson informed a representative of The Canadian Horticulturist who visited him in the picking season this summer. "We set the rows three and one-half feet apart, and the plants two feet apart in the row. We allow the runners to run freely, and all the training they get is that given by the cultivator. Of course we aim to cultivate the same way each time. We aim to take two to three crops off a bed. I have made more money by following this practice than by plowing down after the first crop has been harvested."

In one respect, Mr. Johnson's methods differ radically from the methods of other fruit growers in his section. "Many have the idea," he said, "that the strawberry plantation

should be kept clean the first year but not touched the following spring until the crop is off. We followed the common practice at first, and one year the weeds stood a foot high over the whole bed, but we did not dare to pull them. That year was the first cropping season for the bed, and we should have got a maximum crop. Instead, we got a poor crop. The next year we cleaned that bed thoroughly in the spring, and the result was larger pickings throughout the season."

The cultivator is kept going constantly in the Johnson plantation, even during the picking season. "Moisture conservation is an absolute necessity to a good crop of berries," said Mr. Johnson. "Rain will spatter more sand on the berries than the scuffer ever does."

Barnyard manure is the staple fertilizer. Mr. Johnson plans to grow roots the first year, applying a good coat of manure to them. Berry plants are set the following spring, and they receive a second and equally heavy coat of manure.

Factors which have contributed to Mr. Johnson's success have been the fact that the soil on his farm is particularly suited to small fruit culture, while one of the best markets in Ontario, the city of Peterborough, is only a couple of miles distant. These conditions have enabled him of late to secure a larger return from his what are now five acres in small fruit than he formerly obtained from his farm of ninety acres.

The Berry Patch

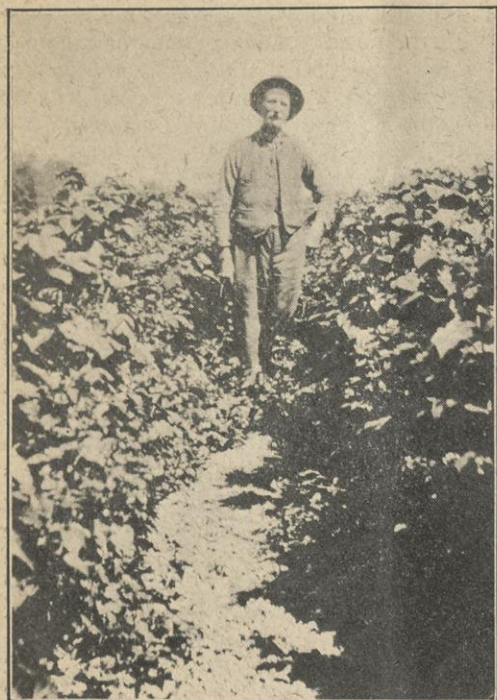
What treatment should be given the raspberry plantations which have borne berries this season? The best treatment is to cut out the old canes as soon as they are done bearing. The new canes should also be cut to the proper number in each place, usually about five. The material which has been cut out should be carried out of the patch and burned. In this way much decay and other fungous trouble will be avoided. There are also many insects in the various stages from egg to adult which are destroyed by this practice. Another thing that is gained is the better development of the canes which are to bear next year. They get more sunlight by such a plan.

When the canes have been cut out and burned, it is a good plan to cultivate between the rows. Stir up the ground which has been tramped by the pickers and thus put it in condition for the continued growth of the plants.

A group of highbush cranberries in the back yard not only adds color to the yard in autumn, but also furnishes a good jelly material close at hand.



The strawberry patch from which Mr. Johnson, of Peterboro, has obtained his profitable results.



Mr. Geo. Johnson, of Peterboro, Ont., in a section of his raspberry patch.

Orchard Reminders

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

Late July and early August, although not nearly as busy a time of year for the amateur fruit grower as the spring, still has its duties. The raspberry plants can now be attended to, to good advantage. The fruiting season is over by now, and the wood which bore this year's crop is probably dying and should be removed this early autumn. If your plantation is infested with raspberry cane blight it will be showing now, by the discoloring of the canes, which will just begin to die by wilting at the tips. These discolored canes should at once be removed and burned; in fact it is a good rule to remove all dead wood and burn it at once so that in case a disease is present it will not be a further source of infection.

If you have black raspberries growing, cut back the new canes as soon as they have reached the height of two and a half feet to three feet, otherwise they are very difficult to handle.

In the gooseberry plot preparation should now be made for propagating next year. The best method for propagation is layering, and if it is intended to layer next season the bushes should be severely pruned early this autumn, which will induce a strong wood growth next spring. As soon as this growth is practically complete, which will be about next July, earth should be heaped around the bush so as to cover everything except the young tips of the new shoots. This soil is packed down and then a mulch of fine soil is

put on top of this. By autumn the young shoots will probably have rooted when the mound can be removed and the rooted shoots separated from the mother plant, and set out in the places intended for the new plantation.

The strawberry beds should receive attention. If in the old bed you are troubled with leaf spot or rust, care

should be exercised to keep it off the new forming foliage of the runners. In some cases this may be effected by picking the diseased leaves from the old plants and burning them, while in cases where the disease is bad, frequent sprayings with Bordeaux mixture will be necessary to keep the young foliage free of rust.

Approved Orchard Methods Again Prove Profitable

THE possibilities that lie in many a neglected orchard have been revealed, among others, by F. H. Johnson, of Bridgetown, N.S., who for some years has obtained an average profit of one hundred dollars an acre from a reclaimed orchard. These results have been accomplished by the thorough application of the principles of orchard practice frequently described in the columns of *The Canadian Horticulturist*.

Mr. Johnson's orchard comprises ten acres, five of which are in full bearing. When he purchased his farm in 1899, the orchard contained 300 apple trees. The trees had been badly neglected, having been left in sod, seldom pruned and never sprayed. They were covered with a growth of moss, and had a starved and stunted appearance. The annual crop was about one hundred barrels of inferior apples.

As soon as the land was fit to work, the spring after he took charge, Mr. Johnson plowed up the orchard and kept the ground thoroughly cultivated until the first of July. A cover crop was then sown. Meanwhile the trees were sprayed regularly. In the autumn his efforts were rewarded by three hundred barrels of clean fruit of good size. The orchard now contains 1,000 trees, one-half of which yield an average crop of 800 barrels of first-class merchantable apples. When asked by a representative of *The Canadian Horticulturist* for details of the methods by which these results had been reached, Mr. Johnson readily responded.

"I attribute," he said, "what success I have met with to four operations: First, spraying; second, cultivation; third, fertilizing; and fourth, pruning. The best soil for an orchard is a light or a gravelly loam. Mine is a light loam. My orchard is situated on the crest of a hill and slopes to the north, west and south. So far as I can see, the slope of the orchard does not make any difference in this part of the country. Of course we are not troubled with spring frosts here. It is possible, perhaps, that where these are prevalent a northerly slope would possess slight advantages.

"I have practised thinning for ten years with good results. About the

first of July I go through the orchard for this purpose. This practice gives me larger fruit, more even in size and better colored. Moreover the fruit can be handled much more quickly in picking and packing. Thinning is one of the important operations in growing first-class fruit. The superintendent of the Dominion Experimental Station has directed experiments in thinning in my orchard. The Blenheim variety was selected for the test. Five trees were thinned and these were compared with seven trees unthinned. The trees were uniform in size and were equally well set with fruit. About seventeen per cent of the apples were removed from the thinned trees on July 15th. The apples were counted when picked and were packed by the Co-operative Fruit Company of Bridgetown. All the barrels were marked so that the shipment could be traced to the selling point. The apples were sold on their merits and the purchaser knew nothing of the nature of the experiment. The number one fruit from the thinned trees sold at thirty-four cents per barrel more than for the same grade from the unthinned trees."

Cost of Production.

Mr. Johnson values his bearing orchard at five hundred dollars an acre, which at six per cent. is a rental of thirty dollars. He has kept complete records of his expenditure and receipts. The fertilizer used per acre averages eleven dollars and 50 cents. Sowing the fertilizer costs one dollar an acre, discing and harrowing five dollars, seed for the cover crop two dollars and fifty cents, barrels thirty dollars, spraying twelve dollars, and picking, packing and truckage thirty dollars. The total outlay per acre of bearing orchard he places at one hundred and twenty-two dollars. For the past number of years he has averaged one hundred and twenty barrels to the acre, and his average price for all varieties has been one dollar and eighty-five cents a barrel. This gives him a gross income per acre of two hundred and twenty-two dollars and a net profit of one hundred dollars an acre. These returns show an encouraging improvement over those formerly obtained from this land.

An Amateur's Homemade Greenhouse

F. E. Ellis, Peterboro, Ont.

THE two and one-half dozen tomato plants growing in our backyard garden were started by a neighbor of ours in a simple greenhouse of his own construction. They are even more vigorous and promising this year than those we grew last year, although then we had a bumper crop. Our asters, which will soon show a beautiful bank of bloom on two sides of the house, have also made an unusually satisfactory growth. The cold weather that we have had does not account for their success this year. We attribute it also to the exceptionally strong plants which we secured from this same neighbor. Our neighbor is Mr. A. McKenzie. The story of his success with his greenhouse is an interesting one.

Mr. McKenzie is a foreman in one of the big factories of our city. Gardening has always been his favorite hobby. His backyard has always produced abundantly of the many good things that gardens grow when given intelligent management. Last winter times were dull and the foreman and men of the factory in which Mr. McKenzie was employed, were working on part time and short pay. Mr. McKenzie decided, therefore, to turn his hobby to profitable account. In the time that would otherwise have been idle on his hands, he constructed a 10 x 15 foot greenhouse in one corner of his backyard. Much of the material was obtained from odds and ends around his house. In this he installed a small jacket heater and ran a couple of wires from his residence to light the greenhouse. The completed house, as seen in the illustration herewith, cost about fifty dollars for materials.

As soon as the house was completed

it was put into use. During the late winter and early spring, thousands of plants of such vegetables as tomatoes, cauliflower, cabbage, onions and peppers were grown and hardened off in six cold frames which had been built in conjunction with the house. Plants of such annual flowers as asters, carnations, stocks and lobelia, were also grown for sale. Geraniums and foliage plants were also grown to a limited extent. Mr. McKenzie took the very best of care of his greenhouse stock, hardening it carefully in the cold frames. When he started he did not know where he was going to find a market

for his stock, but customers came readily and naturally and he disposed of it all among his neighbors and could have sold many more plants had his producing capacity been greater.

Mr. McKenzie plans to start his greenhouse earlier in the season next year. If others who purchased plants from him have had as good success as we have had, he again should have no trouble in disposing of his stock. This year, of course, Mr. McKenzie had a considerable outlay in building his greenhouse and it will add but little to his income. Next year, however, without further capital expenditure to make and as a result of experience gained this year, he expects to find his greenhouse a source of considerable revenue as well as a pleasant hobby.

Garden Reminders for August

J. McPherson Ross, Toronto, Ont.

THIS month is the clearing house for the garden, for our successes and failures are so well defined by this time as to enable us to profit by this year's experiences in next year's operations. A garden diary is a useful thing to keep, as the mere act of writing down sundry notes of the different operations or certain facts in regard to the various plants serves to impress them on our mind, and adds to the store of knowledge which time and experience gives to the most skillful of gardeners.

While our garden now is at its best, with its flowering results, we can see how best to make changes for the better another year. By changing such a tree or shrub, creating a new bed here, or a border there, we can improve on the picture the garden now presents. We cannot too strongly advise the garden maker to plant in masses or groups whenever possible.

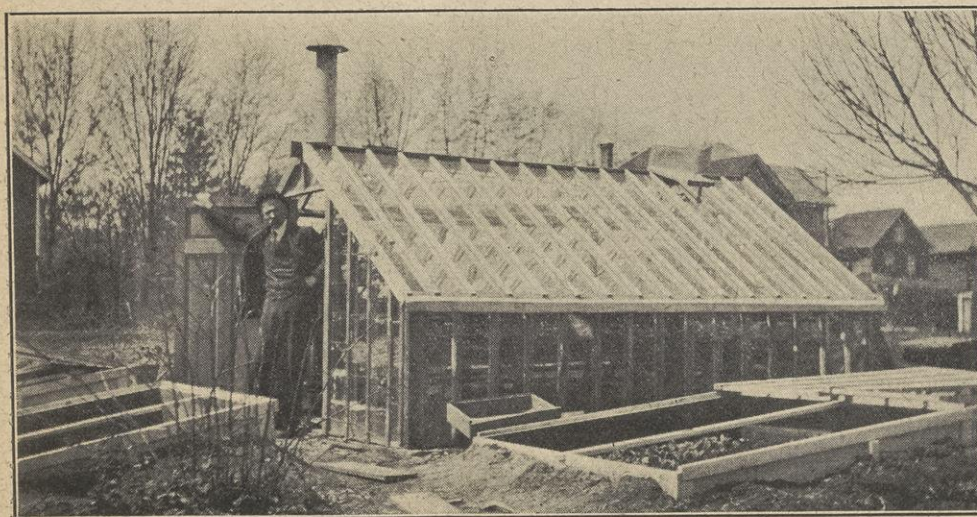
While every plant or shrub is desirable in itself, still a dozen plants in bloom of one variety in color has more effect than a dozen plants each different in kind. For instance, the African tamarisk is a dainty shrub with fine heath-like foliage, with spikes of delicate pink flowers. It grows into a tree-like shrub, most graceful in character, and is always beautiful. As an individual shrub, best plant a dozen of them in a row, or in a group, and it makes a picture indescribably beautiful, calling forth loud expressions of admiration from the least observant.

This is the time to stimulate your dahlias with copious waterings of liquid manure, or failing that, place a liberal mulch of well rotted manure around the base of the plant in a saucer-like depression made in the soil to hold the water.

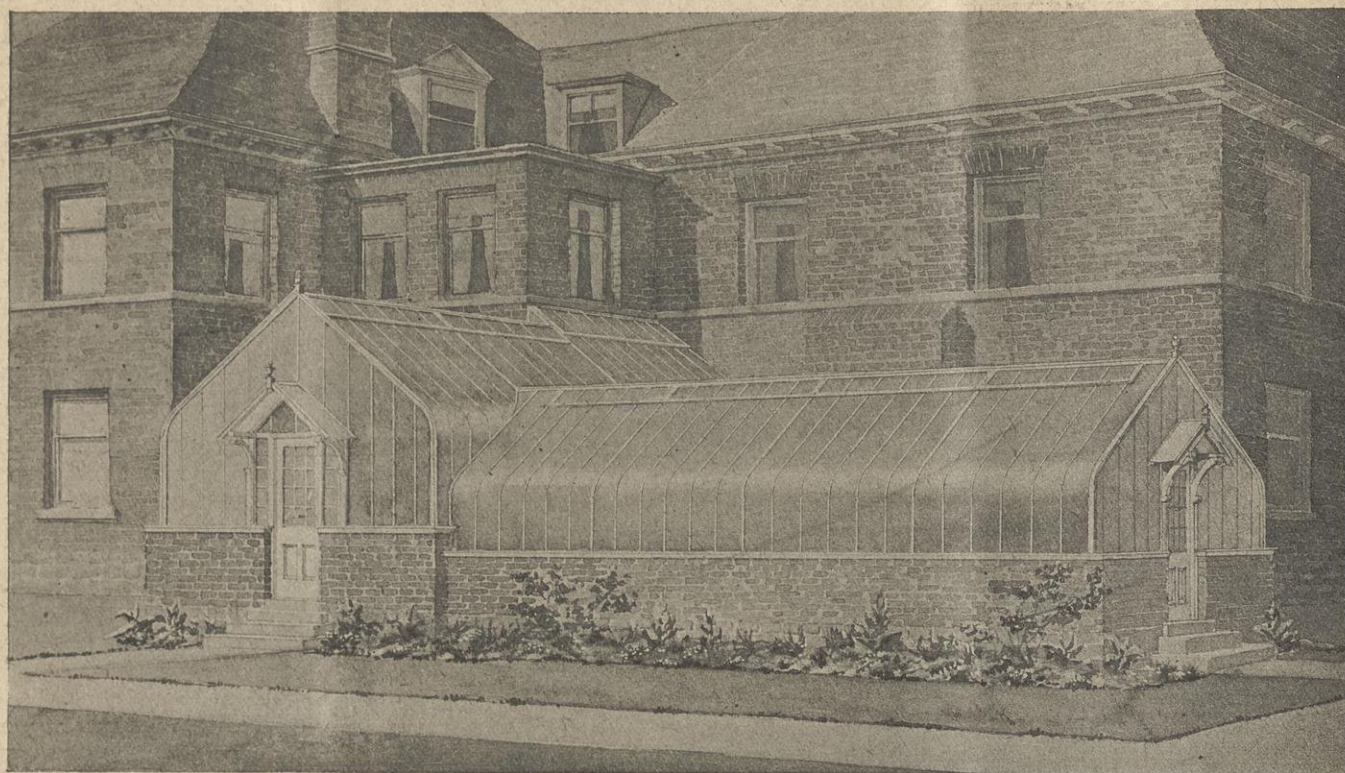
Sow seeds of all the biennials and perennials. If this is done in the early part of the month you will have plants strong enough to prick out into a cold frame or well prepared bed of good soil. Pansies, daisies, campanulas, foxglove, sweet william, pyrethrum, and many other garden favorites may be thus reproduced by the hundred for permanent planting in the borders.

In the latter part of the month one can get a border ready for planting during September of such varieties of perennials as they desire. In order to have good lasting results it will pay to do it thoroughly by trenching it.

Trenching is a term used by gardeners when they dig the soil at least two spades deep, incorporating at the same time a liberal coating of well rotted manure. Such a spot, of course, should be well drained. Preparing the ground this way is particularly useful if of a stiff or clayey nature. Breaking up



A simple greenhouse, erected at an expense of about fifty dollars, by Mr. A. McKenzie, of Peterboro, Ont., who may be seen in the doorway. (Note accompanying article.)



A type of greenhouse that is being constructed in considerable numbers. Note the curved eaves. Lapped glass is here used.

the hard pan beneath allows the roots to penetrate deep in the cool, loose sub-soil, and to draw moisture from beneath, giving luxuriant foliage and abundant bloom, even though the weather may be particularly dry. Paeonies, phloxes, hollyhocks, and in fact all the garden favorites luxuriate under such conditions. As soon as the border is ready you can commence planting your paeonies, cutting off the foliage down to a couple of inches of stem. The old roots may be carefully divided if you want more plants; if not, plant the old roots whole. All your herbaceous plants will be the better if replanted into a new bed if they have been growing for several years in the one spot. As a general rule, plant the latest growing at the back of the border, or if it is in the centre of the garden, in the middle, and grade down to the lowest, which should grow by the edges. The charm of a border is in the contrasts of color and forms of foliage, so plant in groups or masses as before advised.

So much is to be said about planning changes in the garden that one can hardly mention everything in a short article, but do not overlook having some evergreens in your garden somewhere.

Of late years many gardens have been enriched by the planting of the Colorado blue spruce, juniperus, Virginiana glauca, abies veitchii garden cedars, and the beautiful retinosporus. The latter evergreen requires a little

protection from strong winds and the winter sun until it gets well established. They do best in a moist situation; in fact, they are an evergreen that requires a lot of water, in common with their American cousin, the common white cedar. If you have not succeeded with this class of evergreens try growing them in a moister situation.

Insects have been a great pest in gardens this summer, particularly the aphid. For the common green aphid spray frequently with kerosene emulsion. For the black aphid, which both-

er the heleniums and rudbeckia, use a solution of nicotine, a preparation from tobacco, sold by the seedsmen, and particularly useful in destroying these pests outside and in greenhouses.

Any time now make cuttings of geraniums and other soft wooded plants, placing them in a mixture of soil and sand in shallow boxes called flats. Put them in thickly to allow for failures, and place the boxes in some shaded, sheltered corner. Water whenever dry. They will root and make good plants for early potting when you start up your greenhouse in October.

The Vegetable Garden

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

In the potato patch attention to the potato bug and to the late blight will still be necessary. The ravages of the potato bug will, of course, be fairly well over, but in case they are not, spray the foliage with some poison. Spraying for late blight of potatoes should have been commenced as soon as the plants attained a height of four or five inches. For the late blight Bordeaux mixture is recommended, and by adding paris green or arsenate of lead the potato bugs may also be controlled. To properly guard against the blight frequent spraying at say intervals of about two weeks will be necessary. The formula to use is: Blue stone, five pounds; lime, four

pounds; paris green, twelve ounces; water, forty gallons.

The blue stone is dissolved in twenty gallons of water, and the lime is gradually slaked in the same quantity of water. After both are thoroughly in solution and in suspension they may be poured together and the paris green added. This should be used at once. If it is desired to keep same on hand, keep the two stock solutions of copper and lime separately but not mixed together.

If troubled with celery blight, bordeaux mixture of the strength of four pounds blue stone, four pounds lime, and forty gallons of water is good. Spray frequently and thoroughly.

good A Method of Avoiding Winter Losses

H. Harley Selwyn, Ottawa, Ont.

IF a colony is to be carried through the winter successfully, it is absolutely essential that it shall have an abundance of stores, no matter how favorable its surroundings may be. Of the many methods of feeding in vogue, the one which has given us the best all round satisfaction is by means of inverted penny lever honey pails with perforated tops. This feeds directly over the cluster. It was with no little pleasure that we noticed not long ago, in "Gleanings in Bee Culture," of Mr. J. L. Byers' conversion to this method of feeding as the simplest and surest he has met with. Let it be emphasized, then, that fall feeding is one of the primary factors in good wintering.

The Matter of Queens.

In this also lies the reason for a considerable percentage of winter losses, other conditions being right. Old queens (two, three, and four years) are generally recognized as less fit to survive long winters. Neither do they enter in upon the work of egg production the following spring with the vim of queens mated the preceding fall. On this basis, we deem it advisable to requeen each year after the honey flow.

With heavy colonies, young queens, and a goodly share of brood and bees—the latter will be there if a young queen supplants the old in August—it is time to consider the form of repository to hold your colonies.

Cellar Location and Structure.

In order to facilitate the work of handling the hives, it is a good idea, if possible, to build the cellar in a hillside, and thus provide an approach to the entrances nearly on a level with the cellar floor.

The structure under discussion in this instance is 16 ft. x 20 ft. square, with a 7 ft. wall, and built of concrete. It contains easily 150 colonies. The ceiling is plastered and, with a double-boarded floor above, forms an air space in which to kill the cold driving down from above. The cellar floor is cemented and makes a clean and permanent base from which it is easy to sweep up dead bees during winter months. One main 3 ft. x 6 ft. door provides access during spring and fall, whilst a trap door in the floor of the building above the cellar makes entrance easy when snow lies deep over the porch and hatch protecting the main entrance.

Ventilation.

Good ventilation in a bee cellar is absolutely essential, as bees are much like human beings in that they require plenty of fresh air. In order to insure

this air being of a moderate temperature, it is passed through a sub-earth ventilator running in some 60 feet from a point on the hillside and rising in the centre of the cellar floor. This ventilator is built of 6-inch unglazed drainage tile, and at the furthest extremity a T pipe is inserted, from which a galvanized iron pipe rises vertically and reaches well above snow level. A cap or hood serves to keep out the snow.

CHANGE IN ARRANGEMENT.

In this issue we make a further improvement in The Canadian Horticulturist and Beekeeper. Instead of having two special title pages and two different sets of volume numbers, on pages 181 and 191 respectively, as hitherto, we hereafter will have only one on page 181, as in this issue. The pages devoted especially to the beekeeping interests will continue to appear in their usual position, but without the usual title page and volume number on this page. This, we trust, will make the issue more complete throughout and more pleasing to our readers.—Editor.

This line of tile also functions as a drain, as it carries a considerable grade downhill, and the cellar floor slopes from all sides to the central point occupied by the elbow.

For outlet of foul air and moisture given off by the numbers of respiring clusters, a ventilator is cut in the ceiling and passes into the storehouse above. In this way it is protected from gales and much variation of temperature, which tend to incite too rapid ventilation, draft, and lower tempera-

ture in cellar. An estimate of the quantity of moisture which escapes in this way from the cellar, and which under some forms of ventilation remains behind, may be judged by the masses of hoar frost on the rafters, especially directly above the vent, where it forms in stalactite-like bodies.

To judge of how uniform the temperature has been maintained in this cellar during the season of 1911, records were taken three times a week regularly from date of setting away until the warm wather of spring. During all that time, in which many spells of 20 and 30 degrees below zero were experienced, the thermometer suspended in the cellar constantly registered 40 degrees F. This uniformity holds good late into the spring, and has done so for four consecutive years.

The colonies are blocked up off their bottom boards to allow of ready ventilation to each hive and avoid the choking of entrances which sometimes occurs. Canvas quilts of 8-oz. material are placed over each hive some time during the fall and the old ones removed. These are indestructible by the bees and provide a splendid means of slow upward percolation of moisture and air from each cluster. This quilt we figure an item of no small import in good wintering.

This is the system as followed by us in a nutshell, and it has solved the wintering problem so thoroughly, in so far as our bees are concerned, that the doubt surrounding the forthcoming of a bounteous crop of nectar at its appointed season seems far greater by comparison.



A corner of Mr. Selwyn's main yard, with the cellar entrance in the foreground.

X The Possibilities of Beekeeping for Women*

Thomas McGillicuddy, Dept. of Agriculture, Toronto

IS beekeeping an industry in which women can profitably engage? This is a question which is frequently asked, and to which different answers have been made. Miss Ethel Robson, of Denfield, Ont., has answered this question as follows:

"For the girl who wishes to make her living in the country there is probably no business which offers a better opportunity than beekeeping. The capital required for a start is comparatively small, brains and perseverance count for more than money, and with the present improved markets the returns are sure. The work is particularly adapted for women as it has to be done in good weather; the greatest objection is the somewhat heavy lifting; best of all it is sufficiently interesting to be absorbing. The stings, so appalling to the uninitiated, always hurt, but unbelievable as it may seem, you get used to them, and it is not like hanging either, you don't have to die first.

"The question of profit in beekeeping is a difficult one to answer definitely. A hive of bees is usually valued at about five dollars. I myself bought some for four and some for five one spring; then we picked up a few odd hives at sales for less than this. However, you cannot count on this as it is only in case someone has died or is going out of business that you can get them for this. If purchased from a regular dealer they would cost much more. Supplies for running fifty colonies would be worth at least one hundred dollars. As for profits five dollars a colony ought to be a fair average, though this is dependent on so many circumstances that the statement does not count for much—location, kind of nectar-bearing plants, condition of bees, feed required for winter stores, the season, etc. One year, with a spring count of sixty-five colonies, I had between three and four hundred dollars clear."

Mrs. G. A. Deadman, Brussels.

The late Mrs. G. A. Deadman, of Brussels, for thirty years assisted her husband in managing their large apiary, and she understood the business as few persons did. Speaking recently to the writer on beekeeping for women, she remarked:

"The apiary has an attraction—yes, a fascination—for the woman who goes into beekeeping. It certainly had for me. Then, it is a healthful occupation, for it is outdoor work largely, and it gives one a change of work and thought. Some heavy lifting is necessary now and

*From the Farmers' Magazine.

then but assistance is generally available. However, the woman who enters upon beekeeping must make up her mind to give all her time to it during the busy periods of swarming and extracting—say during June and July. After that there is packing, bottling, labeling, etc., to be attended to, although this can be lightened by selling in bulk, which is usually the better way of disposing of the honey. But for months together the bees require little or no attention.

"Profits, as in other occupations, will be variable. The value of a hive of bees ranges from six dollars to ten dollars—nearer the latter mark usually. Then there is a certain cost for appliances, say one hundred dollars in a small apiary. Yields of honey range from twenty-five to one hundred pounds a hive, but taking one year with another a good beekeeper should average seventy pounds to the colony, spring count. This, with the value of the natural increase in colonies by swarming would make the annual revenue per hive ten dollars, or perhaps a little more. Forty colonies of bees,

therefore, should bring a woman beekeeper about four hundred dollars for a few months steady work, leaving her considerable time for other employment.

"As to the honey flow much depends upon the weather, which may be just right, or it may be too dry, too wet, or too cold. The honey is made chiefly from clover bloom, and the blossom of the linden or basswood tree. The buckwheat bloom late in the season is also much appreciated.

"But just to show you how the honey crop varies, I would say that one year (1911) our apiary failed us, and we netted only two hundred pounds from some three hundred colonies. It was our worst year. But the next season, although about one third of our bees had been killed off, we sold fully twelve thousand pounds of honey.

"The woman beekeeper may be born such, but even then if she be wise she will serve a real apprenticeship in the business. She should visit some well-conducted apiary, and spend the honey season of say two months there even if she gets no remuneration for her labor. Then she should start for herself with only a few colonies at first, enlarging her apiary as she gains experience."

+ Marketing the Honey Crop

Lawrence A. P. Stone, Erie Beach, Ont.

THREE years ago, one of the most prominent beekeepers in my vicinity sold his best white clover honey for nine and one-half cents retail in pails. Not far from his apiaries was another prominent beekeeper, who sold his honey of the same grade for twelve and one-half cents wholesale in sixty-pound tins. From what I have heard, both have continued selling at those prices since then, with the result that one makes about three hundred dollars a year more on his sales of the same amount of honey than the other. The former rushed his to the market as soon as ripe, and sold it practically at any price offered. The latter held his over until the price he considered a fair recompense was offered.

The foregoing comparison illustrates only too frequently the condition of affairs in Ontario. Unfortunately for the honey business, there are too many of the first kind of beekeepers. The result is a wide fluctuation of the market and a great deal of dissatisfaction, which becomes acute when many of the beekeepers claim they cannot get the prices for honey that the committee of the Ontario Beekeepers' Association has decided upon.

Why cannot the beekeepers get the prices quoted? Well, the main reason is because most of them are like the first apiarist mentioned: They will not hold

honey long enough until buyers are willing to make a fair offer. Instead, they desire quick, ready money, and sacrifice their honey to the tune of nearly three cents a pound less than what should be a fair price. The consequences are a market glutted with honey from September to November, while along towards spring there is very little to be had.

Such is the state of affairs in Ontario, and such has been the experience in agricultural production the world over. There are but few real remedies. The first and foremost is strict co-operation among the producers; the next, and perhaps the last worth mentioning, is a good bank credit. The first, to me, is by far the most practical, as not every beekeeper has enough capital to inspire a bank's confidence.

Co-operation has had as many failures as successes, but in spite of this fact no other method seems to have proved more efficient. The cause of the failures in the majority of cases has been due to two things: either the members of the associations did not hold closely to the rules set down, or else they had bad managers. In the first case, the disaster was brought about by members who sold their product independently, instead of through the association, as promised. Yes, these



A scene at the field meet of the Toronto Beekeepers' Association, on May 24.

faulty members did make a little more money until the organization was broken up by the buyers, and then they got a good deal less than through the association.

Let me illustrate this point. There is an organization of farmers in Wisconsin who sell all their dairy products to their own co-operative association at a price determined by the members. The large dairy interests decided that the prices at which the association sold their products to them were too high, and decided to break it up. A man was therefore sent out to offer prices to the farmers, higher than those of the association to which the farmers belonged. Unfortunately for the man in question, the majority of the farmers were Swedes, and as the man afterwards told a friend of mine: "I could handle an American farmer any day, but these Swedes were a raw deal!" The reason for this, he explained, was because every Swedish farmer wanted to ask the advice of his friend, Yen Yenson, before deciding, and the latter, always a prominent member of the community, advised the farmer to stick to the association, which the farmer did unswervingly.

But now there are organizations of Americans formed in such a way that the members cannot break away as they choose. When a commission merchant offers them a little higher price they are bound by bond or else the right is reserved to sue any member for damages should the said member attempt to sell his product except through the organizations. The membership lasts at least one year. These associations are the kind that Ontario needs to make co-operation a permanent success, and although part of the rules may sound drastic, they work and work well. Each member owns at least one share of stock in the association, which entitles him to a vote in the management, but no member is allowed more than one vote. A well-paid manager is absolutely necessary, as only a well-paid one will produce the goods.

Now, how do these associations prove so advantageous to the producer? First, he can turn in his honey to the organization as soon as it is ripe and receive from it what is called a "warehouse receipt." The receipt can either be taken to a bank and cashed in (as one would discount a note) for about two-thirds of its approximate value (the value is fixed approximately by the average of past years and the prospects of the coming season) and the rest paid the member when the honey is sold by the association, minus the discount to the bank. When desired, a member can wait until his honey is sold and then get his money from the association without paying the discount.

Besides this benefit of getting ready money as soon as the member desires, we must not forget the greatest one: His honey is sold at a much higher price, in most cases, than if he himself was putting it on the market. Moreover, his mind is free to put all his effort on production, so that nine times out of ten his crop average will be larger than formerly, and he is saved many a worry in preparing to sell.

However, the association does not try to fix prices to the buyers of the product. It simply exerts its power in bargaining for the best price available, which is far greater than the power of the individual producer. Here is where the benefit of a first-class manager of the association comes in. It is his business, by investigating conditions, to know at what price he can sell the honey at the best advantage. Moreover, fixing prices is likely to interfere with anti-trust laws, and all legal difficulties should be avoided. The association not only sells the products of the beekeeper, but also buys for him his supplies at much below the market price, so that the cost of production is much less and the selling price of the finished product much higher. Isn't this rather worth while, brother beekeepers?

Notes and Comments

By Morley Pettit

At the National Convention a recommendation was made that denaturized sugar be manufactured for the feeding of bees. In other words, this is a sugar with a certain amount of harmless coloring matter which would make it unfit for human consumption but quite suitable for the feeding of bees. Then it was recommended that arrangements might be made with the Government to allow this sugar to come in duty free, in order to encourage the beekeeping industry. In view of the fact that all shades of color are to be found in sugar offered for sale in the grocery stores, I was wondering to what extent beekeepers' families would object to using sugar that could be fed to bees, even if the color was not the regulation white, provided the price was a reduced one.

"Gleanings in Bee Culture" pays an editorial tribute to the value of a German scythe advertised in its columns, stating that this German blade is preferred by all, on account of its splendid "execution." I am inclined to think that all Canadian beekeepers, and many in the United States as well, would favor applying the "execution" to the Germans, and confining purchases to Canadian-made or American-made goods.

"The Dixie Bee" is an interesting new department in "Gleanings," conducted by Grace Allen, of Nashville, Tenn. There is a touch of brightness and grace about the writings of this new editor that makes her page very readable. Occasionally she breaks into verse, a style of phrasing which is all too rare in bee literature.

"June in the heart of you, June in the wings!

June in the part of your spirit that sings!

Bees, are you spirit? Or breathless desire,

Or the rapture that dares to aspire?

Daring to dream and then daring to do!

They'll come true—

Those brave dreams—

They'll come true!"

The philosophy of her last paragraph is very true: "If all of us had the persistence and the apparently eager zest for effort that the bees show, most of us would come nearer the achievement of our own fair dreams."

Grace apparently does not believe the statement of some who have had the patience to watch an individual bee and have concluded that each one spends at least half her time lying on her back sleeping in a cell. After all, she has saved the situation by introducing the word "apparently."

Mr. Pettit's Visit to the Maritime Beekeepers

Editor, The Beekeeper: I am on my way (July 10) to spend the next three weeks in the Maritime Provinces, studying beekeeping conditions and giving them a start in their apiary inspection and demonstration work. Incidentally, it will be the longest vacation from Ontario affairs I have enjoyed since taking up the duties of office in April, 1909.

A local train out of Montreal took me to Bedford, Que., where Mr. F. W. Jones met me and took me out in his automobile for dinner and a good visit at his beautiful home. Mr. Jones started beekeeping when he was fifteen years old. He has been at it ever since, and judging by appearances his efforts have been crowned with success. He is now well known throughout Quebec and many parts of Ontario as a manufacturer of beekeepers' supplies and a breeder of Italian bees and queens. He has an ideal location for beekeeping, as his apiary is well sheltered on north and west by heavily-timbered land, and the sequence of bloom provides an almost continuous honey flow. His hives are kept in individual packing cases, in which they are wintered, and from which they are never removed. He considers this the best system for building up strong colonies. The remarkable part of his business is that, with 150 or more colonies, no supers are put on, as they are constantly being robbed of their surplus bees to fill combless packages for shipment to customers all over Canada, as far west as Manitoba. Stimulative feeding in the open air is started quite early and continued whenever necessary.

The bee and queen business is largely in the hands of Mr. Smith's son, Harry. Harry is a lad with a sweet smile, but he does not need to talk to you long to show that he is a live wire for business. I have asked him to send you some photos to go with this.

Woodstock, N.B., July 17: I wrote you last Saturday from Bedford, Quebec, and since then have been too much on the go to send anything further. I arrived in St. John Sunday morning, and rested for the day.

Monday morning, I took the river boat trip up the beautiful historic St. John River. It is a most delightful trip. In fact, the whole week's travelling in New Brunswick has displayed some of the finest scenery of mountain and vale, forest and stream, as well as rich agricultural land, that one could wish to see. It is just another illustration of the soundness of the advice to prospective travellers: "See Canada first."

I arrived at Fredericton on the afternoon of the "Glorious Twelfth," and found that one of the largest Orangemen's celebrations ever held in the Province was just concluded. A bee demonstration had been advertised for the following day, but it proved to be "the morning after the night before." Nobody came. Mr. H. B. Durost, the enthusiastic Provincial Apiarist, was on hand, also the owner of the apiary. The bees swarmed, and the writer took snapshots of the apiary and the swarm. Mr. Hiscoe, the owner, works in a shingle mill and attends to his bees between times. He winters them in a small cellar under his dwelling, manages entirely for comb honey, and is quite successful. He reads a great deal, but has never been privileged to visit other beekeepers or attend conventions. Under these circumstances, he is getting along very well. His bees were working hard on clover and storing well.

Tuesday, we went to St. John, and on from there to Hampton. Wednesday morning, we took a seven-mile drive into the country to the home of Mrs. Durost's

father. It was a great pleasure to visit this model of farm-home comfort nestling away back amongst New Brunswick hills. The solid stone walls gave a grateful coolness to the dining room, which was very refreshing after driving in the broiling July sun. Then the dinner of home cooking, fresh strawberries, cream that was cream, and home-made bread, will long be remembered by the writer, who had been subsisting on hotel fare for some days.

We found here one of the small demonstration apiaries which Mr. Durost has established in various parts of the Provinces. There were simply two or three colonies in modern hives, to show what can be done by improved methods of management.

Wednesday evening, at Sussex, the writer gave an illustrated lecture on bees to the summer school of teachers assembled there at the new Provincial Agricultural School. We also visited Mr. Ashell, one of the most successful beekeepers of the Province. Unfortunately for the beekeeping, however, Mr. Ashell is chief of police, Temperance Act inspector, and agent of the Dominion Express Co., and the duties of these offices do not leave much time for the bees.

Thursday afternoon, at Bloomfield, King's Co., the first real apiary demonstration was held at the apiary of Leonard T. Floyd. Mr. Floyd is a most enthusiastic beekeeper and has corresponded with and conducted co-operative experiments for the writer for several years. His bees are kept more for pleasure, however, and for the fertilization of his strawberries than for the direct money returns. The strawberry business is managed largely by Mr. Floyd's father, who ships to Montreal and other distant markets. The old gentleman has the true business instinct for advertising, and considers that his market has been greatly enlarged by having every crate distinctly marked with the name and address of the producer. He is quite unable to supply the demand for his berries. In the business are the father and two sons, Leonard, who cares for the bees, and a younger brother.

Although the bees are a secondary consideration, they have not been unprofitable, having increased from one colony four years ago to a fair-sized apiary, and having paid all expenses for hives, etc., and about two hundred dollars in addition.

About thirty-five people assembled for the demonstration. The bees swarmed specially for the occasion, and after hiving the swarm and opening several hives, we had speaking and a lot of questions on matters of management until it was necessary to break up the meeting, while the interest was still at its height, to get some strawberries and cream and away to the trains in various directions.

Thursday evening was the opening of a new Government Agricultural School at Sussex, when it was the writer's privilege to represent the Ontario Agricultural College on the platform, along with the local Provincial Lieutenant-Governor, Premier, Attorney-General, Minister of Agriculture, Chancellor of the University, and many others. The Province is establishing a series of these elementary agricultural schools, which are intended to train students for the Agricultural College. Short courses and summer schools for vocational training for teachers are an important part of their work.

Friday was Apiary Demonstration Day at Woodstock. In the afternoon, the people gathered at the apiary of Messrs. Peabody Bros. in the outskirts of the town. Including teachers from the summer school, there were probably one hundred and fifty people present. The apiary consists of about ninety

colonies, managed largely for comb honey. It is doubtless the largest and most modern apiary in the Province. Several of the hives had three supers of sections well filled, and the flow is good for two weeks yet. This shows that bees properly managed here get the goods. The Peabody Bros. are dairy farmers, milking now twenty-four cows, mostly Holsteins. The head of the herd is a handsome registered sire about five years old.

The week was finished off with an illustrated lecture to the summer school of teachers, Friday evening, in the Woodstock Vocational School. This morning, Saturday, it is raining again, so an auto trip around the Woodstock farming district has to be postponed until after dinner at least. I hope to write next from Truro, or perhaps some point in the Annapolis Valley, where I am to spend the next two weeks.—Morley Pettit.

Foul Brood in B.C.

The British Columbia Department of Agriculture at Victoria has issued a notice with regard to "foul brood in bees." It states that this question is one which is giving rise to some uneasiness among the officials of the Department, and should be considered seriously by all beekeepers in the province. The notice says:

"Foul brood, the highly contagious germ disease affecting bees, having made its appearance in different parts of British Columbia, it is important for the welfare of the growing industry of beekeeping that all beekeepers should exercise every possible care to prevent its spreading. It is also advisable that all persons intending to buy bees should write to the Department of Agriculture, Victoria, or to one of the provincial apiary inspectors, (1) L. Harris, Vernon, for the Okanagan district; (2) F. Dundas Todd, Victoria, for the lower mainland and Vancouver Island; (3) W. J. Sheppard, Nelson, for the Kootenay and Boundary districts, for information as to where the danger exists. The inspectors will be prepared to examine and report on hives it is proposed to move from one district to another."

Made in Canada Bees

Morley Petit, O.A.C., Guelph

Ontario beekeepers often remark when they see the advertisements in The Beekeeper, also the price list sent out by the Beekeepers' Association, that we are getting a great many queens from the States when we should patronize "Made in Canada" goods. While it is quite true that we should be patriotic, there are some reasons why United States bred queens are preferred by members, and some very strong reasons why they should prefer those grown in Canada. The southern breeders have a double advantage over Canadians, in that they are able to produce the queens earlier in the season, and that conditions are generally more favorable for queen rearing, so they are able to sell them at a lower price. These two factors appeal strongly to our members and throw a lot of the Canadian orders for queens across the line.

Aside from the question of patriotism, one would naturally expect queens bred from northern stock would be more hardy than those bred in the south. It is simply a question of selection. When severe winters destroy many of our bees, those that survive must be of the more hardy stock, provided they have all received the same care. There is also the fact that queens bred near home do not have so long a journey through the mail. The matter of a few cents per queen does not make very much



A demonstration in the apiary of C. W. Hewig, Neustadt, Ont.

difference in purchasing when we take into account these elements of superiority which are generally in favor of the Canadian-bred. As far as possible, our members should patronize Canadian breeders.

Registration in New Zealand

C. A. Jacobson, Little River, N.Z.

We have had our desire for a registration of all apiaries in this Dominion put into law by the passing of a bill by the House of Representatives. We had three or four deputations wait on the Premier before this was done.

Nobody in the Dominion can now keep bees without registration of apiaries; even if they only keep one hive, registration is necessary. The law is not in working order yet, and we have not had it long enough for me to give a full account of how it will work, but it is bound to work out for the betterment of the commercial beekeeper and of the industry.

Swarm Control in the North

Editor The Beekeeper,—The only trouble I have with my bees is their tendency to swarm in season and out of season. The old swarm or colony will cast a swarm, say June 5th. This new colony is about sure to cast a swarm about July 18th or 20th, and the old one about August 4th or 5th. If there is a second swarm from the old colony it is about sure to swarm about the same time as the old colony. I have had them keep that up until August 22nd and every one winter over. I have been running on comb honey until last year when I ran thirty-five on extracted honey and the rest on comb. The extracted gave me 2,500 pounds, and the remainder, about thirty good colonies, gave me only about 300 pounds of comb honey. I think the cool nights keep them out of the supers. I could sell a lot more comb honey than extracted if I could only have them make it, but this year I shall extract all. This is one of the best places for bees I have yet seen. There is white clover from early in June until the frost kills it in the fall, and lots of alsike clover.

P. B. INGLIS,

Rainy River, Ont.

Comment by Mr. Pettit: Mr. Inglis' ex-

perience corresponds with that of other beekeepers from whom I have heard in the north. Excessive swarming seems to be one of the troubles. While I have not kept bees in the north, I would think that this could be overcome by careful attention according to directions given in the bulletin on "Natural Swarming and How to Prevent It," by making sure that they have plenty of room and ventilation, and that the hives are shaded during the heat of the day.

If Mr. Inglis would leave his hives packed in winter cases all summer, it would help to keep down swarming and also assist them greatly in building comb in sections, as the protection would keep the supers from cooling off so much during the cool nights. The trouble with comb honey production where there are cool nights is that the supers cool off so that the hives have difficulty in working the wax.

New Brunswick Notes

OVER two hundred persons gathered one afternoon during July at the apiary of the Messrs. Peabody Bros., to see the demonstrations and hear the lectures on bee culture given by Mr. Morley Pettit, of the Agricultural College, Guelph, Ont. Beekeepers were there from many distant points, including points as far away as Honeydale and Knoxford (north of Centreville). The keenest of interest was shown and much benefit must result to those so fortunate as to be there.

At about 2.30, hives were opened by Mr. Pettit, and frames containing bees in all stages of development were passed through the audience for examination. Queens, drones, and workers were pointed out. Many were surprised to learn that bees might be allowed to crawl over the bare flesh with no danger of their stinging.

Those present were then asked to make themselves comfortable on the lawn. Mr. Durost, Provincial Apiarist, took up a discussion of the Apiary Inspection Act. This is an Act passed at the last session of the Legislature, the object of which is to prevent the introduction and spread of contagious bee diseases among the bees of the province. The speaker pointed out that the honey bee is subject, like other farm live stock, to contagious diseases. Fortunately, though surrounded by these diseases, this

province, so far as is known, is free from them. It should, therefore, be the aim of every person to keep these diseases out. This can only be done by refraining from having bees shipped into the province from outside points. There are plenty of bees within the province, and there is therefore absolutely no necessity or excuse for taking a chance on having a colony shipped in. Any person wanting a breed of bees not common in the province needs only to have a queen of that breed sent him by mail. There is little or no danger of introducing the diseases in this way if a few simple precautions are taken. A queen bee introduced into a colony of bees of any breed, will soon produce a colony which will be of a kind like unto herself.

The work of inspection for diseases will be carried on as rapidly as possible. It is advisable that any person having bees that seem not to be doing well should notify Mr. Durost at once.

Following the talk by Mr. Durost, Mr. Pettit explained the nature of the most important bee diseases and how they should be treated. He then went into a detailed discussion of the management and care of bees. He showed a model of an outdoor wintering case, which was of much interest to those who have an unsuitable place for indoor wintering. This method is used largely in Ontario—many who have fairly good conditions for indoor wintering preferring to winter out of doors.

After light refreshments, the crowd dispersed, to gather again in the evening at the Agricultural School, where Mr. Pettit entertained a large audience with an interesting illustrated lecture.

Mr. Durost wishes to thank all those who so kindly assisted with the arrangements and serving of refreshments. Also those who, by their presence, showed their appreciation of the efforts being made on behalf of the beekeeping industry in the province.

Meetings such as the above were also held at Fredericton and Bloomfield, King's County. These were equally successful, especially that at the apiary of Mr. L. T. Floyd, at Bloomfield. Over thirty beekeepers met there and thoroughly enjoyed the meeting, as well as the hospitality of Mr. and Mrs. Floyd.

Items of Interest

Bees are entitled to entry to Canada free of duty under the provisions of tariff item 3. This item is exempt from the added percentage as provided in the recent tariff resolutions. Honey is rated for duty under the provisions of tariff item 108 at the rate of 3 cents per pound when imported under the general tariff and in addition thereto 7½ per cent. ad valorem, in accordance with the tariff resolutions previously referred to.—Commissioner of Customs.

Two bulletins and a pamphlet, all by Morley Pettit, Provincial Apiarist, have recently been issued by the Ontario Department of Agriculture. Bulletin 213 (revised in May, 1915) is entitled "Bee Diseases in Ontario." Bulletin 233 is entitled "Natural Swarming and How to Prevent It." The pamphlet gives some results of co-operative experiments on races of bees to determine their power to resist European Foul Brood.

The only satisfactory kinds of hives are those fitted with movable frames to contain the combs. The Langstroth frame, 17½ long by 9½ inches deep, is the standard in all parts of Canada.—F. W. L. Sladen, C.E.F., Ottawa.

Nova Scotia Growers Review Their Year's Results

THE shareholders of The United Fruit Growers of Nova Scotia, Limited, held their annual meeting the last week in June. The following extracts are taken from the annual report of the Board of Management:

Your Board of Management have pleasure in submitting for your consideration their report covering the third year's operations of The United Fruit Companies of Nova Scotia, Limited. It was realized at the commencement of the year that unusual difficulties were to be encountered on account of the great crops reported from all sections. When a little later, Europe, our greatest market, was plunged into a fearful devastating war, those difficulties were increased tremendously, but your management were quick to understand and take advantage of the fact that these very difficulties but provided opportunities for Co-operative Centralization to accomplish useful work and to demonstrate to the world what could be accomplished by the united efforts of a community banded together for mutual assistance and protection.

In reviewing the results of the marketing operations of the many apple-producing countries of the Northern Hemisphere, it is evident that Nova Scotia has fared far better than any of her competitors. Without investigating and passing judgment publicly on the reason for the lack of success on the part of our competitors, which is, after all, their business rather than ours, we know that it was the inspiration of this organization that provided the courage for the Valley and prevented the greater portion of Nova Scotia's apple crop being sacrificed at ridiculous prices or left to rot on the ground.

Panic commenced early in the season to take hold of the fruit growers. So convinced were we that disaster would follow such panic that we felt it incumbent on us to issue a warning, which we did through the columns of the Co-operative News, early in September.

While we felt sure of all this, yet we knew also that advantage would be taken of war conditions to advance expenses and the cost of many necessities, and we prepared to meet any such attempts. Our purchases of feed and flour alone totalled \$108,561.16. This was turned over to the local companies at very little more than cost.

Through the work of your officials, having behind them the united support of the fruit growers of the Valley, the threatened increase in steamship rates was prevented from going into effect, thus saving the Valley about \$140,000.

While we have been much more fortunate than our competitors during the past season in the matter of transportation, yet we have had to a certain extent to work under difficulties and have had to make the best of what opportunities presented themselves to ship your apples.

Liverpool, which at many times was by far the best market for much of the fruit we had to handle, was absolutely inaccessible except for very small parcels. Therefore, our opportunities to regulate supplies to the best market were limited, but we did, during the season, withhold considerable quantities from markets which would otherwise have been overcrowded.

Yet in spite of these difficulties and restrictions, we have been able to so well place your fruit that we have paid to subsidiary companies for Numbers 1, 2 and 3 of 231 different varieties, a net average of \$1.67 per barrel, and in addition to this have been able to place to reserve fund a sum of \$7,500. Such a return for all grades must have given

our membership a splendid tree-run return.

In reckoning apples tree-run there are many matters that must be taken into consideration, the principal of which is that many co-operators do not bring in full barrels, their apples being often several inches down in the barrels. The manager of one of our largest companies has stated that it takes one barrel in eight to fill up slacks, so that the growers bringing in 100 barrels thus slack should only really reckon that they have brought in 87 barrels of apples.

The average prices on standard varieties was as follows:

	No. Bbls.	No. 1.	No. 2.	Co-op. No. 3.	No. 3.
Blenheims	6,451	\$1.54	\$1.30	\$1.00	\$.90
Baldwins	58,510	1.76	1.50	1.08	.90
Ben Davis	27,381	1.90	1.65	1.51	1.25
Bishop Pippins: 5,580		1.38	1.11	.89	.75
Fallawater	9,092	2.20	2.00	1.60	1.36
Gravenstein—					
1st ave.	9,860	1.80	1.41	1.50	.90
2nd ave.	55,714	1.16	.90	.67	
General	65,574	1.31	1.05	.75	
Golden Russet ..	20,232	2.70	2.51	1.80	1.78
Greenings	8,231	2.00	1.50	1.00	.90
Gano	1,040	1.80	1.62	1.15	1.02
Kings	32,197	2.04	1.75	1.30	1.02
Mann	3,400	1.33	1.25	.90	.75
Nonpareils	28,243	2.35	2.16	1.50	1.33
Pewaukee	2,422	1.70	1.38	.90	.90
Pomme Gris	1,363	2.35	2.04		1.60
Ribston	31,604	1.50	1.33	1.03	1.03
Red Russett ..	1,690	1.80	1.53	1.20	1.15
Stark	12,061	1.75	1.51	1.14	.90
Northern Spy ..	12,305	2.00	1.65	1.25	1.00
Seek	1,485	1.85	1.40	1.25	.85
Twenty Ounce ..	1,403	1.70	1.46	1.13	.90
Wagner	3,171	1.60	1.40	.90	.80
Wellington	1,184	1.82	1.40	1.20	

During the season your Central has handled 406,301 barrels of apples.

These have been disposed of as follows:—

London	155,813 barrels
Liverpool	83,704 "
Glasgow	25,087 "
Manchester	36,138 "
Newfoundland	7,912 "
Western Canada	22,351 "
Local Sales	41,836 "
Local Consigned	28,356 "
Boston	2,096 "
South Africa	1,008 "
South America	12,000 "

Out of this quantity there were 203,564 No. 1's; 94,910 No. 2's; 51,232 Co-op. No. 3's; 56,595 small No. 3's; and 231 Varieties.

The figures given represent a return far in excess of the average received for that portion of the fruit outside of the Co-operative Movement.

During the season your Central loaded apples and potatoes onto 138 boats. Of these, 19 were mail boats doing the trip in seven days; the others were boats many new to the apple trade. Our regular boats were early in the season requisitioned by the Government, but Messrs. Furness, Withy & Company looked after the trade in a most creditable manner, drawing on their almost inexhaustible supply of boats and maintaining a regular service to London throughout the season. Owing to the negotiations started by Messrs. MacMahon and Adams, when in Ottawa and subsequently carried on by your secretary, a subsidy of \$4,000.00 was procured from the Dominion Government in respect of the four transatlantic boats, this money representing \$4,000 of the amount being placed to reserve fund. These chartered boats made good trips and landed cargoes in excellent condition; they also performed a splendid service in providing

transportation to Liverpool and Glasgow at a time when only London boats were available, thus keeping 40,000 barrels off that Market.

We have handled, during the Season, 15,034 boxes. For some time to come we shall have to limit our box trade to certain varieties and certain markets. The time is far distant when any considerable quantities of our apples will be so packed.

The principal reason for this is the fact that boxing brings us into direct competition with the better colored and perfectly packed fruit of the West in which competition we suffer by comparison.

Throughout the season we adhered to the system inaugurated last year and have promptly, at the end of each month, mailed statements and cheques in settlement to all Companies covering all apples shipped during the month.

As soon as average prices have been ascertained, cheques have also been mailed in payment of balances.

It has been obvious for some time past to those closely connected with the management of subsidiary Companies that some method of financing that would enable substantial advances to be made to members on account of winter fruit stored in the warehouses would have to be devised. The fact that no funds were available for such purposes has been used frequently as a very telling argument against the Co-operative Movement.

To work out a scheme whereby such funds would be available, was entrusted to your secretary and we are pleased to be able to report to you that arrangements have now been concluded whereby a sum of about \$200,000 will be at your disposal for this purpose.

It has not been easy under existing financial conditions to negotiate this matter; it has been necessary for us to guarantee that these funds shall be used only for the purpose intended and no advance to any one company may exceed \$5,000. We feel that the facilities provided by this arrangement will be welcomed by all Companies and will do much to provide members with money at a time when funds are most urgently required.

Year's Turnover.

Although the season under review resulted in a short crop, thus considerably reducing the volume of business possible, your turnover was no less than \$1,130,770.55. This was compiled as follows:—

Apples	\$ 714,162.22
Potatoes	131,773.84
Feed and Flour	111,059.79
Fertilizer	102,316.64
Seeds	21,613.49
Spray Material	30,062.07
Merchandise	17,641.39
Insurance	2,141.11

\$1,130,770.55

The expenses incurred in running this business amounted to \$28,781.84 or 2.54 per cent. of your turnover. Applying \$3,000.00 of that sum to cover your supplies business and the balance to cover your apple and potato business, we find that the output of 406,301 barrels of apples and 64,405 barrels of potatoes, has been marketed at an expense per barrel of 5 1-2 cents.

These expenses were compiled as follows: Salaries—

S. B. Chute	\$3,000.00
A. E. Adams	1,500.00
J. N. Chute	1,500.00
F. M. Chute	1,000.00
A. E. MacMahon	1,200.00
R. N. Clark	600.00
Manning K. Ellis	500.00

T. H. Morse.....	300.00
C. O. Allen.....	1,000.00
Board of Management..	1,030.00
Office Salaries.....	2,280.00
	<hr/> \$13,910.50

Expenses—

Telegrams, Cables and Telephone	\$1,723.54
Advertising Account....	1,167.32
Board of Management..	159.90
Inspection	827.85
London Office.....	1,190.71
Halifax Office.....	745.68
South America.....	1,413.00
Western	647.00
Havana Office.....	1,769.80
Home Markets.....	575.75
Delegates and Directors	470.98
Co-operative News	375.28
General Expense.....	2,824.23
Interest and Discount...	980.40
	<hr/> \$14,871.44

\$28,781.94

This expense is somewhat in excess of our estimates and 1 1-2 cents higher than last year but is still exceptionally low compared with the expenses of any similar organization and is insignificant compared with the tremendous results accomplished.

Great Savings Effectuated.

Not only have great savings been effected for our membership by co-operative buying of feed and flour, fertilizers, spray materials, etc., but considerable reductions in the cost of handling of your fruit on the European market has also resulted. For instance, on a barrel of apples selling in Liverpool at 12s your organization saves 17 cents, compared with the independent shipper. Therefore, as we shipped 83,704 barrels to Liverpool and our average price equals about 12s per barrel, we soon estimate that the advantages enjoyed by this organization over competitors on that market has saved us no less than \$14,229.68.

In London, owing to lack of organization on the part of the trade, the savings are more difficult to arrive at, but for the purpose of giving you reliable data we have collected a large number of account sales of independent shippers and we find that, partly on account of the advanced charge added to bill of lading by agents, which varies from 7 to 10 cents, the difference in our favor in placing a barrel of apples on the London market varies from 15 cents a barrel in some cases to 22 1-2 cents per barrel in others.

We are safe, therefore, to reckon 17 cents in London as well as in Liverpool, in which case your organization has saved you \$26,488.21, your total English shipments thus effecting a net saving in charges, compared with the independent shipper of \$40,717.89.

What Has Been Saved.

In arriving at that conclusion, we have not taken advantage of the still greater saving effected on large parcels of fruit shipped direct from docks to wholesalers, thus saving cartage expenses and commissions. The savings effected in that direction, together with reduced cost of Marine Insurance and refund of Dock Dues, can be placed at another \$10,000, thus showing a net saving of \$50,000 on transportation and handling charges alone.

Keeping that in mind and also remembering the large savings on supplies already referred to and the more important work of scientific marketing and the protection this organization provides for the fruit industry, no reasonable person can criticize the cost of running.

Western Sales.

Our operations in the West were entrusted

again to Mr. T. H. Morse, who was successful in selling 22,351 barrels; of these, 13,211 barrels and 1,200 boxes were Gravensteins. Owing to the panic which seized the fruit growers of British Columbia and Ontario, the Western business was very difficult to handle. With the nearby Ontario growers ready to accept any price for their fruit, with British Columbia flooding the West with their crop all on consignment, it was a difficult proposition for any representative to sell Gravensteins at any price. Mr. Morse succeeded, however, in selling 29 cars at from \$1.90 to \$2.00 for No. 1's and No. 2's. After he had secured that business, he met another competition much harder to overcome, namely the competition from his own province. The unorganized growers selling their Gravensteins to speculators at \$1.00 to \$1.25, enabled these gentlemen to quote Gravensteins on the Western market at \$1.35 to \$1.40 per barrel.

Business was also opened up by Mr. Morse with the Grain Growers' Association, 50 carloads of various winter varieties being shipped.

Use Care in Handling Fruit

The fruit growers of British Columbia have petitioned the express companies, through the secretary of the British Columbia Fruit Growers' Association, to issue the following notice and cause it to be conspicuously posted on the inside of the sliding doors in all express cars in use during the shipments of soft and perishable fruit, and also on the inside of the sliding doors to express or warehouse rooms at stations:

Notice.

Express station agents and others handling extra perishable fruits, such as berries, tomatoes, plums and peaches, in

Douglas Gardens

OAKVILLE, ONT.

We have a surplus stock of some sorts of Irises growing in our Gardens. We offer this surplus, some 15,000 plants in 28 varieties at much reduced prices for all orders received in the month of August next—August is the best time for planting most Irises.

The following are examples of the reduction in prices taken from the special sale list which will be sent to all names on our mailing list and to others on application, viz:—

Mme. Chereau, each 10c, 10 for 75c, 100 \$6.00.

Purple King, each 15c, 10 for \$1.25.

Wyomissing, each 50c, 10 for \$4.50.

This list embraces such fine modern Irises as Juniata, King of Iris, Lohengrin, Mrs. G. Reuthe, Princess Victoria Louise, Rhein Nixe, Wallhalla, etc.

This sale applies to orders received in the month of August only. Normal prices will prevail after 31st August.

Send name and address for a copy of this Iris list and the Paeony list for 1915.

JOHN CAVERS



Cabbage Worms Destroyed by Dusting with Hammond's Slug Shot

So used for 30 years. SOLD BY ALL SEED DEALERS.

For pamphlets worth having, write

B. HAMMOND, Fishkill-on-Hudson, New York.

Where is that ladder?

EVERY home needs two ladders—one to reach the roof and the tree tops; the other for indoor use and for use with low trees or low branches. Yet more than 75% of Canadian homes have no ladder at all. It isn't the cost of a ladder, it is pure and simple neglect.

The "STRATFORD"

See the two illustrations.

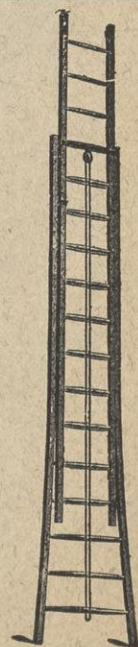
Note particularly the long extension ladder—locks at every rung automatically, and so is safe. Strong, yet light.

The step ladder is strongly made, is most serviceable, and the best ladder of the kind on the market.

Get these ladders from your hardware dealer. Say "The Stratford," please. Take no others. If he can't or won't supply "The Stratford" ladder write to us. Ask for our ladder catalogue E.

We are prepared to supply Co-operative Associations with their requirements in ladders.

THE STRATFORD MFG. CO.
STRATFORD, ONT.



YOUR OPPORTUNITY

to start in bees, make up winter losses, and increase your apiary cheaply by placing an order for a pound package of bees. Price, including a choice young Italian queen and full directions how to handle, \$2.50; six for \$13.00. Choice young Italian queens, each 75c, six \$4.00, 25 for \$15.00. Satisfaction guaranteed. Reference, DuBois National Bank, DuBois, Pa. **J. B. HOLLOPETER, Box 156, Pentz, Pa.**

LEININGER'S STRAIN OF ITALIANS

have a record of 30 years. Our experience in the queen-rearing business dates back over 30 years. They are excellent honey gatherers and gentle to handle. We will sell queens from this famous strain during July and August at the following prices: Tested queens (one year old), \$1.00 each; 6, \$5.00. Untested queens, 75c each; 6, \$4.50. Satisfaction guaranteed.

Fred Leininger & Son, Delphos, Ohio.

QUICK SHIPMENT OF QUEENS

of 3-band stock, reared for honey gathering qualities. Untested, June \$1.00, later 75c. Tested \$1.50, select tested \$2.00. Send your orders now and be assured of having queens when you want them.

R. A. Shults, Cosby, Tenn.

Beekeepers

Everything in the line of bee supplies. Weed process comb foundation, Bingham smokers, Porter bee escapes, improved model hives, etc.

Bees by the pound package. The best way to make increase. Hardy Canadian-bred Italian stock; sure to please. Full instructions for handling with each shipment.

Prices, including an untested Italian Queen:

	June.	July 1 to Sept. 15.
1-lb. package	\$3.50	\$2.50
2-lb. package	4.50	3.50
3-lb. package	5.50	4.50

Tested Queen included with above, 50c extra. Select tested, \$1.00 extra, or best breeding Queen, \$4.00 each extra. Best Italian Queens, untested \$1.00; tested Queens, \$1.50, and select tested, \$2.00 each. Usual discounts by dozen or more.

Write us if you have any Beeswax to offer. Catalogue upon application.

F. W. JONES, Bedford, Quebec

Northern Bred Italian Queens

Reported that they winter fine in Canada. Untested, 75c. Leaflet, "How to Introduce Queens," 15c. "How to Increase," 15c. Both, 25c.

E. E. MOTT, GLENWOOD, MICH.

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

BEEES FOR SALE

Italian Queens and Bees, lb., \$2.25; 5 lbs., \$10.50; 1-L Frame, \$2.00; 2 Fr. Nuc., \$3.00; all with Queens. Italian Queens, 75c each; 6 for \$4.00. Complete catalogue free.

THE DEROT TAYLOR CO.

BOX C - NEWARK, N.Y., U.S.A.

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.

THREE BAND ITALIAN QUEENS.

Gentle, good winterers and the best honey producing strain I have been able to find in over 20 years' experience.

Untested, \$1.00; 6, \$5.00; 12, \$9.00. Select Untested \$1.25; 6, \$6.50; 12, \$12.00. Tested, \$1.50—\$3.00.

No disease, a square deal. Money back if not able to fill orders soon, if so requested.

A. J. SEAVEY, R. F. D. No. 2, Farmington, Me.

UNTESTED ITALIAN QUEENS, 75c EACH.

Warranted purely mated, \$1.00 each, \$10.00 per dozen. Breeding queens, \$5.00 each. I guarantee you satisfaction.

JOHN A. MCKINNON

St. Eugene, Ont.

transit, are respectfully requested to observe the following rules:

1. Take firm hold on the package when shipping or moving it from place to place.

2. In handling, avoid tilting the package beyond 45 degrees from its horizontal position.

3. Never let go your firm grip on the package till it is gently placed in its place (a dropping jar to a crate of ripe, juicy strawberries, raspberries, peaches, or tomatoes, will easily knock 25 cents of value out of it).

4. Pile crate firmly in express cars or on trucks to avoid rocking motions. These motions on a long journey will reduce value of goods from one-half till worth less than express charges.

5. Always have in mind that the effects of damage to goods by unskilful, thoughtless handling never stops till part of it gravitates right back to you, and affects your economic progress, although you never thought of it.

6. All persons having interests in fruit of any kind, observing careless violation of the above rules, will confer a favor upon the company as well as the public by taking such notes as will enable the officials of the company to trace the violation to the guilty party.

All such notes should be addressed to the division superintendent respective of the place of occurrence, where records are kept and employees scored by their efficiency.

Increases Production

F. H. Johnson, Bridgetown, N. S.

My apples are packed and marketed through the Bridgetown Co-operative Company. My experience in co-operation has convinced me of the importance of the production of fruit of the best quality. An improvement in the quality of fruit produced invariably results from successful co-operation. The best methods of one grower soon become the common methods of all. The members of the co-operative society to which I belong meet frequently during the winter months. At these meetings methods of cultivation, of spraying, of picking and packing and of the general care of the orchard are discussed, and the methods that have proved most advantageous are brought to the attention of all.

Not the least of the many advantages of co-operation is the inspiration which the members get from each other in the encouragement to raise more and better fruit. One member sees the fruit grown by his fellow member to be so much superior to his own, or the packing room tally sheet shows him how many more number one apples his neighbor packs than he does. This naturally sets him to thinking that if his brother member can do so well there is surely a chance for him also. So he faces another fruit season with determination to raise better fruit than ever.

Webster defines co-operation as "the association of a number of individuals for their common benefit." The definition exactly describes the purpose and intent of a co-operative association of fruit growers. In these organizations individual fruit growers associate together for their common benefit—to enable themselves to raise better fruit, to have that fruit better packed, to handle it with greater economy, to find the best market, to obtain the highest prices. Co-operation among farmers and fruit growers is, to my mind, the natural result of increased intelligence and a more thorough education. The day of small things in the apple business is past and the prospect now is that in a very few years co-operative associations will control the export of the apple crop of Nova Scotia.

"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.

THE GOULDS MFG. CO.

Main Office and Works:

SENECA FALLS, N. Y.

Branches:

New York Atlanta Chicago

Houston Boston



IF GOOD QUEENS ARE WANTED

I have the goods. The pure three-banded Italians and the pure Carniolans, both races from imported mothers. Prices, untested, each 75c; dozen, \$8.00. Tested, \$1.25 each; dozen, \$12.00. Circular Free.

GRANT ANDERSON, SAN BENITO, TEXAS

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.

OUR ANNUAL EXHIBITION and FALL PACKING NUMBER

will be published September 1st. Send in your copy early. Forms close August 15th to 25th.

The Horticultural Publishing Co., Ltd., Peterboro, Ontario.

PRICE LIST

of
Three Banded Red Clover Italian Queens

Bred from Tested Stock. Untested Queens, \$1 each, \$5 for six.

Selected untested, \$1.25 each, \$7 for six.

Tested Selected Guaranteed Queens, \$2 each.

Cash With Order.

W. R. STIRLING

Box 214 Ridgetown, Ont.

**Berry Boxes, Baskets, Etc.**

The Arkona Basket Factory can supply you with the article that holds and helps to sell the fruit. Order now to secure prompt delivery from the old reliable,

THE ARKONA BASKET FACTORY
Samuel Rivers Arkona, Ont.

FRUIT BASKETS

Eleven-quart, 9-quart, 6-quart, 4-quart and Pony sizes, with or without leno covers. For favorable prices and a good article address

Gull River Lumber Co. Ltd.

Lindsay, Ontario

BASKETS

We supply hand-made fruit baskets, crates, etc. Well made, strong and guaranteed to give every satisfaction.

Let us quote you prices this season. Can supply any quantity.

Hewson & Farrell

Box 244, Grimsby, Ont.

ITALIAN QUEENS

3 banded, disease resisting, for Canadians to requeen with for August and September, 75c each, \$7.50 the dozen, 50 for \$30.00.

Had from the next largest queen-breeder in Tennessee.

CURD WALKER, Queen-Breeder,
Jellico, Tenn.

MILLER'S STRAIN ITALIAN QUEENS

By return mail or money refunded; bred from best red clover strains in United States, in full colonies, from my superior breeders; northern bred for business, long tongued, three-banded, gentle, winter well, hustlers. Not inclined to swarm; roll honey in. One untested, 75c; 1 select untested, \$1.00; 6 untested, \$4.00; 6 select untested, \$5.00; 12 untested, \$7.50; 12 select untested, \$9.00. A specialist of 18 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, Brockville, Pa. U.S.A.

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

CHAS. E. HOPPER & CO.

126 Simcoe St., TORONTO, ONT.

Leather Colored Italian Queens

Bred for Honey Production

Queens are reared from select mothers, record breakers, taken from our honey producing apiaries of over 1,000 colonies. We guarantee our queens to live as long and to give as good or better satisfaction than any of the so-called "Hardy, northern bred," high priced queens. We invite closest comparison with the best.

Untested queens, 60c each, \$6.00 per dozen. Warranted purely mated, 75c each, \$8.00 per dozen.

Tested queens, \$1.10 each, \$12.00 per dozen. Safe arrival and satisfaction guaranteed. No disease.

BROWN & BERRY, Hayneville, Ala.

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

"Reared in Canada"
from the best Italian stock



ONE DOLLAR EACH
Six for Five Dollars

P. TEMPLE

438 Gladstone Ave., TORONTO, ONT.

CARNIOLANS Only

Carniolans build up fast in the spring. Are very prolific, very gentle, cap honey very white, enter comb honey supers readily, gather almost no propolis, and are the best of honey gatherers.

Untested Queens, \$1 each, \$9 dozen; Tested Queens, \$1.50 each, \$12 dozen; 1 lb. package, with Queen, \$2.50.

Delivery after May 15, depending on the season somewhat.

ALBERT G. HANN

CLINTON, N.J. U.S.A.

QUALITY HILL QUEENS

"The Queens You'll Eventually Buy."

Quality Hill Queens are of a famous strain, greatly improved. All cells are built in 10-frame colonies, brimful of bees and during a continuous honeyflow. For hardiness, gentleness, and honey-gathering qualities they are better than most. Four-frame nuclei used for mating. Many report them very resistant to European Foul Brood. No disease. Italian.

Our Guarantee.—All queens will reach you alive, in good condition, purely mated, and will give satisfaction. Queens which prove to be injured in the mails will be replaced if returned. Reference: Plainfield, Ill., State Bank.

Queens	1	6	12	1	6	12	
Untested	.80	\$4.00	\$7.50	Tested	\$1.50	\$8.00	\$15.00
Select Untested	\$1.00	\$5.00	\$9.00	Sel. Tested	\$2.50	\$10.00	\$18.00

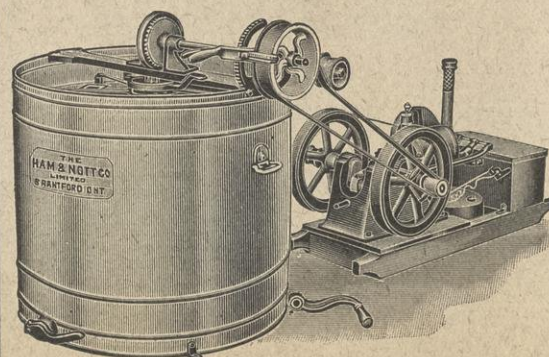
Breeders \$4.00 and up.

KENNITH E. HAWKINS

Plainfield,

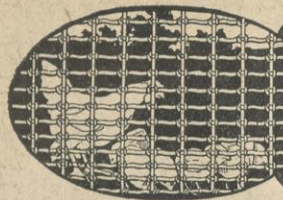
Box 366.

Illinois.

**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.



PEERLESS POULTRY FENCE

A Real Fence—Not Netting

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

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



The Beekeepers' Review

The Beekeepers' Review is now just beginning to publish those valuable papers read at the National Beekeepers' Convention at Denver last February. If you were to begin your subscription with the May number none would be missed. We will be pleased to receive your subscription for the last eight months of the year for an even 50c, post-paid to Canadian subscribers. In remitting, say begin with the May number, so as to miss none of those valuable papers. Those papers are only a part of the valuable material we have on hand that will appear during this year, so we are very sure you will receive your money's worth by subscribing for the Review at this time. The Review is Owned and Published by the Honey Producers Themselves, consequently is published wholly to our interest. Kindly remit by postal note, not stamps, as we cannot use Canadian stamps. Address, with remittance, The Beekeepers' Review, Northstar, Mich.

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.

The United Fruit Growers.

That The United Fruit Companies of Nova Scotia, Ltd., are steadily increasing in strength and influence was shown at the Third Annual Convention of The Company held about the first of July. In spite of the war conditions that prevailed last fall and winter, the company had a successful year, and proved the salvation of the fruit industry in the Annapolis Valley.

The report of the board of managers was presented by Secretary A. E. Adams. It went into the affairs of the company exhaustively. A considerable extract from it is printed on Page 196 of this issue. President Donaldson gave an excellent address, reviewing the work of the company, its prospects and trade conditions. A noticeable feature of the Convention was the increased familiarity of the delegates present from the locals with the general business of the company, and their confidence in its future, and the co-operative principle upon which it is being conducted. The growth of the movement is educating our growers in the principles involved, and developing new leaders, in whose hands the future success of the enterprise seems assured.

Officers Elected.

The following officers were elected: President, John Donaldson; Vice-President, F. W. Bishop; Secretary, A. E. Adams; Board of Management, A. E. MacMahon, F. W. Bishop, T. L. Harvey, F. H. Johnson. The only new member of the board is Mr. Harvey. Directors were also elected for each of the local Companies. There was only one nominee for each of the offices of president, vice-president and secretary, all three being elected by acclamation.

Apples for England

We solicit your
Consignments

Write For Particulars
Early

Highest References
Given

W. S. BUCKOLL

Fruit Importer and Merchant

NOTTINGHAM, ENGLAND

Telegraphic Address, Buckoll, Nottingham

For the Land's Sake

Use the best Manure
and get

GOOD CROPS

For Nurseries, Fruit Growers
and Gardeners.

Sure Growth Compost

(A Composition of all Natural Manures)

Makes poor land fertile and keeps fertile
land most productive.

Supplied by

S. W. Marchment

133 Victoria St., TORONTO

Telephones: Main 2841; Residence, Park 951

Say you saw this ad. in The Canadian Horticulturist

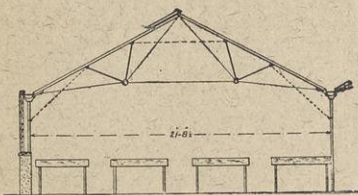
Marketing Immature Fruit

P. J. Carey, Dom. Fruit Branch, Toronto, Ont.

There is one great evil in connection with the marketing of our fruit that perhaps has not been given as much attention as it deserves. There seems to be a wild desire on the part of some of our growers to reach the market with their fruit ahead of all the other growers. As a consequence, all through the season, beginning with the strawberry and ending with the grape, we find immature fruit rushed on the market at a stage of ripeness when it is absolutely useless for food. Plums and apples reached the Toronto market this year as early as July 15th, and, needless to say, were given little attention, unless in the way of criticism.

A great mistake has been made by some of our apple growers in shipping to the West cars of boxed apples of well-known "red varieties" at a stage when fully fifty per cent. of the fruit showed little or no color for the variety. The dealers in the West may be to blame for demanding that the fruit must be there at a certain date, but the growers are the ones to suffer when such fruit is put in competition with the attractive, well finished article from the West. It is better for us to remain off the market until our fruit is at least reasonably mature, for the reason that those who purchase and use an inferior article in any variety of fruit are not too ready to buy the same variety when it is at its best, or at least will have a lasting prejudice against it.

In the shipment of grapes, the practice is perhaps most prevalent, and no doubt close attention will be given shipments this season. Our best growers cannot be accused of this practice, but suffer to some extent from it. In these days of close competition, our only chance is in the superiority of our fruit. It is difficult to establish a name for any of our many varieties by placing immature fruit on the market.



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.

You can get Lantic Sugar in 10, 20 and 100 lb. full weight Bags

If you always buy Sugar for Preserving and for the regular home uses, in bags, your dealer has—or can easily get—LANTIC SUGAR in 10, 20 and 100 pound bags. Either coarse or fine granulated can be had in the 100 pound bags.

Lantic Sugar is the new cane sugar with the fine even granulation and brilliant sparkle. Try it for all your preserving. You are sure to be delighted with the results.

FRUIT JAR LABELS FREE

Send your address and small Red Ball Trade-mark from bag or top end of carton and we will mail you book of 50 assorted Fruit Jar Labels—printed and gummed, ready to put on the jars.



Also put up in 2 and 5 pound sealed cartons.

Atlantic Sugar Refineries Limited
Montreal St. John

REMEMBER—Our Annual Exhibition and Fall Packing Number will be published September 1st. Reserve space now for good position. Forms close August 15th to 25th.



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

Send for
Shipping Stamp

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



MASSEY-HARRIS CO. LIMITED

Fall Bulletin - - August 1, 1915

Spray Outfits

GREAT care should be exercised in the selection of a sprayer. Proper design and construction, combined with simplicity, makes the Massey-Harris sprayer a leader in efficiency.

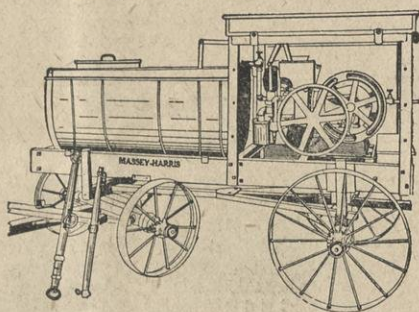
The Pump is double cylinder, with two bronze plungers, direct-connected to the back gear-plate of the engine without chains, bolts or gears.

The Tank is specially built of 11¼-inch selected Cypress.

The Agitator is positive in its action,

and is operated from the top—no holes through the side to cause leakage.

Connection—There is a simple direct connection between engine and pump—no sprocket chains to get caught in branches.



The Cab—Protects all working parts and forms a good platform.

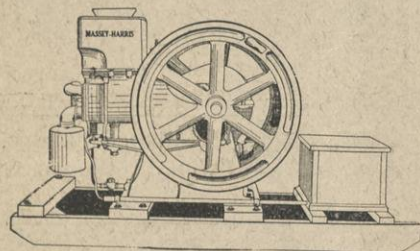
Pressure Gage—The Massey-Harris

gage is absolutely accurate and reliable, and will register up to 250 pounds.

The Engine is Described Below.

Gasoline Engines

THE Massey-Harris engines are ideal for spraying and general farm work, as they can be depended upon in all kinds of weather



and in any position, such as when working on steep hillsides. Their high efficiency, coupled with their economy of operation and durability,

combine to make them the most reliable and satisfactory on the market to-day.

Hopper cooled with exceptionally large water space.

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

Valves are in removable cages—either can be taken out by removing two screws.

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

1½ to 20 horse power—stationary, portable, semi-portable.

MASSEY-HARRIS CO., Limited

Head Office—TORONTO, CANADA

—BRANCHES AT—

MONTREAL, MONCTON, WINNIPEG, REGINA, SASKATOON, YORKTON,
SWIFT CURRENT, CALGARY, EDMONTON.

—AGENCIES EVERYWHERE—

The Lord & Burnham Co.

About two years ago, the LORD & BURNHAM COMPANY of New York decided to open an office in Canada. There were several reasons for this:

Canada was expanding rapidly in all directions and as a natural result of her prosperity, as in the United States, the prosperous business man and florists began to want the best Greenhouse that could be built. This led Canadians to place their orders with the LORD & BURNHAM COMPANY, who for over fifty years have been the foremost Greenhouse Builders in the world.

The LORD & BURNHAM COMPANY have found that better and quicker service could be given to their customers by the establishment of a number of Sales Offices, situated at convenient points. Following out this policy, an office was opened in Toronto. The success attending the opening of this office, led the Company to organize a Company under the laws of Canada, and they immediately began to look for a site for building a factory.

The Company were anxious to manufacture in Canada for the following reasons:

FIRST: Because they could sell their goods at a lower price.

SECONDLY: They could give quicker and better service by so doing.

THIRDLY: They wanted to be identified with Canada and be a Canadian Company as far as possible.

To this end, they put their Canadian business in the hands of a Canadian, Mr. David Warwick, who was born and brought up in Toronto. Mr. Warwick has had over fifteen years experience in the Greenhouse business, and most of that time has been connected with the Lord & Burnham Companies of New York and Illinois.

When the Company erected a factory near Chicago, Mr. Warwick was put in charge, and has seen the business grow so that the factory had to be doubled in size.

After visiting and investigating over twenty cities and towns, St. Catharines was finally selected as the place to build a factory. St. Catharines offered better facilities as to sewers, water power, homes for workmen, railroad facilities, etc., than many other places. Also it had the advantage of being in the Buffalo freight rate zone—a very important, economical consideration. Then too, the various other manufacturing concerns already located there, gave the city a strong, all around recommendation.

After the site of some sixteen acres was purchased, steps were immediately taken to start work on a factory. About one year ago, building operations were commenced and to-day the machines are running swiftly, turning out the material for over fifteen greenhouses already contracted for.

The factory is pronounced the best built factory in Canada. It is strictly fireproof; all on one level, one story high. The framework of the building is steel, with brick walls. The walls are simply to keep the weather out, as in no case do the walls support the framework. The buildings are what is known as saw-tooth style. The north slips are of all glass, which makes every foot of floor space as light as possible. A machine can be placed at any point and work carried on at one point as well as at another.

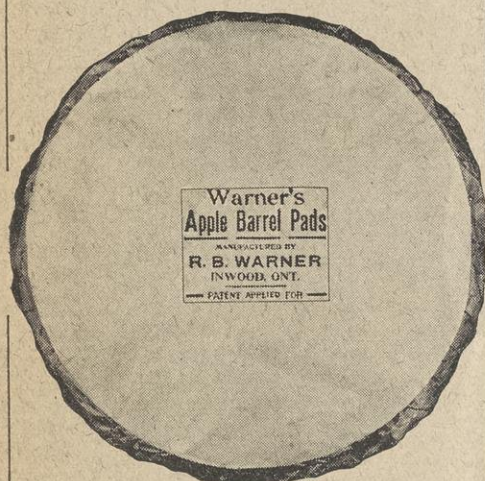
A branch of the Grand Trunk Railway enters the property, and on the property two tracks are laid; one on the north side for incoming freight and one on the south side for outgoing shipments. The Welland Canal almost touches one end of their property, and taking it all in all the site is an ideal one for manufacturing purposes.

The parent Company in the United States has been established for over fifty years and

TRADE MARK
REGISTERED**Wilkinson Climax B****Ensilage and
Straw Cutter**

Our "B" machine, built especially for the farmer. A combination machine—it will cut and deliver green corn into the highest silo or dry straw or hay into the mow. 12-inch throat, rolls raise 6 inches and set close to knives—solid, compact cutting surface. Can change cut without stopping. Can be reversed instantly. Direct pneumatic delivery. Knife wheel carries fans. No lodging, everything cut, wheel always in balance. Steel fan case.

Made in two styles—mounted or unmounted. We also make larger type machine for custom work. Ask your dealer about this well-known machine and write us for new catalog showing all styles.

THE BATEMAN-WILKINSON CO., LIMITED468 Campbell Ave.
Toronto, Canada**Protect Your Fruit**

BY USING

**WARNER'S
APPLE BARREL PADS**

A pad 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.

R. B. Warner, Inwood, Ont.We have a large
stock of all size**FLOWER POTS****FERN OR BULB PANS****¾ AZALEA POTS
and Rimless Pans**

Orders Filled Promptly. Send for Prices.

THE FOSTER POTTERY CO., Ltd.
HAMILTON, ONT.**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 201.

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: London County and Westminster Bank, Southwark Branch.
Established 1880.

JOHN ROBINSON

Fruit Importer and Salesman,

3 Rochester St. Borough Market,

London, Eng.

Telegraphic address: "Redsoil, London."

Telephone: No. 32 Hop. A.B.C. Codes.

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

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.

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.

David L. Dick, Manager

27 CHURCH ST. : TORONTO, ONT.

Representing

Simons, Shuttleworth & Co.

Liverpool and Manchester.

Simons, Jacobs & Co. Garcia, Jacobs & Co.

Glasgow, Scotland London, England.

Receivers of Apples and Pears.

The Oldest
Commission House
in Toronto

McWILLIAMS & EVERISTSend your
Consignments.**FRED BARKER**

25 Church St., Toronto, Ont.

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

APPLE RECEIVERS.

Consignments Solicited.

HYSLOP & SONS

132 Princess Street : Winnipeg, Man.

Fruit Growers and Shippers

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

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

GILSON Johnny-on-the-Spot

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

1 1/2 H. P. Gasoline Engine. Shid or truck. Sizes up to 15 H.P.

**WESTERN FAIR**

London's Popular Exhibition

September 10th --18th**Fruit and Flowers a Prominent
Part of this Great Exhibition**

\$30,000.00 in prizes and attractions. Special programme twice daily. Fireworks every night. New Steel Grand Stand. Single fare over all railways west of Toronto. Prize lists, entry forms, and all information from the Secretary.

EVERYBODY COME**W. J. REID, PRESIDENT.****A. M. HUNT, SECRETARY.**

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.

Canadian Ginseng

Pure Canadian Ginseng stock for sale. Order early for October planting. Booklet free.

HURONIA GINSENG GARDEN
BOX 341 BLYTH, ONT

GINSENG FOR SALE

Two and three-year-old roots. Live, vigorous stock for fall planting.

WM. GILGOUR

785 George Street, Peterboro, Ontario

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 Seed and Roots For Sale

One and two-year-old roots. Year-old or germinated seed. This seed is taken from matured six and seven-year-old stock. Roots and seed delivered in October. Write for prices.

Orr & Nichols, Mono Mills, Ont.

GINSENG

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

N. J. MACINNES, M. D.

Victoria, Norfolk Co., Ont.

Ginseng For Sale

3,000 two years old, \$18.00 per 1,000. Unlimited quantity one year old, \$9.00 per 1,000. Instructions for planting if required. 20 per cent. with order, balance before shipping.

John Zuefle's Ginseng Gardens,
Hensall, Ontario.

during that time has devoted itself exclusively to the manufacture of Greenhouse Material and Equipment. This Company is in a position to furnish all material and erect Greenhouses, Conservatories, Hot Beds, Cold Frames, Hot Water Heating Apparatus, Steam Heating Apparatus. Everything that is used in the construction of a greenhouse is manufactured by the Company, also fittings, valves and boilers for the heating apparatus. In fact, it is the Com-

pany's policy to manufacture everything possible under its own roof, as by so doing uniformity and excellency are obtained.

The Sales Department is under the management of a sturdy Scotchman, Mr. C. C. McDermott, who has had the advantage of a good schooling with the Lord & Burnham Company in the United States.

This Company has already erected the largest Rose Houses in Canada, as well as numerous houses for the growing of vegetables, carnations, etc., for florists and vegetable growers. It has erected Greenhouses, Rose Houses, Palm Houses, Carnation Houses, etc., on some of the finest private estates in Canada.

The Company looks forward to a long and prosperous career in Canada and it will be their aim in the future, as it has been in the past, to build the best greenhouse that it is possible to build.

DIGGERS

for potatoes. All growers know that it pays to use diggers even on five acres—they save valuable time, save all the crop in good condition, at less expense.

IRON AGE DIGGERS

Wheels 32 or 28 ins. Elevator, 22 or 20 ins. wide. Thorough separation without injury to the crop. Best two wheel fore truck. Right adjustment of plow, shifts in gear from the seat. Can be backed, turns short into next row. We guarantee our diggers to do the work claimed for them. Ask your dealer about them and write for booklet.

The Bateman-Wilkinson Company, Limited
460 Symington Ave., Tor., Can.


**MERRYWEATHER'S
ROSES**

are noted throughout the world

They are Cheap; they are True to Name; the Trees are Strong and Sturdy. They defy Competition.

**ALL THE
NEWEST VARIETIES**

Dwarfs, Standards, Climbers, also Fruit Trees, Shrubs, Ornamental Trees

Send for Catalogue, Post Free

Henry Merryweather & Sons

Limited

SOUTHWELL, NOTTS., ENG.

The Single Tax

Editor of The Canadian Horticulturist: I would like to congratulate you on having a special fruit edition. This feature should prove very satisfactory to fruit men. The matter of public markets will, I think, bear some airing. This brings to mind that I have several times noted your remarks on the excessive charges of retailers and the fix they are in from high rents or land values. You seem to offer only single tax as a solution. I do not pretend to be a judge on the correctness of this. I'm no authority on single tax. I have this to say though, that considering the slow rate of progress of the single tax idea, if the fruit grower has to wait till the public is educated to elect single tax members to enact single tax laws, to give single tax a trial whether it will better his lot—why he has a long wait ahead. Other productions seem to be handled through present channels of trade, and sold through retail stores and living, but not excessive, prices obtained. I know that fruit is a particularly perishable line of goods and there must necessarily be more margin between the price the producer gets and what the consumer pays than in some more easily handled lines, and probably the buyer of fruit has a duty to perform in patronizing co-operative effort, public markets, etc., in order to do away as much as possible with a superfluity of middlemen.

Just think it over and see whether, if you were a fruit grower, or a buyer merely, you would see much to cheer you in having to wait till the single tax idea gained ascendancy, when your position might be benefited. I say might because everyone is not evidently of the opinion that shifting a large portion of taxes on to land values is a sure

WHITE & CO., Ltd.

Church & Front Streets
TORONTO, ONT.

AUGUST
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.**

Landscape Gardening



A course for Gardeners, Florists and Home-makers, taught by Prof. Beal, of Cornell University.

Progressive Florists recognize the growing importance of a knowledge of Landscape art.

We also offer a practical course in Floriculture, including Greenhouse Construction and Management.

Send for Catalogue. Address

THE HOME CORRESPONDENCE SCHOOL
DEPT. C.F. - SPRINGFIELD, MASS.

FRUIT MACHINERY CO.

INGERSOLL, ONT.

Manufacturers of Fruit Sprayers
and a complete line of

Apple Evaporating Machinery

Our complete POWER SYSTEMS for evaporating, when installed by our experienced millwrights are the most practical, sanitary and labor saving to be found anywhere. Our prices and terms always reasonable.

Write for Illustrated Catalogue.

FREE LAND

For the SETTLER in

NEW ONTARIO

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

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

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

H. A. Macdonell

Director of Colonization

Parliament Buildings, TORONTO

HON. JAS. S. DUFF,

Minister of Agriculture
Parliament Bldgs., Toronto

OUR

ANNUAL EXHIBITION

and

FALL PACKING NUMBER

Will be Published

SEPTEMBER 1st.

This is the most important and largest of our fall issues, and is published right at the time when fruit growers are preparing for their fall and winter work—thus buying fall supplies.

Can you think of a better opportunity of showing your products to thousands of these progressive fruit growers?

Plan to have your message in it. Forms close August 15th to the 25th.

The Canadian Horticulturist
Peterboro, Ontario.

Things to Plant in September

RENNIE'S SEEDS
FOR CANADA



Hyacinths, all colors, per doz. 40c., 55c., 65c., and \$1.00. If required by mail add 20c. per doz.

Single and Double Tulips, all colors, per doz. 15c., 20c., 25c., and 40c. If required by mail add 15c. per doz.

Narcissus and Daffodils, all shades, per doz. 25c., 40c., and 60c. If required by mail add 15c. to 20c. per doz.

Our Autumn Bulb Catalogue contains a list of bulbs suitable for all purposes, and will be mailed on request.

Wm. Rennie Co., Limited, Head Office and Warehouse: Adelaide and Jarvis Sts., Toronto

BRANCHES:

190 McGill St., Montreal, Que.

394 Portage Ave., Winnipeg, Man.

1138 Homer St., Vancouver, B.C.

SANDER & SONS ST. ALBANS, ENGLAND

ORCHID GROWERS. The Finest

Stock in the World

Catalogue on Application

SKINNER THE RAIN SYSTEM MACHINE

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

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

Kelway & Son

SEED GROWERS and
NURSEYMEN
LANGPORT, ENGLAND

Announce that their Mr. H. A. NALDRETT will be in Canada during the month of September and invite correspondence for appointments. Please write him "Care of

Messrs. T. Meadows & Co.

8-10 Bridge Street, Battery Park, New York City, U.S.A.

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

Wilkinson Plows

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
Symington Avenue, Toronto Canada



Repairs
for all
Wilkinson
Plows

Canadian National Exhibition

"PATRIOTIC

March of
the Allies

Aug. 28 to Sept. 13

Review of
the Navy

YEAR"

Mammoth Fireworks Display, War Trophies, captured from the Germans, Bigger, Better, Grand Stand Performance, New Midway Attractions, Model Farm under Cultivation, Canada at a Glance.

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

ITALIAN BEES AND QUEENS as advertised on page 198. Catalogue free. Deroy Taylor Co., Newark, N.Y.

FOR SALE—Three banded Italian queens, from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75c.; 6, \$4.25; 12, \$8.00. Tested queens, \$1.25; 6, \$7.00; 12, \$13.00. Selected queens, add 25 cts. each to above prices. Breeding queens \$3.00 to \$5.00 each. For queens in larger quantities, write for prices and circulars. Robert B. Spicer, Wharton, N. J.

ITALIAN QUEENS—For sale at 60c each, \$7.00 per dozen. Safe arrival guaranteed. T. J. Talley, R.R. No. 3, Greenville, Ala.

QUEENS BY RETURN MAIL—Three-band Italians only, which have been bred to a high standard of excellence, to which leading beekeepers in Canada can testify. Tested queens, \$1.00 each; untested, 75c; \$7.00 per dozen. No disease, and satisfaction guaranteed. J. W. K. Shaw & Co., Loreauville, La., U.S.A.

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.

MOORE'S STRAIN AND GOLDEN ITALIAN QUEENS, untested, \$1.00; 6, \$4.50; 12, \$8.00; 50, \$32; 100, \$60. Carniolan Caucasian, untested, \$1.25; 6, \$5.00; 12, \$9.00. Tested, any kind, \$1.25; 6, \$7.00; 12, \$12.00. Choice breeding queens of any kind, \$5.00 each. Circular free. W. H. Rails, Orange, California.

GOLDEN AND 3-BAND ITALIAN, also Carniolan queens. Tested, each, \$1.00; 3 to 6, 95c; 6 or more, 85c. Untested, 75c; 3 to 6, 70c; 6 or more, 65c. Bees, per pound, \$1.50. Nuclei, per frame, \$1.50. C. B. Bankston, Buffalo, Leon Co., Texas.

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.

ITALIAN BEES AND QUEENS, reared for Canadians. Hardy, winter well. Send for circular. Standard bee hives shipped direct from factory in Iowa at \$1.20 each. Stover Apiaries, Mayhew, Miss.

FOR SALE—80 colonies Italian bees; a choice outfit; free from disease. J. Alpaugh, 46 Cherry St., Stratford, Ont.

QUEENS OF QUALITY.—Three-band Italians. First-class untested queens, remainder of season, 60c each, \$7.00 per dozen. Satisfaction guaranteed. J. I. Banks, Dowelltown, Tenn.

SEEDS AND PLANTS

WOULD LIKE TO EXCHANGE mushroom spawn for bedding stock or cuttings, plants or bulbs. Canadian Mushroom Growers, Limited, Lindsay, Ont.

MISCELLANEOUS

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

PACKER'S "SAFETY" FRUIT WRAPPER PAPER

Recommended by Government Inspectors. Used with perfect results by largest growers.

This paper is specially made to wrap fruit.

The rough side in against the fruit protects it. The smooth side out excludes moisture.

It is strong enough to handle without breaking, yet its soft texture permits folding the paper close to the fruit better than with harsher papers.

In stock—

8x9—10c.	per ream	500 sheets.
10x10—11c.	"	"
12x12—15c.	"	"
18x24—45c.	"	"
20x30—60c.	"	"
24x36—80c.	"	"
30x40—\$1.10	"	"

Also in stock—

Lace box tops, 11x20, per 1,000, \$10.00.
Lace barrel tops per 1,000, \$10.00.
Lace paper, white and colored, 12 pieces, 10 yards each to box, 40c.
Corrugated box tops, 11x20, per 1,000, \$8.50.
Corrugated barrel tops, per 1,000, \$12.
White pulp board, barrel tops, per 1,000, \$7.00.
White pulp board layer boards, 11x20, per 1,000, \$4.00.
Box Lining, cut to any size, from white or colored paper. Also wrapping papers, twines, manilla tissues.

Buntin, Gillies & Co.
LIMITED
HAMILTON, - CANADA

cure for "the thousand natural shocks that flesh is heir to."

Armstrong, B.C. CHARLES WEBSTER.

A Western Fruit Conference

An important conference of representatives of the fruit growing interests of British Columbia and of the consumers of the prairie provinces, more particularly the province of Alberta, was held in Calgary July 7th-9th. The Conference was held on the invitation of the Calgary Board of Trade. Invitations to attend were sent to British Columbia fruit growers and shippers, representatives of freight and express companies, prairie retailers, wholesalers and consumers. The British Columbia Department of Agriculture gave its assistance. The object of the conference was to find methods of so improving the handling of fruit that better results might be obtained, not only by the producers, but by the consumers as well.

The British Columbia fruit growers made a strong claim for greater protection against fruit shipped in from the United States. They claimed that there has been over-production in the Pacific Coast States, and that the surplus is being dumped on the Canadian market, the anti-dumping clause not applying to fruit, with the result that the fruit growing industry in British Columbia has become more or less demoralized. It was stated that some of the fruit growers of British Columbia did not have enough money to buy a ticket to the conference, or they would have been present.

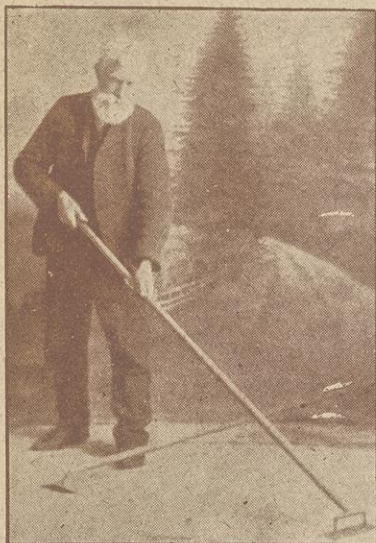
The plea for greater protection was opposed by representatives of the consumers, including Mr. Musselman, of the Saskatchewan Grain Growers' Association, Mrs. T. D. Newhall, who spoke for the Consumers' League, and by representatives of the commission firms. It was claimed that an increase in the duty would antagonise 90% of the consumers in the prairie provinces. The matter was finally disposed of by the adoption of a resolution asking the Dominion Government to appoint a special commission of enquiry into the state of the fruit trade. It was anticipated that such a commission would enquire into the necessity of a revision of the tariff.

A resolution offered by W. G. Hunt, that representations be made to express companies to reduce their minimum rate on cars for small fruits from 20,000 to 15,000 lbs., or else provide cars capable of carrying 20,000 lbs. with safety, was adopted, after considerable discussion. The fruit growers seemed to think that express rates, with some minor exceptions, were fairly reasonable.

The following resolutions were adopted: "Resolved, that this conference petition the Dominion Express Company requesting them to obtain joint rates with the Canadian Northern Express Company and the Canadian Express Company on the basis of the present tariff, applicable to fruit shipments from all points in B. C. to all prairie points.

"It is further resolved that this conference do make application for a reduction in carload lots of fruit shipped from British Columbia to all jobbing points in Alberta to \$1.75 per 100 pounds."

Other resolutions adopted favored each British Columbia fruit district having a special representative at each marketing centre to see that the market is maintained in a normal condition, and to govern the distribution of fruit; favoring the packing of only one grade of the best variety of apple, all others to be put up orchard run, culls cut out, in slatted boxes, and one asking the government to establish a minimum number of standard packages for small fruit.



The Hand Scuffler In Use.

The hand scuffler is 9 inches by 3¼ inches; in the small one 6 inches by 2¾ inches. The handle is about five or six feet in length.

Special Premium Offer

One hand scuffler FREE (as above) with each single subscription to The Canadian Horticulturist at \$1.00. Will also sell these (express extra) direct to subscribers at 50c. for the small and 75c. for the large size.

The Horticultural Publishing Co., Limited
Peterboro, Ontario

Do You Want a Handy Hand SCUFFLER

THE handy hand scuffler is an ideal implement for garden weeding, and mulching. It is made of the best saw steel, and has three cutting edges, on two sides and one end. Lying flat on the ground, a slight pressure either in pushing or pulling only is required. It can be used endwise to chop tough roots. It is especially adapted for cleaning around bushes and plants.

Made in two sizes. The blade on the large scuffler is 9 inches by 3¼ inches; in the small one 6 inches by 2¾ inches. The handle is about five or six feet in length.

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.

Trenton Cooperage Mills
TRENTON LIMITED - ONTARIO



"DAISY" Aids for Apple Packers

The illustrations on this page will tell you instantly just how useful and time-saving are these "Daisy" aids. You can get better results in less time by the use of these "Daisy" helps than is possible in the usual way. Read carefully the descriptions of each device:

"Daisy" Folding Apple-Sorting Table

This is another of the famous "Daisy" Apple Packer's Outfits. It is light yet strongly built to meet rough usage. It folds compactly and can be readily carried from place to place in the orchard. It is thoroughly tested for strength and efficiency.

The table frame is of oak and all metal parts are of first-class, malleable, thus being interchangeable in case of breakage. The cover is of No. 10 canvas.



An article every packer should have this season.
QUICK AND EASY.



"Daisy" Apple Press

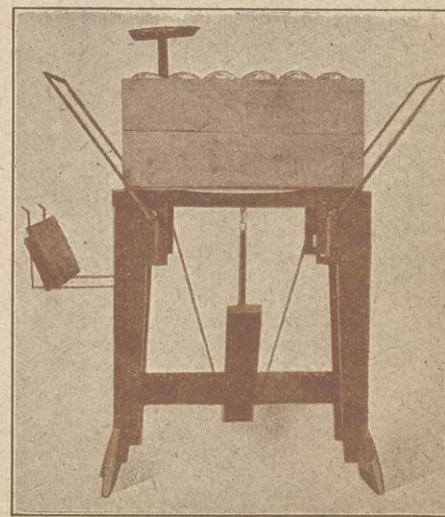
Used by all leading apple packers in Canada, United States and England.

All fruit growers' supplies carried. Ladders, baskets, felt pads, racks, etc. Write for prices and complete information. Special quotations to associations.

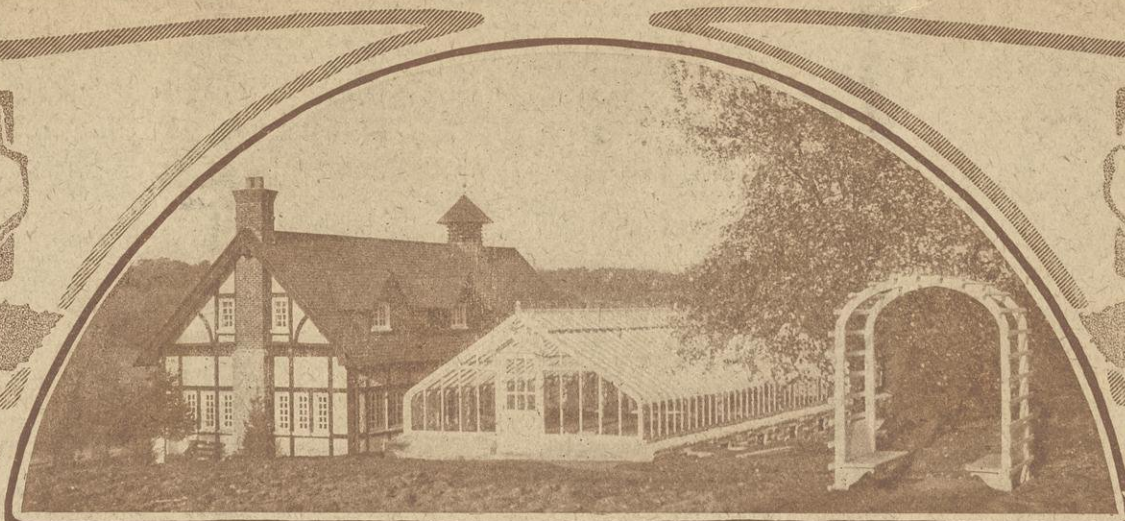
"Daisy" Apple Box Press

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

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



J. J. Roblin & Son BRIGHTON,
ONTARIO.



If You Are Thinking of Building a Greenhouse

WHEN a greenhouse is rightly located, correctly built, properly heated and consistently ventilated; they are quite the most enjoyable of possessions.

When otherwise, it's doubtful if there is anything you can put your money in, that will cause you more vexatious disappointments. They might be compared with a car that won't crank.

The thinking of, as well as the building of a greenhouse done the way we would do it for you, becomes a pleasure. We entirely relieve you of every detail of the work.

You buy a greenhouse from us for so much. That so much, will, if you wish, include everything from the turning of the sod, to the turning on of the heat in your complete glass garden.

We can even supply you with a gardener to run it.

We have been building greenhouses for over half a century. Logically we know how they should be built. Very naturally we want to build yours. Can't we arrange to talk it over together? You are, of course, welcome to our Booklet—Glass Gardens, A Peep Into Their Delights.



Lord & Burnham Co. *Limited of Canada*

Greenhouse Designers and Manufacturers

TORONTO

ROYAL BANK BUILDING

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