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BEEKEEPER

VOLUME 37. No. 11
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NOVEMBER, 1914

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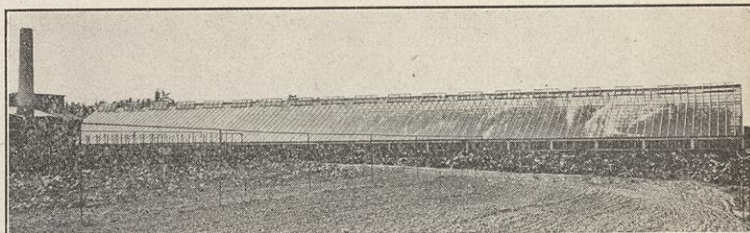
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The Canadian Horticulturist

Regular Edition

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The Canadian Horticulturist

Vol. XXXVII

NOVEMBER, 1914

No. 11

Choosing Varieties of Apples for British Columbia*

R. M. Winslow, Victoria, B. C., Provincial Horticulturist, for British Columbia.

THE commercial apple industry of British Columbia is a development of the last decade. The census of 1890 showed about six thousand acres of fruit in the province, and the census of 1900 showed an increase to only eight thousand acres. At the time of the 1910 census, however, the acreage had increased to thirty-three thousand six hundred and six, and the Provincial Government's Agricultural Survey of 1913 showed this further increased to thirty-eight thousand one hundred and ninety-six acres. The development was, therefore, a rapid one, following a period of inertia. The new development is largely in the interior. In 1900, interior districts had only about one thousand acres and now have thirty thousand acres; while in the coast sections, in the same period, the acreage has increased only about one thousand acres. In fact, the seat of the industry was almost entirely changed, for our interior districts are very different from the coast sections.

The great demand for information on varieties of apples to plant came largely, therefore, from these new interior areas, which were almost entirely lacking in old apple orchards; even further, the interior sections, looking to the Canadian prairies for their markets were

without information as to what those markets desired. The situation has, therefore, thrown a great responsibility on the Provincial Government's Department of Agriculture, which had been active in promoting the fruit industry and was then called on for technical information on varieties and on cultural methods.

Much of the planting had already been done when I came to the province as provincial horticulturist in the spring of 1909, but there was still a large demand for information and the demand continued strong until two years ago. With so little local information to draw upon, it was necessary to secure the most reliable information from other districts of similar character; we were fortunate in having weather records for considerable periods for typical points in many of our new districts, and with these in hand, we set out to compare climatic conditions with already successful fruit districts.

Comparisons of climate, as to precipitation, are simple, but as to temperatures the matter is hedged with difficulties. In this respect we found the method of utilizing temperature records worked out by the U.S. Biological Survey of the greatest value. Their investigations show the marked relation between the character of the growth period and the vegetation. Knowing that

all the principal commercial varieties of apples had distinct climatic preferences, the problem was to determine what they were.

The most important temperature conditions influencing the success of any variety of apples are as follow: First, the length of the growing season: While this is usually gauged from the length of season between killing frosts, the more exact way is to determine the period during which the mean temperature is over forty-three degrees F. This period for Hood River, for instance, averages two hundred and forty days, from March 17th to November 12th; and for Vancouver, B.C., it is two hundred and thirty days from March 25th to November 12th. The growing season in the various agricultural districts of British Columbia is usually between one hundred and seventy-five and two hundred and forty days.

The second consideration is the number of heat units. The amount of warmth as well as the growing season is important. The sum total of heat during the season is expressed in heat units, and a heat unit is taken to be one degree F. for one day for each day of the growing season. In this way, the total heat units for the growing season are determined. Hood River has an average of 15,315 heat units; Vancouver, B.C., has 12,667. The total heat units vary wide-

*Extracts from an address delivered before the Pacific Coast Nurserymen's Association, at the twelfth annual meeting held at Vancouver, B.C., June 16th to 18th, 1914.



During the Past Two Years the Fruit Growers of Nova Scotia Have Built Up a Splendid Reputation For Their Fruit, on Both the Home and Foreign Markets, Through the Work of their Big Fruit Company. The Illustration Shows Some of Their Fruit Ready for Market.



A Well Loaded Pear Tree

This Souvenir d'Congress pear tree on the farm of W. Palmer, Victoria, B.C., was so heavily loaded, the boughs had to be propped up to prevent breakage.

ly in British Columbia horticultural districts, but are usually between ten thousand and thirteen thousand.

Also important is the average temperature at the height of the growing season. Where the average temperature for the hottest six weeks is below sixty-two degrees F., sweet corn and tomatoes are ripened with difficulty; where the temperature averages sixty-six degrees F. for the same period, these same crops are grown in large commercial areas.

Having collected such data for all the principal apple growing areas on the continent, but especially those of the Pacific North-west, we set out to determine the range of particular varieties, especially the Yellow Newtown, Spitzenberg, Winesap, Jonathan, Wagener, McIntosh and Northern Spy, which varieties seem to suit our markets and are among the most popular of boxed apples.

The Yellow Newtown is notably a variety of limited adaptabilities. We found that Hood River, Rogue River, and the Albemarle country of West Virginia, in which areas this variety reaches its greatest perfection, have a growing season of two hundred and forty to two hundred and seventy days, with a total number of heat units of from thirteen thousand seven hundred and fifty to fifteen thousand seven hundred, and a temperature over the six hottest weeks of sixty-seven decimal five to seventy decimal seven degrees F., all of these, furthermore, are humid areas.

The districts with most nearly similar conditions to British Columbia are still very far from having the same conditions. We, therefore, counselled against heavy plantings of Yellow Newtown, and actual experience has since confirmed our opinion.

A similar investigation of the Spitzenberg, and other sectional varieties, showed that it required somewhat similar climatic conditions, save that it is doing well in some western irrigated districts with similar temperatures. In districts, such as Spokane, with two hundred and sixteen growing days twelve thousand six hundred and twenty heat units, and a temperature for the six hottest weeks of sixty-eight decimal six degrees F., the trees are not so productive, the fruit is not so large, nor so well colored, nor of such high quality. Our principal interior districts, which have temperatures much like that of Spokane, are finding similar results, and these results have justified our expectations.

The common or old Winesap is one of the most popular of western apples and has been widely favored in British Columbia on that account. We found, however, that it apparently requires a growing season of around two hundred and twenty-five days, a total of not less than thirteen thousand four hundred heat units, and temperatures for the six hottest weeks of seventy to seventy-two degrees F. With shorter or cooler seasons, the fruit lacks in size, color and quality.

The most favorable recorded points in this province, such as Lower Okanagan Lake, with a growing season of about two hundred and three days, heat units eleven thousand seven hundred and seventy-five, and six hottest weeks' temperature of sixty-seven decimal three degrees F. are obviously lacking. The Kamloops district is much more nearly suitable, having an average of two hundred and fourteen growing days, twelve thousand six hundred and eighty-three heat units, and a six weeks' hottest temperature of sixty-nine decimal three degrees F. The Similkameen Valley, of which, unfortunately, we have no temperature records, but which is believed to have the longest and hottest growing season in the province, comes even nearer than Kamloops to meeting the requirements. We have accordingly advised fruit growers to avoid the Winesap, except for these hottest localities. In the last two years the Winesaps produced in various districts have borne out our expectations, and I believe that in the most favored districts mentioned the variety will succeed commercially. On our recommendations these districts have planted largely of it, and other districts have largely avoided it.

The Wagener has been much favored for planting in the interior of the province, largely because of early bearing and productiveness. Wagener requires apparently just about the very conditions found largely through our interior sections. It is the most largely planted variety in the interior next to Jonathan. In the cooler and less sunny districts, it is not doing as well as in more favored ones. Water core has given considerable difficulty, and its control by cultural methods is not yet attained. It seems well suited to the dry belt areas in which the Jonathan is succeeding, and I think will justify the large plantings which have been made.

The McIntosh Red is not so well known south of the line as in British Columbia. It is, as you know, of Canadian origin, though a very popular apple now in Vermont and in the Bitter Root Valley, Montana. In its native home it thrives excellently with a growing season of one hundred and ninety days, with eleven thousand and fifty-two heat units, and a temperature for the six hottest weeks of sixty-eight decimal two degrees F., and in the Bitter Root Valley, with a slightly longer season, eleven thousand six hundred heat units and a six hottest weeks' temperature of sixty-five decimal eight degrees F. We find these conditions very closely duplicated in both the irrigated and non-irrigated fruit districts of the interior. No other well-known variety seems to be so admirably adapted in this respect as the McIntosh. This variety has strongly justified our recommendations for it and may yet become our premier apple.

Similar studies made with a large range of varieties have given us most valuable suggestions. We now feel inclined to lay even more stress than before on temperature requirements, as our previous conclusions have become justified by experience.

The great unsolved problem in British Columbia apple culture is to find a suitable, long-keeping apple. The tree must be hardy, vigorous and productive; the fruit must be of medium or larger size, red, of high dessert quality, and of long-keeping quality. We have not yet found all these requirements in one single variety. It is true that the same problem faces apple culture throughout Canada. In the search for this variety we have examined the requirements of practically every variety grown on the continent, and are even now testing a number of varieties grown successfully in Great Britain and Australia. The successful conclusion of the search for the desired variety will mean millions of dollars to Canadian fruit growers. There is still much room for improvement in varieties.

Needed Improvements in Marketing Methods

DEFFECTS in prevailing methods of marketing fruit were freely discussed at the Dominion Fruit Conference, held at Grimsby, Ontario, September 2nd to 4th. The discussion was opened by Mr. Robert Thompson, manager of the St. Catharines Cold Storage and Forwarding Company who said that what is needed is assistance which will help growers to obtain remunerative prices for their fruit while enabling the consuming public to obtain their supplies at reasonable figures. At present consumers in thousands of cases have to pay exorbitant prices.

"This condition," said Mr. Thompson, "prevailed this year in connection with the marketing of the cherry crop of the Niagara district. In many places the fruit remained unpicked because of congestion and low prices in our local markets, while in places not many miles distant cherries were selling for 75 cts. to \$1 a basket. The same conditions arise from season to season in other varieties of fruit, such as plums, peaches, and berries.

"We have for markets our own prairie provinces, where little or no fruit is grown, our own cities and towns and sections not producing fruit in every province of the Dominion. The Dominion Government should appoint commissioners, say, one for the prairie provinces, one for British and European markets, and one for, say, such markets as Australia and South Africa or South America. The duties of these men would be to keep in close touch with crop conditions in every competing country and to keep the growers and shippers and the consuming public posted as to actual facts. The Department could find ways to have these facts placed before those interested, possibly by telegrams, and by giving the information to the daily press.

The Government should also set aside a sum of, say, \$4,000 or \$5,000 for the purpose of making trial shipments of fruit. These shipments could be sent to new points and markets and of lines of fruits not heretofore shipped. One condition might be that the grower would only be guaranteed the cost of packages, packing and labor of picking. If some safeguard was placed on these shipments no very great inroads might be made on this fund. Fruit being perishable and growers busy at the time of ripening, they are unable to give the attention to following up the shipments that is necessary when looking for new markets."

A lively discussion took place over Mr. Thompson's suggestions. Some of the delegates contended that the cherry growers in the Niagara district had themselves to blame if they left their cherries unpicked while there were good

markets to be found for them within one hundred miles. Mr. Thompson replied that growers often did not realize in time that there is going to be a need to find such markets.

For years peach growers, having found that the San Jose Scale would not attack sour cherries, have been planting these cherries. This year there was an unexpected glut in the Niagara district, although one hundred miles or so away cherries were selling at high prices. "It is not that we are producing too much fruit," said Mr. Thompson, "but that our methods of distribution are defective and inadequate."

Senator E. D. Smith, of Winona, said that as a result of thirty-five years' experience exploiting the Canadian markets he felt that while there might be chances to exploit some of the foreign markets he believed that the local markets were fully worked. Every week every local dealer receives circulars setting forth the price of fruit. One of his agents in western Canada had reported to him that only the day before he had met the agents of eight different cooperative associations trying to sell their output to any dealer able to buy. Some local dealers sometimes charge the consumers an unduly high price, but the growers could not prevent that, as it is impossible for them to deal direct with the consumer.

Mr. R. Brodie, of Montreal, said that sour cherries this season had sold in Montreal for as high as \$1.25 a basket wholesale.

Mr. Pritchard, of Paris, said that he

had been a retailer and now was a grower. Sometimes dealers make undue profits on one consignment, only to lose on another. When there is an unduly large crop growers must expect to receive low prices.

Mr. Thompson replied that he would agree with that statement when the system of distribution was as good as it should be, but not otherwise. There had not been an overproduction of cherries this year, as while there was a heavy crop in the Niagara district the crop east of Toronto was a failure. The total crop of cherries was not sufficient to make a pint for each adult in the province, to say nothing of the children. Under such conditions there was no reason why thousands of baskets of cherries should remain unpicked in the Niagara district, while people were going without cherries not one hundred miles away because of the high prices there charged.

"Growers," continued Mr. Thompson, "often do not want to tell the truth about the size of their crops for fear of depressing prices. In his association he had known the growers in the morning to stoutly deny that there was an overproduction of tomatoes, and that very afternoon they shipped out carloads of tomatoes. The growers had been hoping that there was not an overproduction, and when they denied that there was an overproduction they were simply saying what they hoped was true."

Senator Smith suggested that if the Government fruit inspectors would take a run through the country every now and then they might be able to give valuable reports.



A Productive Apple Orchard in Peel County, Ont., owned by C. Patchett, Cookville, Ont.
This orchard contains some 400 trees, mostly winter varieties, such as Spys, Greenings, Baldwins and Kings.

Mr. G. E. McIntosh, of Forest, Ont., told of having seen eighteen carloads of peaches in Detroit at one time while across the river in Windsor there were none. In Detroit they sold for \$1.30 a bushel and in Windsor for \$2.25 for three baskets. Some growers who had paid twenty-five cents a bushel duty to get their fruit into Detroit later paid forty cents a bushel duty to get the fruit back into Windsor, and saved money by doing so.

SALE PRICE OF APPLES

Mr. Elmer Lick, of Oshawa, said that he had received reliable information the day before that some Duchess apples had been sold a few days previously in Brandon for \$1.75 a bushel. This, he considered, meant an unfair profit for the retailer in Brandon.

A western dealer who was present, challenged this conclusion. He pointed out that Duchess apples were selling in Ontario for \$2.25 a barrel, freight came to \$1.10 a barrel, jobbers' charge to 50 cents; total charge, \$3.85. Apples at \$1.75 a bushel equalled about \$4.85 a barrel. This left an apparent profit of about \$1 a barrel. Out of this, however, the retailer would have to pay his operating expenses, which would leave him a considerably smaller profit than appeared.

Mr. Pritchard, of Paris, said that he had been a retailer for several years and was now a retailer. He had had all the experience he wanted as a retailer. He would rather hoe potatoes all the year around. One difficulty was that growers do not know what it costs them to produce a barrel of apples on an average, say, for five years.

R. M. Winslow, of British Columbia, said that they had investigated the cost of production in British Columbia, and had placed it at between 75 cents and 80 cents a packed box.

Mr. J. G. H. Pattison, of Winona, said that the present methods of gathering crop information are very inaccurate, not even the Government reports being as accurate as they should be. He thought that trained men should be engaged to go through the chief fruit districts to gain this information.

Prof. T. G. Bunting, Macdonald College, Que., agreed with Senator Smith that the local dealers are kept properly posted as to the prices of fruit, but he thought that some means should be devised of getting that information to the public. The public gains the impression from their local dealers that the crop is small and prices high, and stop buying. If they knew the real conditions they would insist on obtaining a supply at reasonable prices. He thought it would be a good idea if accurate information could be published in the daily papers for the guidance of the public.

Prof. J. W. Crow, O.A.C., Guelph, pointed out that the cost of production has nothing to do with the selling price of the fruit. We require a better system of market reporting and of crop reporting. It had been suggested that the Federal Government should endeavor to gather this information.

Much of the criticism aimed against the retailer, he said, was unfair. This was because we do not know what it costs him to conduct his business. There are very few retailers that are getting wealthy. We know that many fail. One of the reasons for the high cost of doing

The Apple: Our National Dish

What do you say to a concerted effort being made by the fruit interests of Canada to have "The Apple" made the recognized "National Dish" of Canada? The Englishman is noted for his "Roast Beef," the Irishman for his love of "Potatoes," the Scotchman for his partiality to "Oatmeal" and the United Stateser for his "Pork and Beans." Canadians are as yet without a national dish.

The consumption of apples might be greatly increased were they to be advertised in the "1001" ways they would be, both at home and abroad, were they to become known as the national fruit of Canada. They are now produced in all parts of Canada, even the prairies, and are thus national in habits of growth. This suggestion was first made in *The Canadian Horticulturist* two years ago by Mrs. Edwin Peart, of Freeman, Ont. Let us hear from our readers as to what they think of it.

business is the cost of duplication. All the retailers have to maintain delivery rigs, which drive back and forth over the same ground, entailing much unnecessary expense. Growers should also consider the factor of advertising. Grocers handle most of the leading breakfast foods with little or no profit. This is because they are so well advertised the public demands them and the grocer has to carry them in stock. Fruit growers may be able to obtain a suggestion from this condition.

Mr. H. B. Cowan, of *The Canadian Horticulturist*, pointed out that there was another factor to be considered. In towns and cities land values are very high. The owners of land often demand enormous rentals from the people who want to use it. A commission dealer with a large warehouse might have to pay a rental of \$4,000 or \$5,000 a year. In addition, he would have to pay high wages to his employees to enable them to pay their rentals. Thus such a dealer would have to sell 4,000 to 5,000 barrels of apples and make a so-called clear profit of one dollar a barrel on each before he would even be able to pay his rent, to say nothing of the wages of his employees or a salary for himself. Too large a proportion of this money went to the landowners, who merely owned the land and charged monopoly prices for its use without having any material risks

or working as do the fruit growers and retailers.

In closing the discussion, Dominion Fruit Commissioner D. Johnson promised that the Government would investigate the points raised during the discussion. Later resolutions were adopted endorsing Mr. Thompson's suggestions regarding trial shipments of fruit and trade commissioners.

Orchard Notes

Orchard trees may be mulched this month. Place the straw or manure out about as far as the branches go, and leave at least three inches bare at the base of the tree, so mice will not work on the tree. Put on about four inches thick.

Throw a few shovelfuls of earth against the young apple and plum trees before the ground freezes. This will help to keep mice away from the trunks.

Save a few cuttings of grapes for planting next year. Cut the wood into pieces having two to three buds, and place in sand or sawdust in a cellar until spring, when they may be planted out in nursery rows.

Grapes in northern sections should be pruned and laid on the ground ready to cover with earth for the winter.

Cut and burn all dead or dying trees on the place, as they will spread disease or insects to other trees.

Lay down raspberries and blackberries and cover them with enough dirt to hold them close to the ground all winter. This should be done when there is no frost in the canes.

Barrel Packing

It is advisable for young packers to take off the head of a barrel of their tailing occasionally and note the number of apples which have been touched by the head at the pressed end. If it should appear that a number of apples have not been touched by the head, and others are severely pressed, then they may rest assured that they have made a poor job of the tail. The aim should be to have equal pressure upon every apple in the last row.

It is not of material importance whether the stem end or the blow end is placed up. It injures the apple somewhat less to have the blow end up, but the apples can be placed in a better position by having the stem end up. All stems showing either on the head or tail should be removed with a stemmer. Do not attempt this work with a knife. This operation is frequently neglected and long stems are pressed into the flesh of the apple, giving entrance to disease germs.

Heads cut from heavy paper or light pulp board are very desirable on both

ends of the barrel. The patent corrugated heads cannot be recommended. It is doubtful, too, whether there is any advantage in using fancy paper heads.

The exact pressure which must be given will depend somewhat upon the variety of the apple. If they are packed for storage or for a short trip, then the pressure need not be so heavy. If they are packed for export it will be better to press them heavily, but not so as to break the skin of any particular specimen. It has been the experience of the

fruit inspectors, who open a great many barrels during the season, that slackness in barrels is as often caused by over-pressure as by under-pressure. Over-pressing will break the skin of the apple, or bruise it severely, inducing decay in one or more specimens, which very quickly cause slackness. Certain varieties, too, will require and stand more pressure than others. The Spy has to be pressed very moderately as the apple splits readily under pressure; russets, on the contrary, will stand much heavier

pressure to prevent slackness from evaporation.

In finishing the barrels, six nails in each head, if properly driven, are sufficient. Liners should be used invariably, aid should always be kept damp. Few packers appreciate how much is added to the strength of the barrel by the use of the head liner properly placed. There is no excuse for nailing the second end hoops. It invariably spoils some of the apples and adds nothing whatever to the strength of the barrel.

The Hyacinth

H. F. East, North Toronto

THE most valuable of early flowering bulbs, the hyacinth, is so accommodating that it can be flowered in a variety of ways by very simple modes of treatment, and may be employed as a hardy, rough weather plant for the garden border, or as a grand exhibition and conservatory flower. The bulbs may be planted any time from September to the middle of December with the certainty of their blooming well if properly cared for; but the prudent cultivator will plant them as early as possible in the autumn, and so manage them afterwards as to secure the longest period of growth previous to their flowering. They may be forced to flower at Christmas but the more slowly the flowers are developed the finest in the end will they be.

To obtain good bulbs is a matter of the utmost importance. The mere size of a hyacinth bulb is no criterion of its value—nor, indeed, is its neatness of form or brightness of appearance. The two most important qualities are soundness and density. If the bulbs are hard and heavy in proportion to their size, they may be depended on to produce good flowers of their size and kind. The bulbs of some sorts are never large or handsome, while on the other hand many sorts partake of both these qualities in an eminent degree.

CULTURE IN POTS

It is not necessary to employ large pots of a peculiar shape for hyacinths. There is nothing better than common flower pots, and in those single bulbs may be flowered in a most satisfactory manner. The pots usually employed are four and one-half inch or five inch. I advise the use of smaller pots where hyacinths are grown in frames for decorative purposes, because they can be conveniently placed in ornamental stands or packed close together in baskets of moss when required for embellishment in the drawing-room. A rich, light soil is indispensable. It should consist chiefly of turfy loam, some leaf soil, and an addition of sharp sand. The mixture

should be in a moderately moist condition when ready for use.

Fill the pots full of soil, and then press the bulb into it and press the soil around the bulb to finish the operation. If potted loosely, they will not thrive. If potted too firmly, they will rise up as soon as they begin to grow, and be one-sided. In large pots the bulbs should be nearly covered with soil, but in small pots they must be only half covered in order to afford them the largest amount of root room.

When potted, the coolest place should be found for them; and unless they go absolutely dry, they should not have a drop of water until they begin to grow freely and are in the enjoyment of full daylight. The pots may be stored in a dark, cool pit, and it is advisable to cover them with a few inches of plunging material. As to their removal there

are two matters to consider—they must be taken out as wanted for forcing and certainly before they push their flower spikes through the material over them. The floor of a cool greenhouse is a good place for them when first taken out of the bed and cleaned up for forcing. Another matter of great importance is to place them near the glass immediately their green color is established, and to grow them as slowly as the requirements of the case will permit. If to be forced early, allow plenty of time to train them to bear a great heat. Those to bloom at Christmas should be potted in September. Those to follow may be potted a month later. If a long succession is required, a sufficient number should be potted every three or four weeks. Those potted last will flower in frames or pots without the aid of artificial heat. In any case, the highest temperature of the



Note the Floral Effect of This Modest Home

The front lawn and the garden in the rear of this home, that of Mr. Montrose, of Walkerville, are unusually fine. The window boxes are filled to overflowing with trailing vines, coleus, geraniums, petunias and hanging fuchsia, the whole making one mass of color from the ground half way up the windows

Mayflowers in January

W. W. McNeely

Among the readers of The Canadian Horticulturist there are many who long for the woodsy things, the flowers, ferns and plants that draw us to the forests irresistibly as soon as the robin returns. How often during the long winter months we rebel against the snow and would gladly exchange all our hyacinths and tulips and freesias for one whiff of the hepatica's spicy fragrance.

To all such I bring greetings, to a few, perhaps, I bring joy—not this year maybe, but in the years to come. For as I write my window is bright with the blue and pink and white blossoms of the hepaticas, whose delicate aroma carry me back to the days when we went mayflowering, and dared each other to take off our shoes and wade the icy puddles. This, however, is distressing—but who could resist reminiscing when one's window is full of mayflowers?

To have mayflowers or hepaticas in January requires absolutely no knowledge of floriculture. All that is necessary is to dig up a few roots in the woods just before the snow falls (or even after) and plant them in pots or boxes. Then place them in the cellar for a few weeks and bring them up to the light and heat. Keep them well watered and you will have an abundance of blossoms in two weeks. They never fail, and for an invalid or shut-in nothing will bring more pleasure than a little bowl of hepaticas when winter blasts are blowing.

After the flowers are nearly done the leaves grow luxuriantly. In some varieties the markings are quite pretty and the fresh green of the leaves is so appealing that I feel sure you will want the plants to remain on your windows after the flowers have delivered their message of hope and good cheer.

Planting Suggestions

J. McPherson Ross, Toronto, Ont.

For houses with low foundations plant low-growing plants and evergreens. These make a suitable fringe. For a house with high foundations and basement windows, taller growing shrubs and plants are suitable, as they hide the nether nakedness and give grace and beauty to otherwise ugly features.

The same enthusiasm evinced in spring gardening should be continued till the snow falls. Neatness and order give as much pleasure as floral effects.

Autumn has really more work to do in preparing the soil, rearranging beds and determining the effects for next season than the hurried time in spring will allow. Observe now the effect of certain combinations and aim to produce them in the most prominent places next

season. Flowers such as *Lilium Candidum*, Canterbury Bells, Foxglove, and all whites and blues give more pleasure during hot weather than the gaudy reds and yellows—which are more suited for cooler fall weather.

Dahlias will not bloom during very hot weather, the intense heat having a deterrent effect on buds, which frequently dry up and fall off.

Garden Promptings

Rake a pile of leaves into some out of the way corner to decay and furnish leaf mould for next year.

There is still time to plant tulip bulbs outside or hyacinths, tulips, narcissi, or daffodils for forcing indoors.

As soon as the ground begins to freeze cover the tulip bed with about four inches of heavy manure.

Well-rotted manure put on the lawn in the late fall will help to hold the snow and make a much better lawn next year.

Cover Boston ivy vines with straw as a protection against winter.

Rake up and burn all prunings and weeds in the orchard and garden.

As soon as the ground freezes cover the strawberry bed and bulb beds.

Place oak boughs that are holding their leaves over tender evergreens.

Prune and burn all diseased limbs or dry fruits clinging to the plum or apple tree.

Mulch orchard trees and shrubs with manure as soon as the ground freezes a little.

Draw the currant branches together and tie them to prevent their being broken down by the snow or sleet of winter.

Cut and burn asparagus canes. If well rotted manure is available mulch the bed well with it, plowing it in as early in spring as possible.

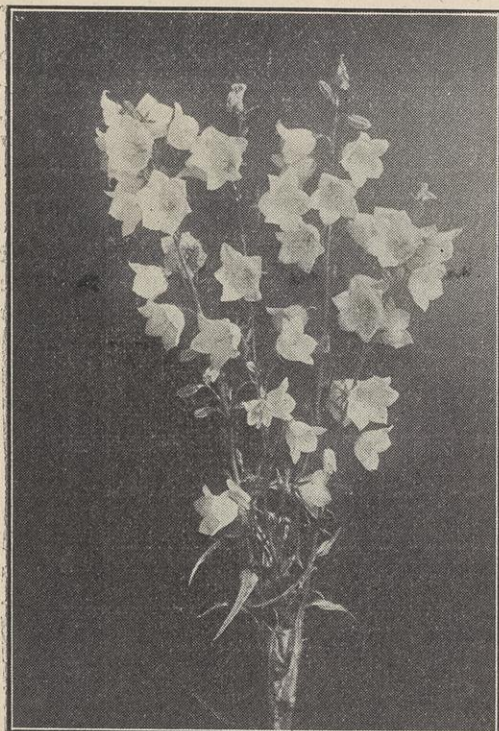
Place burlap, cornstalks, or boards on the south side of small smooth-barked lawn trees and apple trees to protect from sunscald during the winter.

Clean hay or straw may be placed on perennials and covered with boards or tar paper to prevent the plants from getting wet. It is well to avoid putting on any material that will smother the plants or permit of their getting wet.

Do not allow house plants to stand in water in the jardiniere. Water as frequently and thoroughly as the plant needs, but keep the jardiniere dry at all times.

After the chrysanthemum plants bloom cut down the flower stocks and set in a cool, light place until toward spring when cuttings may be made for next season's growth.

Rose bushes may be laid down and covered with earth, later covering the earth with hay or strawy manure.



A *Campanula Persifolia* or Bell Flower

Like other biennials it may either be sown where it is to remain, any time after midsummer, or may be sown in beds in the spring for transplanting.

forcing pit should be at 70 degrees; to go beyond that point will cause the attenuated growth and poverty of color.

CULTURE IN GLASSES

It is of little consequence whether rain or spring water be employed in their culture in glasses, but it should be pure, and in the glasses it should nearly but not quite touch the bulbs. Store at once in a dark, cool place to encourage the bulbs to send their roots down into the water before the leaves begin to grow. When the roots are developed, bring the glasses from the dark to the light in order that the leaves and flowers may be in perfect health. It is not desirable to introduce in the water any stimulating substance, but the glasses must be kept nearly full of water by replenishing as it disappears. If the leaves become dusty they can be cleaned with a sponge dipped in water, but particular care must be taken not to injure them in the process.

MINIATURE HYACINTHS

The charming little sparkling hyacinths are invaluable for baskets, bowls, and other contrivances for the choicest decorative purposes. In quality they are excellent, the spikes being symmetrical and color brilliant; but they are true miniatures, growing about half the size of the others and requiring less soil to root in. They will flower well if planted in a mixture of moss and charcoal. Keep them moist and covered with the greenest moss to give the ornament containing them a finished appearance.

Winter Flowering Plants

B. C. Tillett, Hamilton, Ont.

IT is rather surprising how few people make any effort to grow flowers during the winter. Yet there are quite a large number of plants which naturally blossom at this season. With a little care it is possible to have the house gay with flowering plants, the bulbs to produce them being all easily obtainable and at small cost.

In most years we have long spells of wintry weather, when outdoor work in the garden is necessarily suspended, but that should instil in us a greater desire to carry on gardening work within doors. Of course, indoor flowering plants, except for those who possess hothouses, are limited to those kinds which lend themselves to indoor culture in pots and which moreover do not need a great amount of artificial heat. But apart from flowering plants, there are a large number of other plants, such as palms, ferns, and those plants which although having no flowers possess charms in the way of ornamental foliage throughout the year.

Among the many flowering plants which can be successfully cultivated in rooms and which will flower during the winter and early spring months the following are favorites, I think, with most of us: Lily of the valley, hyacinths, primulas, cyclamen, daffodils, freesias, wallflower, and geraniums.

The lily of the valley, with its delicate

little white bell-shaped flowers and its exquisite and unique perfume, claims first attention. This plant is a perennial, that is, it is not a plant which requires to be raised every year, but one which will, with care, flower year after year. It is one of the easiest to force, and can be grown in pots, in flat, wooden boxes such as nurserymen use, or in bowls. The plants are raised from bulbs, or "crowns," as they are usually called, and these should be set in some good soil containing leaf mould, about two inches deep and about two inches apart. If retarded crowns can be obtained; these will come into bloom in two or three weeks. For table decoration the bulbs should be planted in a bowl and then once the shoots are well out of the soil, this can be covered over with either moss or grass, which greatly improves the effect. A temperature of 55 degrees is all that is needed, and is preferable to a greater heat, as the blooms will be stronger and will last longer.

HYACINTHS

There are several ways of growing hyacinths. Some people merely place the bulbs in a vase containing water, and made for the purpose, which is an easy way of growing them; but there is nothing very ornamental about this method of cultivation, nor is it the plant's natural way of growing. It can be

much more effectively grown by planting a few bulbs of different colors, say white, pink, and deep blue, in a good-sized bowl filled with fine gravel or pebbles. If the bulbs are set firmly in a little hollow three or four inches apart, the one in the centre being raised a little above the others, and the bowl filled with water until it touches the bulbs, a very pretty effect will be had when the plants burst into flower. The bulbs should be kept constantly in the water, and here too, a natural touch may be added by putting moss or grass about the bulbs.

PRIMULAS

There is an advantage in cultivating primulas owing to their continual succession of flowers, for if the plants receive proper care and attention they will flower for several months. One of the most beautiful kinds is, I think, the giant white—*Primula Alba Magnifica*, to give it its proper and well-merited title. To preserve the flowers in good condition they should be kept in a moderately dry atmosphere, but primulas like a damp bottom to stand on, and it is a good plan to keep the pots in flower pans, though in the winter season they do not require quite so much feeding as during the dry summer months.

CYCLAMEN

Cyclamen like a good mixture of sand loam and leaf mould, and as with primulas, unless one has a small glass house in which to place seedlings, it is more satisfactory to purchase plants in the first instance. However, there are some who have glass, and when purchasing cyclamen tubers they will bear in mind the necessity of pressing them well into the soil so that not more than half the tuber is under the soil. Give the tubers a slight watering only until they commence growing. Cyclamen and primulas, too, are the better for a little liquid manure.

DAFFODILS AND NARCISSUS

Daffodils and narcissus can be grown with excellent results in a window box if of sufficient depth to permit of the bulbs being planted at least three inches below the surface. The plants do well in loamy soil, and the bulbs may be placed about four inches apart. Although more suited to outdoor culture scattered in grass, they make a good show in a room, especially the long, trumpet-like varieties.

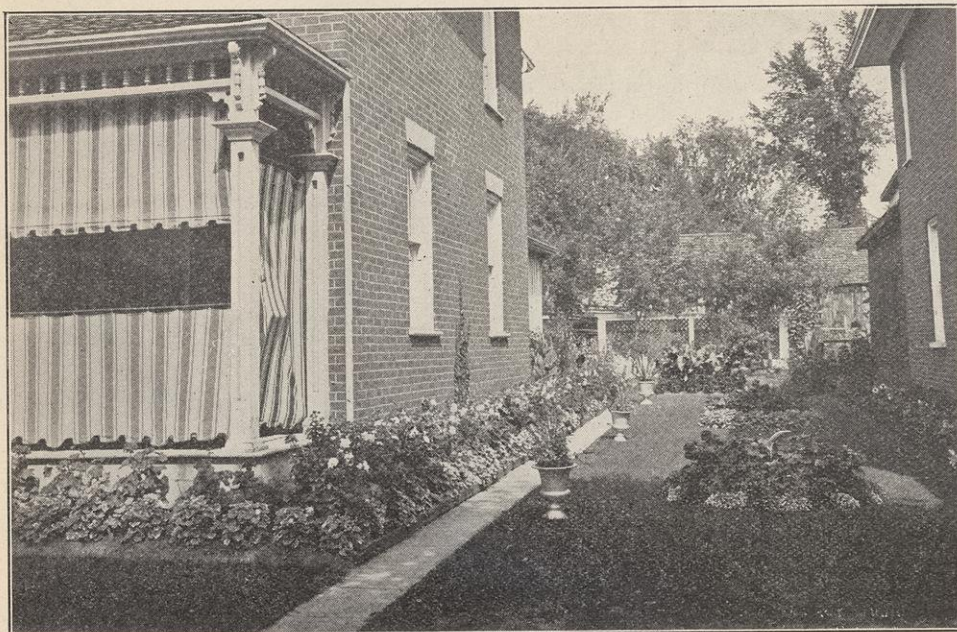
All growing bulbs should be watered fairly freely when in active growth, and plants in warm rooms sometimes need daily waterings to prevent the soil becoming too dry.

No indoor flowering plant is more easily forced than the freesia. They are excellent plants for our little greenhouses



A Prize Winning Perennial Border in St. Thomas, Ont.

In the little space here shown some 75 varieties of perennials were grown. The garden won a second prize in a garden competition. It is owned by Mrs. Waterbury.



A First Prize Peterboro Garden. That of Mr. W. J. Kennedy

and can be brought into the room, where its sweet fragrance will soon reveal its presence. All they need is a well-drained light soil, to which a little well decayed manure and a handful or two of leaf mould has been added. They can be readily multiplied from seed. The cut flower is much in demand for decoration. The freesia was originally only an exotic, and its introduction from South Africa is one of comparatively recent date.

THE GERANIUM

It will greatly benefit stock geraniums to give them a good pick over, as those lifted and potted when clearing the beds will have lost a good deal of foliage. Cut back any decaying shoots into the older wood. To keep geraniums alive during the winter months in a greenhouse without heat, the plants should be kept moderately dry, especially when the weather is frosty and should have all the light possible. Also remove all faded or mouldy leaves. In very sharp weather remove the plants indoors or warm the greenhouse, as the frosts must be kept from them.

A Question About Shade Trees

Several of my neighbors and I want to plant maple trees. I ordered Norway Maples, but some of the others thought it best to stay by the Canadian maple and I changed the order. The nursery firm informs me that they have discontinued growing the Canadian maple because they say that it is too slow a grower. They recommend the Norway or Silver Maple. Your opinion will be appreciated.—W. J. K., Galt, Ontario.

The Norway Maple is particularly useful as a shade tree for a city street, as it withstands street conditions remarkably well. The Sugar or Rock Maple—sometimes called Canada Maple—is also a popular street tree, but it does not thrive in cities so well as the Norway Maple, as its foliage is sensitive to

dust and smoke. Experiments at the Central Experimental Farm, Ottawa, indicate that the Norway and Canadian Maples both make about the same rate of growth yearly. The wood of the Silver Maple is soft and brittle and the limbs are easily broken off in sleet or wind storms. It should not be selected except for some special purpose. A bulletin entitled "The Planting and Care of Shade Trees," by F. E. Buck, B.S.A., No. 19, has been issued by the Department of Agriculture of Ottawa. We should advise you to write for it.

Protecting Trees from Mice and Rabbits

W. T. Macoun, Dominion Horticulturist, Ottawa, Ont.

Every year thousands of fruit trees are injured in Canada by mice, and, in the new districts, a large number of rabbits also. There could be nothing more discouraging to a fruit grower, or would-be fruit grower, than to see his orchard which he had cared for, perhaps, for five or six years, ruined by mice; and yet this frequently happens. All this could be prevented if the farmer or fruit grower would use the information available and protect his trees from mice. Some years there is less injury than others, and this fact leads to carelessness, and when a bad year comes the trees are unprotected.

While the depredations from mice and rabbits in winter vary from one year to another, depending on the scarcity or abundance of food, the number of mice which are in the vicinity and the character of the winter, the injury is always greatest when the orchard is in sod, and when there is rubbish lying about; hence the latter should be removed be-

fore the winter sets in. In most cases it is not necessary nor advisable to have the orchard in sod, particularly when the trees are young, although it is highly important to have a cover crop, which also may sometimes become a harbor for mice. As mice may be expected in greater or less numbers every winter, young trees should be regularly protected against their ravages.

Mice usually begin working on the ground under the snow, and when they come to a tree they will begin to gnaw it if it is not protected. A small mound of soil from eight to twelve inches in height raised about the base of the tree will often prevent their injuring the tree, and even snow tramped about the tree has been quite effectual, but the cheapest and surest practice is to wrap the tree with ordinary building paper, the price of which is merely nominal. Tar paper is also effectual, but trees have been injured by using it, and it is well to guard against this when building paper will do as well. After the paper is wrapped around the tree and tied, a little earth should be put about the lower end to prevent the mice from beginning to work there, as if they get a start the paper will not stand in their way. It may be stated, however, that although several thousand young trees have been wrapped with building paper for years at the Experimental Farm at Ottawa, there have been practically no instances where the mice have gnawed through the paper to get at the tree. The use of a wire protector, or one made of tin or galvanized iron, is economical in the end, as they are durable.

There are a number of washes and poisons recommended for the protection of fruit trees and the destruction of the mice and rabbits, but none of these is very satisfactory, as if the mice or rabbits are numerous the poison has not sufficient effect upon them to prevent injury altogether. The following method of poisoning has been found fairly successful for mice, but rabbits are very difficult to deal with.

Make a mixture of one part by weight of arsenic with three parts of corn meal. Nail two pieces of board, each six feet long and six inches wide, together so as to make a trough. Invert this near the trees to be protected and place about a tablespoonful of the poison on a shingle and put it near the middle of the run renewing the poison as often as is necessary.

Just before snow comes cover the lawn with well-rotted manure. Rake this litter off in the spring after the rains have worked the manure into the soil. Better sod will result. Weeds will be kept in check more easily by the grass.

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The Possibilities of Beekeeping for Women*

Thos. McGillicuddy, Department of Agriculture, N. Toronto

OFTEN, indeed, has the question been asked: "May women successfully enter upon beekeeping as a means of livelihood?" But seldom, if ever, has the question been thoroughly dealt with by those who are best able to answer it—the women who know.

The compiler of this article has chosen five of the best-known women beekeepers in Ontario to tell from their own viewpoint, and not in reply to a bald schedule of questions, why beekeeping offers an attractive and profitable field of activity for their sex. It also happens that geographically the members of this very able and representative quintette are pretty evenly distributed over Ontario, their apiaries ranging from Lake Huron to the banks of the St. Lawrence; thus showing that beekeeping may succeed in practically any portion of Ontario.

All of the contributors to the symposium are of opinion that women may successfully practise beekeeping. In fact, one of them, Miss Scott, avers that it is an occupation for women rather than for men. Miss Robson also believes that the work is particularly adapted to women. Mrs. Hamm thinks that a woman can support herself by operating an apiary, but insists that her heart and energy must be in the work. Mrs. Deadman says that beekeeping will have a fascination for the woman who engages

in it; while Miss Treverrow complements this when she remarks that the occupation is one in which woman's disposition can have full play.

The quintette admit that occasionally some of the work in an apiary is too heavy for a woman to perform, but they very bluntly and practically remark that such mere manual labor—the accent on the man—is comparatively easily secured in every locality.

Some of the five also refer to the healthfulness of the occupation, which demands considerable outdoor employment, and this is a strong point in its favor. The fact that woman may conduct apiaries not only on the farm, but also in villages, and even in the suburbs of towns and cities, is a very important argument both from an economic and a social point of view.

COST OF INVESTMENT

Estimates of the cost of the equipment of an apiary differ somewhat. The prices for a hive of bees, for instance, as given, range from five to ten dollars. An average cost of eight dollars may be counted upon. Supplies for apparatus and other needful equipment for a not too small working apiary—say one of forty or fifty colonies—would demand an additional investment of perhaps one hundred dollars, or a total of about five hundred dollars, which certainly is not great considering the annual turnover, and almost certainty of profit. Miss Treverrow very fairly points out that such an amount is small compared to that which would be necessary to set

up a woman in any equally lucrative business.

If however, it is necessary, either from a spirit of caution, or for lack of funds, that a woman should go into beekeeping on a small scale a start may be made with a few hives, etc., at a cost of one hundred dollars, or even half of that.

WHAT ABOUT PROFITS?

Here, also, as might be expected, our contributing experts disagree as to possible profits. Locality, market and other causes likely combine to make up the differences of opinion given.

Mrs. Hamm says about fifty colonies, spring count, should bring in about four hundred dollars, or about eight dollars a hive. Miss Scott places the profit per hive at from five dollars to fifteen dollars according to the season and locality, or an average of ten dollars a colony. Miss Robson puts the net profit per hive at about five dollars. On her sixty-five colonies last season she cleared between three hundred and four hundred dollars.

The late Mrs. Deadman, when interviewed, went more fully into the matter of profit and loss than any of the other contributors. She placed the annual revenue per hive, spring count (including increase by swarming) at fully ten dollars in a good average season, although she admitted—giving an instance—that very poor seasons sometimes occur.

It should be observed, also, that for months together the bees require little



A Veteran among the Bees, Mrs. MacDonald, Brigidon, Ont. Mrs. MacDonald is Eighty Years of Age.

*From The Farmers' Magazine.

or no attention, which will permit the thrifty woman beekeeper to devote her time and talent to other work which may add to her income.

MRS. FRED HAMM, BATH

Mrs. Hamm writes: "Do I think a woman could support herself keeping bees? Yes, most decidedly; but the woman who undertakes to do so should expect to put as much energy, as much care and thoughtfulness, and as much close attention to detail in the work as she would in any other vocation. It is like so many things; the very minute details seem so little but count so much.

"There is in my opinion, no successful method of keeping bees unless one's heart is with the bees, both with regard to pleasure and profit. These essentials assured, success is certain.

"How many colonies could she manage? The number of colonies a woman could manage is limited only by her experience and ability. There are men who manage hundreds of colonies in yards ten, twenty, and thirty miles apart, and there is really no reason why a woman could not do the same. This does not mean that she must do all the work, but it means that she must furnish the brains and hire help to furnish the brawn; and it is quite proper to say there is much work in an apiary which requires the strength of an able-bodied man.

"How much profit could fifty colonies, spring count, bring her? Fifty good colonies in an average season in a fairly good location, should bring her four hundred dollars."

SUITED FOR WOMEN

Miss Margaret W. Scott, Meyersburg, writes: "In my opinion beekeeping is an occupation for women rather than for men. Unless a large number of bees are kept it hardly pays a man to spend his time on them, while a woman can care for say fifty colonies if they are near the house, besides looking after the household duties.

"There is no reason why more women should not take up beekeeping as a business. (It is more than an occupation, it is a business.) It is interesting, pleasant, and profitable. However, if one does not wish to work but merely to do something to occupy the time, leave bees alone, for modern beekeeping requires skill, patience, determined perseverance, and downright hard work.

"I think much of our success is due to two big brothers, who are always willing to saw, drive nails, extract honey, press wax, or anything else we want them to.

"The average profit is very hard to estimate, so much depends upon locality, crop prices, weather, and the care taken of bees. For instance, last season some of our best women beekeepers averaged only five dollars a colony. Our locality

was better, and we averaged fifteen dollars, with very little fall flow. Some places have no fall flow any year; we always have 'lots' of buckwheat. Thus you see how much depends on circumstances.

"The expense per colony is varied. Here we have had the pleasure(?) of entertaining a guest known to beekeepers as European foul brood, and although it has long since outworn its welcome,



Who Says Women Can't Keep Bees?

it is loth to depart. The expense entailed in treating this disease is considerable, and where there is no fall flow of honey feeding for winter is another item in the line of expense. Taken altogether there is much to gain and little to lose, so hurrah for the bees, stings and all"

MORE WOMEN BEEKEEPERS

Miss M. B. Treverrow, Meadowvale, says: "Beekeeping is an industry to which women are turning in yearly increasing numbers. Like every pursuit that man or woman engages in, as a means of support, it is good or bad, successful or unsuccessful, attractive or otherwise, according to the individual who undertakes it.

"Every business requires to be thoroughly understood by the operator if it is to be successful and to no business does this apply more truly than to beekeeping. Woman's natural disposition to be careful, painstaking, watchful and energetic, has full play in this occupation, as there is so much to learn, to interest and to do, in carrying out all that is required of her during the beekeeper's harvest.

"Out of door life for women during

the summer months is especially beneficial to health.

"At the present time beekeeping is attended with considerable profit to the expert apiarist, and the amount necessary to set a woman up in the beekeeping business is small compared to what would be required to start in any other such lucrative pursuit. Woman's generally conceded inability to finance a business is overcome in beekeeping (in Ontario at least) by the aid afforded by the Honey Exchange or Crop Committee, who send out to each beekeeper a list of prices that should prevail for the season."

A National Experiment Station

Editor, The Beekeeper,—I take pleasure in sending you some photographs of the new laboratory for the bee culture investigations of this Bureau. This building has been occupied by this office since July 1st.

The laboratory is located in a suburb of Washington named Drummond, across the district line in Maryland. It is located about seven miles from the centre of the city and the trip can be made easily by electric car (Wisconsin Avenue line, running on F Street). Cars leave 5th and F Streets every fifteen minutes during the day. At the end of the car line there is a short walk, the laboratory being next to the last house on the right hand side of the only street in Drummond. All mail, telegrams, express and freight should be sent to the Department of Agriculture, Washington, D.C., as formerly.

The new laboratory is a building constructed as a private residence, but admirably suited to our needs. We have eleven rooms, basement under the entire house, and an attic, hot water heat, gas, electric light, water, sewer, and all modern equipment. The house is located on a lot of about three-quarters of an acre giving us abundant room for the apiary and other outside work. The lot has been beautifully planted by former occupants, so that we have a rather finished establishment, and are not compelled to wait until trees and shrubbery can grow before the place is attractive. The photographs indicate that our surroundings are ideal.

The establishment of this laboratory in the suburbs marks a large step in advance for the investigations in bee culture of this Bureau. We formerly had offices and laboratories in the city, with the apiary eight miles away. Then the wintering work was carried on at the University of Pennsylvania, Philadelphia, because of a lack of facilities in Washington. Furthermore, the laboratories in Washington were not all in the same building, but were separated about



The New National Experimental Apiary at Washington, D.C.

a mile. All of this caused a considerable loss of time and useless expenditure of money and the placing of all of this work in one place has increased the efficiency of the work incalculably. The wintering work will be carried on in the basement and also on colonies out of doors. The instruments adapted to and devised for this work have been removed from Philadelphia, and are now in place in the new laboratory.

Having at last obtained creditable

quarters suited to our needs, it will be an exceptional pleasure to have our beekeeping friends come to see us. I have made the directions sufficiently explicit so that we can be reached. We can also be reached by telephone on the Washington exchange (Cleveland 998).

Yours very truly.

E. F. Phillips,

In Charge, Bee Culture Investigations,
Washington, D.C.

Feeding Bees for the Winter

Anna E. Sinclair, Gordon Bay, Ont.

THE time of year has arrived when it is necessary to find whether or not the bees have a sufficient supply of stores for the winter. If they have not from ten to fifteen pounds of actual honey for indoor wintering and from twenty-five to thirty pounds for outdoor wintering we must begin without delay to feed sugar syrup if we would have them winter successfully.

For such beekeepers as have only a few hives it is unnecessary to purchase a special feeder. The most satisfactory method of feeding we have yet found is by the use of ordinary pint jam jars and a super. Remove the two centre rows of sections and their cross pieces or rests from the super and place the super on the hive. Next, make a sugar syrup from the best granulated sugar in the proportion of one quart water to two quarts sugar. Boil the water and pour over the sugar and stir thoroughly till all is dissolved. Boiling water causes

this proportion of sugar to dissolve and also wholly obviates the difficulty and danger of scorching the sugar, which would be sure death to the bees.

Lay out four pint jam jars on some sort of tray for each hive to be fed. Fill the jam jars with the warm syrup and cover each jar with a double thickness of cheesecloth cut large enough to double down nicely over the edges. Slip a rubber band over the cheesecloth to hold it firmly in place. Allow the cheesecloth to become saturated with the syrup. The jar can then be quickly inverted when desired and retain all the contents, scarcely leaking a drop. Now carry the tray to the hive and use enough smoke to drive the bees well down out of the "hall-way" in the super so that no bees will be crushed. Take the jars one by one, invert quickly over the tray (in case a few drops should leak) and place it, thus inverted, directly on top of the frames that are exposed. Four pint jars

placed side by side will just nicely fill the space left open by the removal of the two rows of sections.

Our method is to feed every alternate day, removing the jars in the morning and returning them filled to the hives in the afternoon about three or four o'clock. This method almost entirely prevents the robbing usually attendant upon feeding. Indeed, our bees seem never to work harder, as every available moment is occupied in foraging for pollen with which to feed the larvae incident upon the extra brood rearing, which is greatly stimulated by this afternoon feeding of the warm syrup.

Apart from the actual value of feeding itself to the bees, stimulation of brood rearing at this season is most valuable. It secures a large force of fresh strong bees to go into winter quarters, which are likely to live through till well into the spring.

Outdoor Wintering

H. W. Jones, Bedford, Que.

Bees wintered out of doors require to be warmly packed in some light, dry, porous substance, which will readily dry out when damp, and which will allow vaporized moisture to pass readily through it. Dry leaves, maple are the very best, make the best of packing for the winter, and any quantity of leaves can be obtained in the fall after they are on the ground. The hives are placed singly into an outside case some four inches larger on all four sides than the size of the hive itself and with about ten inches of space on top. The bottom of the box should be covered a couple of inches deep with leaves and the hive placed thereon. To provide for an entrance, a small box with open sides leads from the entrance of the hive proper to the outside. The hive is then packed solidly in leaves on four sides and on top for a depth of ten inches or more; or instead of packing the top in leaves a big bag of course shavings seven or eight inches in depth can be used. A sloping cover goes over all.

This is one method of outdoor wintering that is successful. Another plan that is coming to the front is what is known as the "tenement" hive. The principle is precisely the same, except that four hives are placed back to back and side by side in a case built large enough to allow four inches of space all around the outside of the group. This last method economizes on wintering cases and is consequently cheaper to undertake.

Although I have no foul brood in my bee yard, I believe that prevention is better than cure, and intend to Italianize all my colonies.—R. McLaughlin, Kenmore, Ont.

The Canadian Horticulturist

COMBINED WITH

THE CANADIAN HORTICULTURIST AND BEEKEEPER

With which has been incorporated
The Canadian Bee Journal.

Published by The Horticultural
Publishing Company, Limited
PETERBORO, ONTARIO

H. BRONSON COWAN Managing Director

The Only Magazines in Their Field in the
Dominion

OFFICIAL ORGANS OF THE ONTARIO AND QUEBEC
FRUIT GROWERS' ASSOCIATIONS
AND OF THE ONTARIO AND NEW BRUNSWICK
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1. The Canadian Horticulturist is published in two editions on the 25th day of the month preceding date of issue. The first edition is known as The Canadian Horticulturist. It is devoted exclusively to the horticultural interests of Canada. The second edition is known as The Canadian Horticulturist and Beekeeper. In this edition several pages of matter appearing in the first issue are replaced by an equal number of pages of matter relating to the beekeeping interests of Canada.

2. Subscription price of The Canadian Horticulturist in Canada and Great Britain, 60 cents a year; two years, \$1.00, and of The Canadian Horticulturist and Beekeeper, \$1.00 a year. For United States and local subscriptions in Peterboro (not called for at the Post Office), 25 cents extra a year, including postage.

3. Remittances should be made by Post Office or Express Money Order, or Registered Letter.

4. The Law is that subscribers to newspapers are held responsible until all arrearages are paid and their paper ordered to be discontinued.

5. Change of Address—When a change of address is ordered, both the old and the new addresses must be given.

6. Advertising rates, \$1.40 an inch. Copy received up to the 20th. Address all advertising correspondence and copy to our Advertising Manager, Peterboro, Ont.

CIRCULATION STATEMENT

The following is a sworn statement of the net paid circulation of The Canadian Horticulturist for the year ending with December, 1913. The figures given are exclusive of samples and spoiled copies. Most months, including the sample copies, from 13,000 to 15,000 copies of The Canadian Horticulturist are mailed to people known to be interested in the growing of fruits, flowers or vegetables.

January, 1913	.....11,570	August, 1913	.....12,675
February, 1913	.....11,557	September, 1913	.....13,729
March, 1913	.....11,209	October, 1913	.....13,778
April, 1913	.....11,970	November, 1913	.....12,967
May, 191312,368	December, 191313,233
June, 191312,618		
July, 191312,625	Total150,293

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Sworn detailed statements will be mailed upon application.

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Rogues shall not ply their trade at the expense of our subscribers, who are our friends, through the medium of these columns; but we shall not attempt to adjust trifling disputes between subscribers and honourable business men who advertise, nor pay the debts of honest bankrupts.

Communications should be addressed

THE CANADIAN HORTICULTURIST,
PETERBORO, ONT.

Some British Columbia Problems

Garden Apiary, North Vancouver, B. C.

TWO items of interest to beekeepers which are touched on but little in "The Beekeeper" and other journals devoted to our interests are,—The awards for honey and apiarian products at the fall fairs, and the foul brood laws of British Columbia. In regard to the first of these, I have seen occasional notes from Ontario, and gather that things are not just satisfactory there. They certainly are not here.

The North Vancouver exhibition seems to make a specialty of poultry, offering prizes of about seven hundred dollars, as against one dollar and seventy-five cents for butter and three dollars for honey. Now this is certainly not an agricultural district, and most of our residents are, perforce, contented with a fifty foot lot, and so one would not look for much encouragement for the butter-making art. Still the gardens have possibilities and folks can—many do—keep a few fowl, and this is rightly encouraged. Why not encourage the beekeepers, too? A hive of bees adds enormously to the interest and it can be made to add much to the appearance of the garden. It occupies a very small space and needs but little attention, compared with a hen, and may bring in double or treble the returns.

Vancouver has an exhibition of a different stamp, offering such prizes as the following,—Cattle, \$5,030; poultry and pet stock, \$2,559; fruit, \$1,007; garden vegetables, \$323; floriculture, \$393; log cutting and sawing contest, \$275; honey and apiarian products, \$101. In this last class prizes are offered amongst other items for fifty pounds of extracted "granulated" in glass, 1st prize \$10; 2nd prize, \$5; 3rd prize, \$2; and again for the best display of 200 pounds comb and extracted suitable for a grocer's window, 1st prize, \$10; 2nd prize, \$5 and 3rd prize, \$3.

The first of these classes means carrying over fifty pounds of honey from the previous year, as our clover and fireweed honey does not granulate until November or later, especially if kept in a warm place, and fifty pounds of granulated honey would not sell if new honey could be had. In the second instance the foolishness of such an award will be apparent when I tell you that one of the rules is that "No first prize money will be paid if there is no competition; the winner of first prize taking second money."

FOUL BROOD LAWS

The foul brood laws of British Columbia empower the inspectors to destroy bees, hives and honey in any and every proved case. This would mean a loss of anywhere from three to thirty dollars a hive. Why not encourage beekeepers by giving half value for all colonies destroyed—always provided they had been run on modern lines—just as is done when cows are tested and condemned for tuberculosis, or horses for glanders?

We are told that the amounts involved in an apiary are so small as to be of no consequence. This is not correct. In running for extracted honey one wants at least three stories for each hive; these with their furnishings will cost here about twelve dollars. The bees would be worth about five dollars, and the honey might run up to from ten to twenty dollars in a good season thus bringing the values up to thirty dollars a hive. Even if the hive were condemned earlier in the season that season's profits are gone and the value of the forty or fifty pounds of honey on which the bees

wintered, is a total loss. Again, if foul brood gets into an apiary, it does not as a rule stop at one hive, and so it is apparent that the apiarist is in a bad way.

The truth is, our foul brood laws were made some years ago when there was no disease in the province, with the object of keeping the disease out. Now, however, things have changed, and Vancouver district and the Fraser Valley would seem to be infected and the chances of completely eradicating it are small more especially as there are many stray swarms in the woods.

Again we are told that a diseased hive is doomed anyway—so is a horse with glanders or a tubercular cow but each may produce some profit for the owner for a certain period as also may an infected hive of bees the bad point being that each of these cases will be apt to spread the disease unless quickly dealt with.

The question arises,—How can the beekeepers who are as a body numerically small influence the government to pass remedial legislation?

Beekeeping in New Brunswick

J. B. Daggett, Secretary for Agriculture

The importance of the bee industry has not been recognized in this province to any degree. Here and there, scattered over the province, a few hives of bees have been kept for a great number of years.

During the past ten years, however, the bee industry has been engaging the special attention of a few of our farmers, not more than half a dozen in number. In two or three cases these have met with decided success, the quality of the products being excellent and finding a ready market. At present the province is importing several car-loads of bee products annually. Thus it will be seen there is a market for a much larger amount than the province is producing. With the increased interest and development in fruit raising throughout the province, there has naturally been an increase of interest in bee keeping.

In 1913 Mr. H. B. Durost was directed to give as much time as convenient, with other duties, to the encouragement of the bee industry, and a sum of money from the Dominion subsidy was set aside to be expended by Mr. Durost in educational work. At the provincial exhibition held that year at Fredericton, a space was devoted to bee interests. Demonstrations were given daily in the handling of bees and proper care of bee products. No feature of the exhibition was more appreciated by the farmers in attendance than this. Lectures were given daily by the superintendent. Following the provincial exhibition, the equipment used at Fredericton was taken to the exhibition held at Chatham and demonstrations given along the same lines as at Fredericton. Mr. Durost also visited a number of the smaller county and parish exhibitions, judging bee products, meeting with beekeepers and giving all the information possible.

A Beekeepers' Association was formed for the province in September, 1913, with the object of cooperation in the buying of necessary supplies and the marketing of their products. An arrangement has been completed by which the supplies are bought direct from the manufacturers and are sold to the members of the association at cost.

Many a young fellow has called his best girl "honey" only to be stung in the end.

Ontario Beekeepers' Annual Convention

THE annual convention of the Ontario Beekeepers' Association will be held in the York County Council Chambers, 57 Adelaide street East, Toronto, Wednesday to Friday, November 11th, 12th and 13th, 1914. All beekeepers in Ontario and those from other provinces who can make it convenient, are invited to attend. The executive also extends a cordial invitation to beekeepers of the adjoining States of the Union to be present.

It will be seen by the program that there are not as many set subjects this year as usual. It has been found that the programs have been too full to give time for discussions, and important questions in the question box have had to be left over to be answered in the bee journal. The effort of this year is to give more time than usual to the question box which forms such an important part of the program of any beekeepers' convention.

The following is the program,—

Tuesday Evening, Nov. 10th, 7.30 p.m.—Meeting of officers and directors.

Wednesday Morning, Nov. 11th, 9.30 a.m.—Minutes, Morley Pettit, Guelph, Ontario, Secretary-Treasurer; President's address, J. L. Byer, Markham, Ont.; 1st Vice-President's reply, F. W. Krouse, Guelph, Ont.; 2nd Vice-President's reply, James Armstrong, Cheapside, Ont.; Experiences of

the season of 1914, O. L. Hershiser, Kenmore, N.Y.; discussion, John A. Lunn, Fingal, Ont.

Wednesday Afternoon, 2 p.m.—"Specializing in Beekeeping, its Advantages and Disadvantages," W. A. Chrysler, Chatham, Ont.; discussion, F. W. Krouse, Guelph, Ont.; "Report of Apiary Inspection for the Season," Morley Pettit, Guelph, Ont.; John A. McKinnon, St. Eugene, Ont.

Thursday Morning, Nov. 12th, 9.30 a.m.—"Putting up a Honey Exhibit," H. G. Sibbald, Toronto, Ont.; Question Box, J. F. Dunn, Ridgeway, Ont.

Thursday Afternoon 2 p.m.—Address, W. Bert Roadhouse, Deputy Minister of Agriculture, Toronto, Ont.; Election of Officers; Reports, Directors, Treasurer, Honey Crop Committee; Representatives to Exhibitions.

Friday Morning, Nov. 13th, 9.30 a.m.—"Sweet Clover, its Culture and Uses," Wm. Linton, Aurora, Ont.; "Good Combs and How to Obtain Them," George F. Kingsmill, B.S.A., Assistant Apiarist, Central Experimental Farm, Ottawa; Discussion, J. D. Evans, Islington, Ont.; Question Box, Wm. Couse, Streetsville, Ont.

Friday Afternoon, 2 p.m.—"Simple Method of Rearing and Introducing Queens," F. W. L. Sladen, Apiarist, Central Experimental Farm, Ottawa; Unfinished Business.

An Old Beekeeper's Methods

THE following interesting letter describing his methods was sent by Mr. G. Guyer, of Port Elgin, Ont., to Mr. Morley Pettit, of Guelph:

"I do not feel inclined to try any experiment with my bees, outside of my own experiments. I have been experimenting on bees over thirty years, and am pounding away at it yet. Most of my thought, aim and study has been to put up my bees in proper form for the winter and bring them through the winter and the spring good and strong. Now, my dear friend, you know we are in a cold northern country, long winters and short summers, and we must educate ourselves to bring our bees through these long winters and keep down the spring dwindle and lose no bees but the old ones, as their time will be up anyway.

"I don't bother myself much about the summer management, nor will I until I get the winter and spring problem to perfection. I believe I have it down pretty fine now. I can go out every day in the winter to my bee clamps and see if they have plenty of stores and are comfortable. If they need more stores I can give it and in the cellar the same. I did this last winter. I have tried a bee cellar underground, a bee house with a two foot double wall filled with dry sawdust, a cellar under the house, double-walled hives and the regular bee clamp, and so far as my experience goes outside wintering is the best. It takes so much lumber, however, a great many object to it.

"I do not keep many bees, as I have a poor locality for the bees, but I sell bees all the time in the spring and summer when they swarm. I use a good deal of bee candy for wintering. I wintered a colony with candy alone about twenty years ago outside in the orchard, and it came out well. It was not packed outside of the hive, but had a four-inch empty wall all around it and the sand banked up around the outside box about six inches high and

a good tight cover on the outside box, but you may be sure I piled on lots of candy and plenty of old bran sacks on top of the candy. Of course, I do not recommend that method. That was only an experiment, and I only did it once; but I have great faith in bee candy, also feeding syrup fall and spring.

"I feed in the open air fall and spring both syrup and artificial pollen. They need pollen until the willows are out. If they are fed outside they will not dwindle down half so much. My bees will fly six rods and get their load and make their hive every time, where if they had to fly around and hunt for honey or pollen half of them would never get back. Of course, I keep a sealer feeder in those that need it, but you know the nature is for the bee to fly, and if you feed outside, your queen will start to lay at once and keep right on, and the bees soon will be roaring and there will be no robbing. My bees know their feeding place and they are there as soon as the weather is fit, and you may be sure their syrup and their pollen are there, too; but as soon as fruit bloom, I stop feeding and put on my top stories. If you have a close neighbor beekeeper this is hard to do, but if you can get your neighbor to do the same, your bees will not mix any more than your horses or cattle that are fed well at home.

"Now, my dear friend, I hope that you will not jump on me for some of my strange hobbies. I have gone through the mill and feel like doing all I can to help the work along. At the same time, I cannot do very much, as I am a very old man. If there are any young beginners who would like to try open air feeding, they must not start monkeying with corn cobs or cork shavings. There is an old beekeeper, whose name is G. Guyer. His address is Port Elgin, Ontario. Just send to him for a sample open air feeder. It is so simple any old woman can make it. It is as easy made as rolling off a log. G. Guyer is

the inventor, and has used it for twenty years. The sample will cost nothing, and the directions will also go with it."

Fined for Adulterated Honey

In the Victoria, B.C., Police Court some time ago, James Haynes was fined five dollars for selling adulterated honey. The following report of the case was published in one of the daily papers:

The prosecution was brought by the health department of the city. City Analyst Birch put in a statement showing that he had analyzed two samples bought at Haynes' store by Food Inspector Howe, and had found them deficient in invert sugar and containing more cane sugar than is allowed by the standard set by the statute of the Dominion. Some other honey brought into court from the same source was found to be strictly pure.

By the requirements of the Dominion statute honey must contain not less than sixty per cent. of invert sugar and not more than eight per cent. of cane sugar. City Analyst Birch explained that absolutely pure honey would contain no cane at all, but that sometimes the bee in going about lights on pieces of sugar in syrup, and thus gets some of the product of the cane. He stated that normal honey contains about seventy-five per cent. of invert, and about three per cent. of cane sugar.

The first sample inspected, Mr. Birch said, contained only 30.8 per cent. of invert sugar and 40.6 per cent. of cane sugar. The second sample had in it 31.3 per cent. of invert sugar and 39.9 per cent. of cane sugar. Both were obviously very much below standard.

James Haynes, through his counsel, Alexis Martin, pleaded guilty to the charge, but explained that he had got the honey from Australia several years ago, and that naturally he could not tell by looking at it what its analysis would turn out.

Amid laughter, Mr. Haynes stated that he had had several complaints about his honey, but they had been in regard to that which the prosecution had deemed to be pure. About the honey which did not come up to standard he had never had a single complaint.

The Magistrate: "It looks as if people do not know good honey when they get it."

Mr. Haynes denied that he had ever mixed sugar and water with pure honey. He had only put up for sale that which had been purchased by him from different sources. There was no means, his counsel stated, whereby an honest merchant might know whether or not the honey bought was pure.

Magistrate Jay fined Mr. Haynes the minimum of five dollars, but warned him that should another conviction on the same line be recorded against him, the minimum was two hundred dollars.

Seven Feet of Honey

A bee tree located some time ago in the sugar bush of James Black of Everton, Wellington County, Ont., was cut down, and the bees successfully hived. The tree, a large maple, was opened some twenty-five feet from the stump, and found to contain over seven feet of beautiful honey in the comb, about twelve inches in diameter, and nearly one hundred and fifty pounds in weight. It is only a short time since there was located and tapped a standing basswood tree in Erin Township, with a good find of honey, the colony in this case being of the thoroughbred Italian species. —Brockville Times.

Fruit Conditions in Winnipeg and the West*

Prof. F. W. Broderick, Agricultural College, Winnipeg, Man.

SHIPPER of fruit, and more particularly Canadian fruit, are looking more intently to the Canadian west as an outlet for their products. The Canadian west must continue to be a customer for the fruits of British Columbia, Ontario, Quebec, and Nova Scotia, and a customer whose wants will go on increasing with the growth of population in Manitoba, Saskatchewan, and Alberta.

There is a large trade of fruit to these western provinces. To a considerable extent it will depend upon the shippers themselves as to how this trade is retained and increased. Fruit is every year becoming a commodity of greater necessity in the dietary of western households. The many uses to which fruit, cooked and uncooked, may be put is causing it to be regarded as an article of necessity rather than a luxury.

To give an idea of the immense amount of fruit received into Winnipeg, I might quote from the figures of the Chief Fruit Inspector for Winnipeg. According to his figures there were received into Winnipeg the following quantities of fruit during the years 1913 and 1914:

ONTARIO

540 cars apples	Approx. 83,200 bbs.
30 cars apples	18,000 boxes
107 cars grapes	267,500 bskts.
139 cars grapes, peaches, plums, tomatoes, apples	347,500 bskts.

BRITISH COLUMBIA

32 cars apples	19,200 boxes
12 cars crab apples	7,200 boxes

NOVA SCOTIA

2 cars apples	400 bbs.
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IMPORTED

116 cars Am. apples	20,880 bbs.
145 cars Am. apples	87,000 boxes
24 cars peaches, plums, cherries, apricots	22,180 cts.
10 cars pears	4,500 boxes
26 cars strawberries	12,845 cts. qt.
10 cars strawberries	8,154 cts. pts.
7 freezers and 15 cases do.	740 qts.
295 cases do. express	7,720 pts.
14 cars tomatoes	8,642 cts.

ON HAND DECEMBER 31ST, 1913

3,152 barrels.	15,685 boxes apples.
Fruit received in Winnipeg to August 10, 1914.	

EXPRESS UNITED STATES

3,000 pints strawberries.

BRITISH COLUMBIA

500 packages cherries—Express
1 car apples.

IMPORTED

37 cars strawberries—pints.
15 cars strawberries—quarts.
30 cars tomatoes—crates.
35 cars Washington apples—boxes.
5 cars Am. apples—bbs.
65 cars Cal. and Wash. small fruits.
25 cars raspberries and loganberries—pints.
10 cars blackberries.

ONTARIO

25 cars barrel apples.
18 cars basket fruits and tomatoes.
2000 packages tomatoes, etc., by express.

A large proportion of these goods was consumed in Winnipeg, and the balance was shipped to points farther west. Winnipeg is very largely the distributing point for fruits coming from the east and south. In addition to the quantities mentioned, considerable quantities are shipped to other points in the prairie provinces from British Columbia and the Pacific Coast states.

Fruit to-day is in great demand in the Canadian west, and shippers will find a ready sale if their goods are put on the market in attractive form. The users of fruit are every year increasing, and many who a few years ago regarded fruit as a

table luxury are now coming to regard it as an article of necessity.

There are several factors which will do much to widen the sale of fruit. Among the more important of these are: (1) Placing the goods on the market in prime condition; (2) using an attractive and convenient package; (3) getting the goods in the hands of the consumer as quickly as possible after arrival; (4) regulating the supply so that goods may be obtained by the consumer at a reasonable price.

The condition of the fruit on its arrival will depend to a large extent on the way the fruit goes into the car and the way it is handled during transshipment. Pre-cooling of fruits, particularly of tender fruits, judging from the results which have been obtained from experimental shipments, will do a great deal to improve the quality of these fruits on arrival. By removing the natural heat from the fruit before it goes into the car it will carry much better during shipment and stand up for a much greater length of time after it is removed from the car on arrival. Pre-cooling with long distance shipments of tender fruits will do a great deal to bring the goods on the market in prime condition.

Another point affecting the condition of the fruit on arrival is the character of the package in which the fruit is shipped. The main thing in this connection is that the package be firmly made in order that goods will not be crushed during transshipment, and probably the most important of all that the package be of moderate size to limit the amount of fruit in each package.

OVERLOADING

Many carloads of fruit coming into the west to-day are overloaded. This, of course, is done to get advantage of the lower freight rates. If the same rate could be obtained from eastern and western points for a 15,000 pound car that is being paid to-day for a 20,000 to 24,000 pound apple car, a great shift would be made to ensure the safe arrival of tender fruits. Cars frequently come into our western markets overloaded, and if there has been any defect in icing en route there is considerable waste as a result.

Much of the success of shipment depends upon the way the goods are placed in the car. The placing in of false floors, proper spacing in the case of box packages, leaving an open space in the centre of the car, and proper bracing, are points which have been introduced to good advantage in long distance shipments into Winnipeg. The main factor in long distance shipments, of course, is free circulation of air about the fruit. To ensure this the false floor should be at least four inches from the floor, and the goods properly spaced. In shipments sent out during summer months, shippers should take the additional precaution of having the car well iced and seeing that the drain pipes are properly opened and that the waste water has a free escape.

For winter shipments of apples, the use of false sides, as well as false doors, would do a great deal to ensure that the goods will come through in good condition. As an additional precaution in late shipments, shippers would do well to see that the drain pipes are plugged and that the plugs are put in on top of the car.

THE PACKAGE

In connection with the second point, that is an attractive and convenient package, a great deal could be said. We hear a great

deal to-day about the box as the most suitable package, and from the returns of shipments into Winnipeg of goods from British Columbia and the Pacific Coast states, it is growing in popularity there. From many standpoints the box is an ideal package—neat, compact, uniform, and a desirable package for loading cars. Its uniformity makes it a desirable package for the dealer to handle and tends to encourage its popularity. It is an ideal package for certain conditions, but it cannot be said that there is not a strong demand for certain classes of goods in baskets and barrels.

From return of shipments during recent years to the west from the eastern provinces the barrel and basket seem still to be popular packages. Western markets will continue to use large quantities of basket fruit providing it is well assorted and attractively put up. The six-quart basket, from the standpoint of carriage during shipment and suitability for market purposes, seems to be the most desirable package. Cars of properly loaded basket fruit arrive on our markets in excellent condition, showing that the basket is a good package from the standpoint of carriage.

As a market package it is popular for the reason that it is convenient to handle and holds a suitable amount of fruit to be readily saleable. Eastern shippers have an exclusive market in basket fruit and should make a specialty of it.

THE USE OF THE BARREL

The barrel has come in for some criticism as a package for the shipment of the hardier late fruits on account of its size and the difficulty with which it is handled. There is a demand in the west for barrel apples. As figures will indicate the larger shipments of apples from the eastern provinces are in barrels. Many people living in the west are accustomed to buying their apples in barrels, and will continue to demand them put up in this way. In order that this barrel-apple trade be retained and enlarged, shippers will have to keep a uniformly high standard of packing, having their goods well graded and carefully marked.

Probably the greatest problem before the shipper and dealer to-day is the question of distribution. Irregularity in shipments, with the gluts which follow, results in a period of low prices, with a subsequent loss to the shipper. If the question of effective distribution is ever to be settled, there must be a getting together of shippers and a scheme marked out whereby a central distributing agency will be established and goods will be distributed to different points as the market demands.

Western markets will handle considerable amounts of fruit during the entire season, providing it is put on the markets with regularity. This is particularly true of the apple trade. Nova Scotia, Quebec, Ontario, and British Columbia are now becoming heavy producers of apples, and a great many of these apples are finding their way into our western markets. If these apples which are handled during a short season could be properly distributed, the producer would receive a relatively higher price for his goods, and the range of consumption would be considerably extended.

In summing up the situation from a western standpoint, it could be said that the success of the Canadian fruit trade will depend largely on good shipping facilities and a careful handling of a perishable product; neat, attractive, saleable packages; uniform and systematic grading, and a regular and consistent distribution.

*A paper read at the Dominion Fruit Conference held in Grimsby, Ont., Sept. 24, 1914.

How Nova Scotia Growers Have Overcome Trade Conditions

By A. E. Adams, Berwick, N. S.

WHILE Nova Scotia depends more on the English market as an outlet for her fruit products than any other fruit producing district on this side of the Atlantic, it is curious that she appears to be the least affected by the present unfortunate war. While other districts seem to be panic stricken, and while thousands of barrels of good apples will never be packed and marketed, Nova Scotia's apple "business is carried on as usual." The cause of this splendid confidence is to be found in its cooperative organizations working through their Central Association, the United Fruit Companies of Nova Scotia Limited.

During the first nineteen days of its operations this year (from September 11th to 30th) this organization shipped 70,000 barrels of apples and marketed them so well that good returns were obtained for the whole. In addition to this over \$70,000 was distributed to its members by October 3rd as an advance payment for fruit shipped. That is an accomplishment that the writer feels safe in stating has not been equalled by any similar organization in the Western Hemisphere.

The manner in which this organization met the threatened increase of ocean freight rates by the international combine is now a matter of history but its other transportation operations are not perhaps so well known. Its western shipments were handled with a despatch that establishes a record. The United Fruit Companies is never content to do things as others do them, and therefore when it had apples to

ship west it never considered for a moment the old method of shipping cars as they were ready and then keeping tracers after them.

It adopted other methods. On September 11th it started twenty-nine of its forty-seven warehouses packing Gravensteins. On September 12th it started a special train of twenty-nine cars from the Valley to Winnipeg.

Arrangements had been made with the C.P.R. for especially fast haulage for that train. The C.P.R. sent special men to various divisional points where delay was likely to occur, to prevent it. It was 5 o'clock in the afternoon when that train left the Valley, at 8.30 p.m. the next day it passed St. John, having negotiated the weakest link in the chain (the transference from the D.A.R. to the I.C.R. at Truro, and the divisional point at Moncton and delivery to the C.P.R. at St. John) without delay.

Engines were waiting at every divisional point to pick up this special, every divisional point passed wired advices to headquarters, and at three o'clock p.m. on the 19th, it pulled into Winnipeg. On the 15th a similar train was started with similar results and later in the week yet a third train. This splendid service not only reflects the greatest credit on the United Fruit Companies' methods but serves to demonstrate what excellent service the C.P.R. are prepared to give when shippers will co-operate with them.

The same number of cars shipped on different days could not have made Winnipeg

Douglas Gardens

OAKVILLE, ONT.

PAEONIES

and many other

Hardy Herbaceous Perennials

may be successfully planted any time before the ground becomes hard frozen.

Belated orders for such will be promptly filled and forwarded.

Fall Planting List, 1914, will be sent on request

JOHN CAVERS

Get One Barrel More per Tree

That's what a good sprayer will add to your fruit crop yearly.

Over 400,000 fruit growers and orchardists are proving this fact every season with Goulds Sprayers.

Because Goulds Sprayers apply the spray in such a uniform way that every leaf, every twig is saturated; every crevice is treated. The proper amount of solution is used and no more. This saving in mixture alone pays for a Goulds Sprayer over and over again. Made in 50 sizes and styles. Guaranteed to give absolute satisfaction.

**GOULDS
RELIABLE
SPRAYERS**

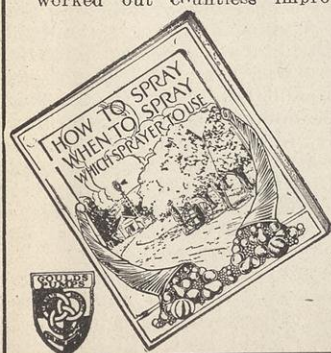
are designed by engineers whose training and experience have worked out countless improvements. Don't fool with out-of-date sprayers. Their waste eats up many times what a Goulds Reliable Sprayer would have cost you first.

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Brimful of practical spray facts. Tells what mixtures to use, what amount and how to apply them, proper time to spray, how to conquer insects and fungous growths of all sorts. Sent Free. Write for it. (21)

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Largest Mfrs. of Pumps for Every Purpose



APPLE REFRIGERATION

Finest Frost-Proof and Refrigeration Plant in Central Ontario. Stop-off Privileges on all Railway Lines.

RATES:

Frost-Proof, 10c. for Season.

Refrigeration, 10c. per Month, or 25c. for Season.

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

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ENFIELD, MIDDLESEX, ENG.

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THE RAIN MACHINE

Write for six books on indoor and outdoor irrigation.

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TWICE THE LIGHT
ON HALF THE OIL

We don't ask you to pay us a cent until you have used this wonderful modern light in your own home ten days, then you may return it at our expense if not perfectly satisfied. You can't possibly lose a cent. We want to prove to you that it makes an ordinary oil lamp look like a candle; beats electric, gasoline or acetylene. Lights and is put out like old oil lamp. Tests at a number of leading Universities show it

Burns 70 Hours on One Gallon common coal oil, no odor, smoke or noise, simple, clean, won't explode. Three million people already enjoying this powerful, white, steady light, nearest to sunlight. Guaranteed.

\$1,000.00 Reward

will be given to the person who shows us an oil lamp equal to the new Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge if there were the slightest doubt as to the merits of the Aladdin? **GET ONE FREE.** We want one user in each locality to whom we can refer customers. To that person we have a special introductory offer to make, under which one lamp is given free. Write quick for our 10-Day Absolutely Free Trial Proposition and learn how to get one free.

MANTLE LAMP CO., 408 Aladdin Bldg., Montreal and Winnipeg, Canada
Largest Manufacturers and Distributors of Coal Oil Mantle Lamps in the World

We Want Men With Rigs or Autos to Deliver

the ALADDIN on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 34 lamps out of 81 calls." Thousands who are coining money endorse the Aladdin just as strongly.

No Money Required
We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in uncultivated territory.

in less than 10 days and possibly 13 or 14 days. The effect on the fruit in box cars during the hot fall weather of these extra days is too well known to need description, and the saving in value of perishable products by quick transportation and expeditious handling is beyond estimation.

With its transatlantic shipments the United Fruit Companies has also done much. This year great activity is being displayed in the direction of chartering special fruit boats.

At the present moment the Central Association has under charter the following steamships:

S.S. "Boston," now on way to Glasgow.

S.S. "Viator," destination to be settled later.

S.S. "Katie," destination to be settled later.

S.S. "Annetta," destination to be settled later.

S.S. "Amelia," destination to be settled later.

S.S. "Bella," destination to be settled later.

S.S. "Vincenzo Di Georgio," destination to be settled later.

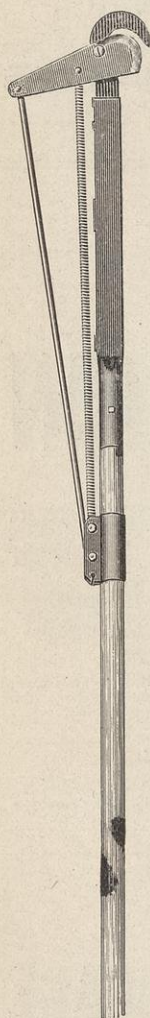
These steamers will be used by the United Fruit Companies to place cargoes of fruit on markets that require supplies when the regular lines will not be available, a part of the system of market regulating practised by the Central and which was fully explained in The Canadian Horticulturist some time back.

The schooner "Silver Leaf" is also under charter to The United Fruit Companies for use in the potato trade.

New Brunswick

This province is awaking to the fact that it is very favorably situated for the production of such fruits as apples, strawberries, raspberries and cranberries. This is especially true of the southern portion of the province, where the proximity of the sea ameliorates the severity of the winter, and where the more tender varieties of plums, pears and cherries have been grown. During the past four years one hundred thousand young apple trees have been set out in the province.

The annual report of the provincial horticulturist, Mr. A. G. Turney, which has been issued recently, shows that the operations of the illustration orchards have proved successful, as they have been operated at a profit. Part of an orchard in Lower Cloverdale, Albert County, was taken over in 1911, and one hundred and fifty-two dollars was expended on it in spraying, plowing and fertilizing. The harvesting and marketing of the crop, and six per cent. interest on the value of the orchard, amounted to five hundred and sixty-nine dollars more, a total of seven hundred and twenty-one dollars. The net proceeds of the sale were one thousand two hundred and sixty-eight dollars, showing a clear profit of five hundred and forty-six dollars, after paying interest on the value of the property and all expenses. In 1912 the expenditure was four hundred and sixty-two dollars, and the revenue seven hundred and three dollars, showing a profit of two hundred and forty-one dollars. In 1913 the expenditure was three hundred and four dollars, and the revenue six hundred and eighteen dollars, showing a profit of three hundred and fourteen dollars, or one hundred and four dollars an acre. On the remaining four acres of the orchard the owner made a profit of seven hundred and two dollars in 1911, one hundred and twenty-four dollars in 1912, and five hundred and ninety-four dollars in 1913.



TREE PRUNERS

ALL PATENTED

BEST IN QUALITY
EASY TO OPERATE

THE STRONGEST MADE



Happy Thought



Orchard King

Sold by all good Hardware Stores

MADE ONLY BY

TAYLOR-FORBES COMPANY

Limited

Kansas

GUELPH, ONTARIO

Fruit Packages and Government Regulations*

P. J. Carey, Dominion Fruit Division, Toronto, Ont.

SECTION 326 of the Inspection and Sales Act allows in addition to the two specified sizes any size of berry box, providing that the word "short" be stamped on the side of the box. This has been shown to be very unsatisfactory to all concerned inasmuch as it has encouraged placing on the market many different sizes. It has also been shown that any designation stamped on the side of a package means nothing to the consumer generally and only gives an opportunity to the unscrupulous dealer or grower to take undue advantage of the consumer.

It seems advisable then that two sizes and two sizes only be allowed by law, full size and half size. The present sizes are four-fifths of a quart and two-fifths of a quart. The wholesale men say that the sizes should be a full quart and a pint. The growers say that the four-fifths and two-fifths sizes are good enough for them.

BASKETS

The law as it stands specifies four sizes of basket, viz., fifteen quarts, eleven quarts, six quarts, and two and two-fifths quarts, but it also provides that any size may be used if capacity of basket is stamped on the basket. As in the case of berry boxes, but to a greater extent, this has resulted in the placing on the market of all sizes of baskets. The stamping on the side of baskets is often very indistinct, and in any case means nothing to the consumer, who is entirely at sea as to what constitutes the lawful size. The fifteen quart size and the two and two-fifth size are very little used, the eleven quart and the six quart sizes fill the bill for the great bulk of basket fruit. The wholesale trade seems unanimous in recommending that the sizes between the six quart and the eleven quart be eliminated and a number are in favor of the smaller baskets being made one-half of the full size, that is five and one-half quarts.

It would seem desirable then that the two baskets for general use should be either eleven quarts and six quarts or eleven quarts and five and one-half quarts. In the case of large peaches, three tiers cannot be placed in an eleven quart basket, and some growers are using a nine-quart size, placing in two tiers. I submit that in all fairness to growers, dealers and consumers, if a special basket is allowed to hold three tiers of large peaches it should be of such a size as to still hold eleven quarts. Uniformity in sizes of packages should be a matter of first consideration.

STRENGTH OF PACKAGE

Many of the baskets on the market are very frail and poorly made, resulting in great losses to growers and handlers of fruit. It is desirable that the attention of manufacturers should be called to this and something recommended as to strength of package and number of nails used in making same.

PROPER FILLING OF BASKETS

Many complaints have been made by the trade generally of the practice of under-filling the baskets. It is not an uncommon occurrence to see baskets not more than two-thirds full. This is becoming a serious source of annoyance as well as loss to both the dealer and consumer. Inspectors have done what they could to discourage this practice, but of course have no jurisdiction to deal with the matter in the way of prosecutions. It is agreed by all branches of the trade that there should be some en-

*A statement submitted at the recent Dominion Fruit Conference in Grimsby, Ont.

actment by law in order to bring about the necessary improvement along the line of better filling of fruit packages. It seems desirable that a clause should be inserted in the Act requiring that all packages of fruit offered for sale should be properly and well filled, and in cases where there was evidence of slack filling of packages Inspectors would have the right to weigh or measure the contents of such packages in order to ascertain whether there was a violation. It is believed that the moral effect of such a law being in force would go a long way in correcting the trouble, and prosecutions would be few in number.

THE APPLE BOX

The Canadian apple box 10in. by 11in. by 20in., and the Western apple box have been well tried out side by side, both in the matter of packing and marketing, and there seems to be but little choice in the two boxes. Either one will fill the bill

PEAR BOXES

As the pear boxes used for export are only carriers and fruit does not reach the consumer in the original package, and as special boxes are used by the different shippers in order to insure the safe carrying of fruit, it would be difficult to fix a uniform pear box for both export and domestic trade, but it is desirable that a uniform pear box for domestic markets should be fixed by law. Whatever size of pear box is adopted the length and width should be the same as the apple box.

PEACH PACKAGES

Every attempt that has been made on the Toronto market at least to displace the basket by the introduction of any other style of peach package has failed, perhaps not on account of the superiority of the baskets, but because the dealer seems suspicious of any new package. So far, it seems to have been a costly experiment for the man who attempts to introduce a new fruit package.

Canadian Apples in South Africa

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

The Canadian apple is looked for in South Africa from early October to December 15, at the latest. After that date the South African fruit is on the market in large quantities.

The good reputation held by Canadian apples in this market received a decided setback last year owing to the arrival at this port of some badly graded Ben Davis apples, and a particularly poor lot of Golden Russets. It is unfortunate that these apples should be allowed space on a service that, owing to the time limit of the market, is limited to a capacity of fifteen thousand barrels at the most, and particularly when all that could be sent of the better fruit would find a ready market at top prices.

An inspection of the Canada-Cape steamers on arrival last year showed that all Canadian fruit sent on consignment was good fruit, well graded, properly packed, and made good prices. The fruit which was the cause of the trouble was purchased in Canada by South African dealers. The fruit did not sell well, with the result that the anticipated profit on the good name of Canadian apples was not realized, and it helped to keep down the bidding on the better fruit.

The apple which will meet with a good sale in South Africa is a hardy, well colored red apple, medium size, in one and two grades. Number three grade should not be shipped. The fruit must of course



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Plant our Top Notch FRUIT, SHADE and ORNAMENTAL TREES this Fall. EVERGREENS, SHRUBS, ROSES, VINES, BUSHES. Ask for Price List (No Agents) at Central Nurseries.

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

THIS WASHER MUST PAY FOR ITSELF

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

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

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

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

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

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

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

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

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

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

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

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

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 60 cents a week, send me 50c a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

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

Address me personally:
B. T. MORRIS, Mgr., 1900 Washer Co.,
357 Yonge Street, Toronto, Ont.
Factory: 79-81 Portland St., Toronto, Ont.





Members of the United Fruit Companies, Ltd., of Nova Scotia, as They Gathered During the Summer for Their Two Days' Annual Meeting at Berwick, N. S.

be well packed, sound and healthy in every way. Apples with scab or diseased in any way will not be allowed into the country.

During the short season for Canadian and American apples on this market, a great many thousand boxes of Washington apples are sold. One firm alone handled fourteen thousand boxes, which consisted for the most part of Wine Saps, Rome Beauties, Jonathans, Spitzenbergs, these varieties being very popular. It is claimed that these apples mature more quickly than eastern Canadian apples and for that reason they arrive here at the end of October in much better condition than eastern apples do at the end of November. If apples from the State of Washington can be marketed to such good advantage it would seem that British Columbia fruit should also find a ready market. One dealer stated in an interview, "There is no reason why we should not be buying all our apples from British Columbia instead of from Washington."

The British Columbia packers know the conditions under which Washington fruit is packed for export, and the kinds mentioned will show them at once which of their own fruit would find a sale here. Some trial consignments to South Africa would surely create a demand for the high grade British Columbia boxed apple, which would mean a permanent market. If arrangements can be made for space in the cold storage chambers on the Canada-Cape steamers from Montreal, the British Columbia apple should be shipped across Canada in refrigerator cars for immediate transfer to the steamer. In connection with possible consignments to South Africa, there is on file at the Department of Trade and Commerce, Ottawa a list of firms who would give every attention to consignments.

The imports of fresh apples and pears from Canada by New Zealand during the last fiscal year were over double those of the preceding year amounting to £15,167,

as compared with £7,293 in 1912-13. No other kinds of fruit were imported into New Zealand from Canada to any considerable extent.

Packages for marketing fruit should be procured in good time.

Liverpool Sales Organizations*

A. E. Adams, Sec'y, United Fruit Companies, Ltd.,
Berwick, N. S.

COOPERATION lessens considerably the cost of getting our products to the consumer. Let me give just one illustration of the terrific toll that is being taken out of the fruit of the unorganized growers. At our annual meeting, Mr. J. N. Chute reported on conditions in Liverpool as follows:

"Liverpool presents problems totally different and much more difficult than London. Here are organized forces that are really formidable. Their rules and regulations have been framed entirely in their own interests and at the expense of the shipper.

"There are three associations, the broker's, the importer's and the buyer's. It is of course obvious that none of these associations look after the interests of the shippers. The various organizations are composed as follows: The Brokers' Association consist of some seven brokerage firms who own the building, and who being established for a great many years, consider they have a monopoly of the fruit auctioneer business of Liverpool. They are very wealthy men and are willing to advance any amount of money to responsible men who can secure apples for them. They make a flat charge of two per cent. on gross sales and fourteen cents a barrel.

"The Importers' Association is composed of men like Simon Shuttleworth, Pritchards, Hamilton and others, who go out to various countries and secure fruit. In consideration of the fact that the brokers advance the money with which these men conduct their business they are compelled to put all their fruit through the sales room, the

*Extract from a paper read at the last annual convention of the Nova Scotia Fruit Growers' Association.

Last Year's Prices for Nova Scotia's Fruit

The United Fruit Companies of Nova Scotia Ltd. obtained the following prices last year for the fruit handled for their members. The cost of handling the fruit by the Company was only four cents a barrel:

	No. 1	No. 2	Coop. No. 2	No. 3
Gravensteins, general average	\$3 26	\$2 83	\$1 50	\$1 11
Gravensteins, complete average	3 36	2 81	1 98	1 12
Blenheims	2 52	2 01	1 50	1 02
Ontario	2 22	1 75	1 20	1 15
Kings	2 84	2 32	2 10	1 35
Ribstons	2 03	1 75	1 00	70
Emperors, general average	2 60	2 10	1 53	1 14
Emperors, complete average	2 81	2 43	1 53	1 14
Wolf Rivers, general average	2 56	2 10	1 20	1 08
Wolf Rivers complete average	2 67	2 10	1 20	1 16
Pewaukee	2 20	1 70	1 68	1 30
Bishop Pippins	3 15	2 83	2 02	1 25
Greenings	3 00	2 42	1 65	1 31
Wealthy, general average	3 27	2 20	1 72	1 21
Wealthy, complete average	3 57	2 80	2 00	1 15
Wagners	3 05	2 42	1 72	1 25
Seeks	2 87	2 30	2 05	1 60
Talman Sweets	2 20	1 80	1 26	1 18
Pomme Gris	3 50	2 60	1 63	1 60
Red Starks	3 40	2 30	2 10	1 80
Starks	3 60	3 02	2 35	1 75
Mann	2 76	2 16	1 90	1 47
Vendevere	2 70	2 14	1 80	1 30
Golden Russets	4 60	3 80	3 10	2 55
Baldwins	3 51	2 80	2 20	1 60
Northern Spys	8 50	2 85	2 15	1 40
Red Russets	3 21	2 61	2 10	1 70
Fallowaters	3 10	2 54	2 00	1 60
Ganos	3 60	3 02	2 90	2 37
Ben Davis	3 51	2 83	2 43	1 73
Salomes	3 75	3 02	2 93	2 20
Coopers Market	4 00	3 50	3 30	2 60
Nonpareils	4 15	3 60	2 73	2 60

brokers in turn agreeing not to sell for anyone for a less commission than the brokers charge, viz., five per cent., plus eighteen cents a barrel, all the importers agreeing to abide by the same terms.

The Buyers' Association is composed of the wholesale men who buy the fruit in the sales room. These men contended in their own interests that no one but the original members should be admitted to the sales room without being elected by their association. Firms that are heavy buyers have repeatedly tried to get in but without avail. This is naturally so when these people are charging one to two shillings a barrel for buying. In consideration of their having the monopoly of the room they agree not to buy in any other auction room.

"These are indeed a splendid set of organizations, all so perfected as to absolutely assure their own interests. The importers to get the farmers to send the fruit to the market where it shall be doubly tolled by brokers and importers, and a third organization agreeing to buy the fruit providing no outsider is permitted to interfere with the prices. The parties naturally look with admiration on their splendid structure and the mill works well, netting the first two organizations five thousand dollars a day. These organizations do not look with favor on our cooperative organization for the simple reason that it seriously interferes with the working of their machine."

We have seriously interfered with this set of organizations. Last year they held a joint meeting and agreed to grant the United Fruit Companies special terms, which they assured us could be obtained

by no other shipper or combination of shippers. It was unnecessary, however, for us to accept their terms, as we found another way of marketing our apples in the north of England.

Fruit Inspection in the Prairie Provinces

G. W. Baxter, Chief Fruit Inspector for Eastern Ontario and Quebec

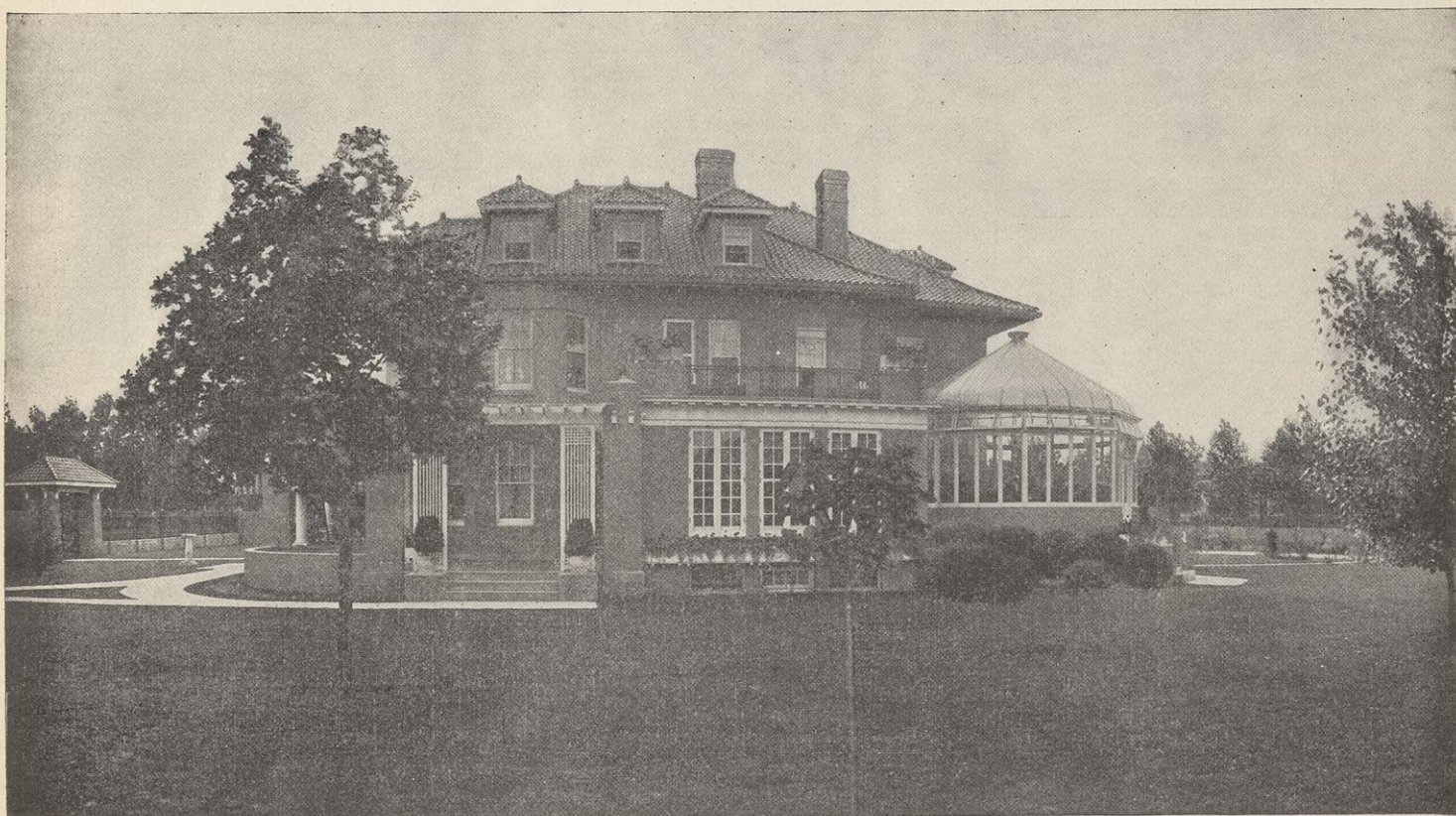
THE prairie provinces, extending from Port Arthur to the western boundary of Alberta and British Columbia, and from Edmonton to the international boundary, present exceptional features to the fruit inspector, as they are the main Canadian market for imported fruit, and therefore the market in which competition between American and Canadian fruit is most keen. The district is divided into nine sub-districts—Port Arthur, Winnipeg, Brandon, Regina, Medicine Hat, Lethbridge, Calgary, Edmonton and Saskatoon. A permanent inspector is located at Winnipeg, and one at Calgary, while temporary inspectors are stationed at the other points during the busy months between August and December.

Until apples commence to move in car-load lots, it is seldom necessary for the inspector to leave the central point, as practically all other varieties of fruit are diverged from these centres in less than car lots, and can be inspected before being re-shipped. Whenever possible, the wholesales have

cars consigned to the most convenient point and reshipped from there, as this means to them a saving of freight charges and a quicker delivery. The inspectors receive information as to the movement of these cars through the courtesy of the wholesalers, railway officials, and, in the case of imported fruit, from the customs official.

The Inspection and Sales Act does not require that fruit packed in "open" packages shall be graded. The only requirement is that it shall not be over-faced, and it is pleasing to note that the old custom of placing the larger and better fruit on the top and bottom of the package is practically a thing of the past.

The inspection of apples and pears constitute the greater portion of the work. These are practically all packed in "closed packages," which are required by the Act to be branded with the name and address of the packer, the variety of the fruit, and one of four grade marks: Fancy, No. 1, No. 2 and No. 3. The three former grades are defined in the Act and it is the duty



TEA ROOM WITH CONSERVATORY ATTACHMENT

ANY attractive, cozy room, providing it contains a tea table in a more or less out-of-the-way position, is eligible, so they say, to be called a tea room. The term it would seem is a broad one—its pleasurable inclusions many.

It happened that this particular tea room is so sunny with its group of long casement windows, that it might equally well be called a sun room.

Opening directly from it by glassed doors, is the plant and bloom-filled conservatory. In the centre is a fountain—

a choice one of rare treatment. The complete effect from the tea room is best described by the word, alluring.

But that isn't all—it's soothing, to tired nerves, is all that restful greenery with its spots of bloom color.

To daily chum with the plants and do little things for them, will turn many a lagging Winter hour into quite the most joy-receiving one of the day.

All of which has much to do with the reason for our building so many conservatories.

U-BAR GREENHOUSES

PIERSON U-BAR CO

ONE MADISON AVE. NEW YORK

CANADIAN OFFICE, 10 PHILLIPS PLACE, MONTREAL

Protect Your Fruit

BY USING

WARNER'S APPLE BARREL PAD

It costs LITTLE and PAYS BIG
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FRUIT MACHINERY CO.

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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

GLASS GARDENS

"MADE IN CANADA"

With everyone interested in the "Made in Canada" movement we feel that we are particularly fortunate in being able to offer just at this time, glass gardens and greenhouses that are entirely "Made in Canada" by a Canadian Company.

Of course the real question is "are they made as well in Canada?"

The knowledge and experience of these men, who are connected with the Company, assure that the character of its work will be equal to any:

Mr. Isaac Cassidy, formerly of Lord & Burnham Co., Mr. R. L. Derbyshire, formerly Canadian Manager of the Parkes Construction Co., Mr. W. J. Keens, of Toronto, is President, Dr. J. M. Baldwin, late Vice-President of Toronto Horticultural Society, Vice-President, and Mr. C. M. Baldwin, Secretary-Treasurer.

It has already under construction two large houses for J. H. Dunlop, of Richmond Hill, and private gardens for Mrs. G. A. Cox and Mrs. W. R. Williams in Toronto.

Further particulars or plans and estimates will be gladly furnished to anyone interested or they will be welcome to view our methods at the factory.

GLASS GARDEN BUILDERS, Ltd.

201 Church St., TORONTO

of the inspector to see that the fruit is up to the requirements of the grade mark on the package. In the matter of imported fruit the importer is required to brand the packages in the same way as the packer in Canada, and is responsible for the grading of the fruit.

In the Province of Alberta and western Saskatchewan, the greater portion of the fruit is received from British Columbia and the north-western states, and all such fruit is packed in boxes or crates. Barrels are never used. The careful packing and grading of the fruit from these districts makes the work of inspection much easier than when packed in barrels.

In the Provinces of Manitoba and eastern Saskatchewan the great bulk of the fruit is supplied from Ontario, Nova Scotia and the central states. The principal package is the barrel, although it is worthy of note that the quality of boxed apples from the east, and especially from Ontario, has greatly increased during the past three years.

More time is required to inspect fruit in barrels than when put in boxes, and on account of the pressure which has been put upon the fruit in packing, great care must be exercised in examining the contents, as any injury to the fruit might lessen its keeping quality. Although it is the first duty of inspectors to see that fruit is packed in accordance with the requirements of

the Act, it is also their duty to do everything possible to promote the interests of the fruit industry. The opportunities for this are probably greater in this district than in any other, because of the fact that more shippers have no opportunity of seeing their fruit at the receiving end. Information with regard to the loading of barrels, the carrying qualities of the different varieties, the most suitable styles of packing, the conditions of the market and many other details of the work are regularly forwarded to the Fruit Branch at Ottawa, and transmitted to the shippers.

The work of organization and inspection has for the past two years been in charge of the writer, who has been transferred this season to the Lake Ontario district to fill the vacancy caused by the death of W. W. Brown. Mr. A. H. Flack, who has had many years of experience in the growing and packing of fruit in British Columbia, and who has also been fruit inspector in the cities of Edmonton and Vancouver is now in charge of the work in the prairie provinces, with headquarters at Winnipeg. The following is a list of the inspectors under his supervision:

Winnipeg, J. Carman; Winnipeg District, C. Weld; Brandon, J. H. Fleming; Regina, J. W. Clement; Medicine Hat, F. Metcalf; Lethbridge, J. C. McCauley; Calgary, M. P. McNeill; Edmonton, F. H. Steele; Saskatoon, R. J. Wallace.

Fruit Jobbers are Organized

R. M. Winslow, B.S.A., Victoria, B.C., Sec'y, B. C. Fruit Growers' Association

Aside from competition, the greatest feature of fruit distribution in the Canadian prairies is the attitude of the fruit jobbing trade to our product. The Fruit Markets Commissioner connected with the Horticultural Branch of this Department reports to me seventy-two jobbing and brokerage houses handling fruit in the three prairie provinces. Twenty-nine of these houses are more or less independent of each other and one of the twenty-nine is said to be controlled by the Ontario fruit growers. British Columbia fruit shipping concerns have a total of eight established jobbing and brokerage houses, and of the remaining thirty-five houses, twenty-six are closely affiliated with one organization known as the Nash House or equivocally "The American Ring," while the remaining nine are the Scott Houses, which are said to be closely affiliated with the ring. At any rate these thirty-five houses dominate the situation in Alberta and Saskatchewan, where British Columbia fruit is largely marketed.

These houses, it is reported are owned by American capital, controlled by Americans, and affiliated with similar fruit distributing houses on the American side. One organization reported to be affiliated with the Nash House is one of the largest fruit shippers in the northwestern states. The total capitalization of the Canadian Nash Houses is said to be about two million dollars. These houses have buying agencies in Calgary, Edmonton and Alberta, through which most of their British Columbia, and many of their American purchases are made.

This organization has grown rapidly from comparatively small beginnings of a few years ago, and its rapid growth has been a matter of great concern to British Columbia growers. Most certainly the Ring Houses do not encourage less than carload shipments, nor do they have much sympathy with unstandardized fruit.

Practically all of the fruit jobbing houses in the prairie provinces are more or less opposed to handling Ontario fruit if there is any prospect of handling western fruit.

This prejudice is probably nothing more than a matter of fruit packages, but at any rate it is a strong factor in the constant approachment of Pacific Coast fruit, whether Canadian or American, into sections which had largely been supplied by Ontario a few years ago.

Experience has shown that British Columbia has little to fear from this organization, but the same experience amply demonstrates that there is safety only in a large and equally strong organization of our own. That requirement is very largely met by the formation of the Okanagan United Growers, which is the central selling agency of nine cooperative packing associations.

RASPBERRY SHIPMENTS.

The Mission-Hatzie section in the Lower Mainland is the principal raspberry district we have, and marketed this year about 24,000 crates. Up to this year, none of its crop had been handled by houses of the American Ring, which had gotten their supplies from Washington in carloads. To get a better distribution and to displace the American raspberries, it was necessary to put our own raspberries into carloads, and to this purpose, the growers of this province formed the Fraser Valley Fruit Growers' Union, and put their own representative into Calgary to oversee the marketing of their fruit. They shipped eleven straight carloads of raspberries by express to the American House and got excellent satisfaction. Each car displaced an American car. The growers are well satisfied with the results and intend to continue and develop and perfect their organization for next year along the same lines.

The prairie farmer demands cheap fruit. He is not particular as to grade, providing the fruit is sound, of reasonable quality and true to description. He has no use for fancy colors, fancy packing, or high prices. The American C. grade meets this demand, which is at once lower than our No. 1, and higher than our No. 2. To meet the C. grade on equal terms, the Okanagan United Growers are putting out a No. 2 grade which is much superior to our old No. 2.

With all odd varieties of apples, there may be only one grade, all marked No. 2 for this trade. It shows every prospect of being the best possible method of meeting the demand at a remunerative figure.

Putting low grade cooking apples into boxes is an unnecessary expense and experiments are being made in marketing all this low grade stuff in crates, effecting a considerable saving in the cost of package and packing. There is a definite demand for such commodities, which has heretofore been supplied very largely by barrelled apples and a crate weighing about eighty pounds seems to fit the conditions.

Still another problem is the supply of fresh tree-ripened soft fruits to consumers over one hundred to twelve hundred miles distant. Fruits shipped in carloads by freight must be picked too green to preserve their full quality. Our peaches, apricots, etc., marketed in carloads, by freight, met similar carloads from the American side and prices have, as a rule, been unsatisfactory. The growers have been urged to develop a "direct to retailer or consumer" business, by express, for which low express rates have been secured. This is already becoming an important item. In 1911 the Dominion Express Co. shipped 2,785,000 pounds of vegetables. This increased in 1912 to 4,330,000 pounds, and in 1913 increased still further to 5,204,000 pounds. 1914 shipments will show a similar increase, indicating a great development in the direct to retailer and consumer trade.

The cooperative organizations marketing British Columbia fruits and vegetables this year are as follows:

Fraser Valley Fruit Growers' Union, Mission and Hatzic Rhubarb Growers' Association, Chilliwack Farmers' Exchange, Ashcroft District Potato Growers' Association, Okanagan United Growers, Ltd., Vernon, with affiliated organizations at Tappen, Salmon Arm, Enderby, Armstrong, Vernon, Kelowna, Peachland, Summerland, and Penticton. Grand Forks Fruit Growers' Association, The Kootenay Fruit Growers' Union, Ltd., Nelson, Creston Fruit Union, Creston.

There are besides, other concerns which are cooperative to the extent that they are owned and controlled by the orchard owners, but not on a strictly cooperative basis.

British Columbia has solved the problem of meeting American competition in wholesale and jobbing channels of fruit trade by growers organizations, making carload shipments and meeting American trade on the same basis. The same result has not been achieved to any extent by Ontario growers.

Some British Columbia organizations, usually limited companies and partnerships, are doing their own distributing to retailers in the prairies, but this is yet limited in extent and likely to continue so at least for the immediate future.

A Large Orchard.—On Sunday, Aug. 16th I visited a friend and horticulturist on the Island of Montreal. For tea we had fresh picked strawberries and raspberries. The patch which they came from I visited. There was quite a shipment of each ready to pick. Mr. C. P. Newman said he got fifty cents a quart for his last picking of raspberries last year. He will have about four thousand barrels of apples this season. This, I think, will surprise some fruit men in the West to find one man on the little Island of Montreal raising such a quantity. No shipments of apples have gone forward to England yet, but, I am glad to know, there are some inquiries for our very noted apples.—A. H. Wartman, Montreal, Que.

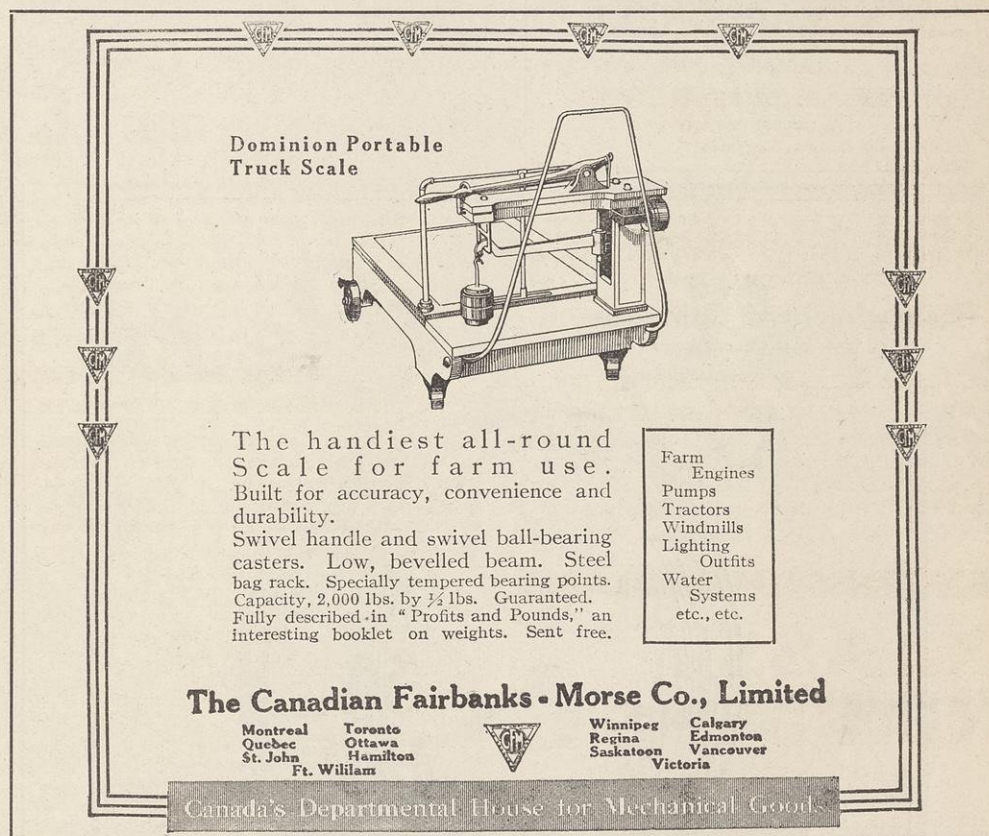
I would like to see Canada adopt the same size apple box that has been made the standard size for the United States. There



**Peerless
Guaranteed Fencing**

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 material made for the manufacture of wire fencing. Send for literature. Ask about our farm and ornamental fencing. Agencies nearly everywhere. Live agents wanted in unassigned territory.

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



**Dominion Portable
Truck Scale**

The handiest all-round Scale for farm use. Built for accuracy, convenience and durability. Swivel handle and swivel ball-bearing casters. Low, bevelled beam. Steel bag rack. Specially tempered bearing points. Capacity, 2,000 lbs. by $\frac{1}{2}$ lbs. Guaranteed. Fully described in "Profits and Pounds," an interesting booklet on weights. Sent free.

Farm
Engines
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Windmills
Lighting
Outfits
Water
Systems
etc., etc.

The Canadian Fairbanks - Morse Co., Limited

Montreal	Toronto	Winnipeg	Calgary
Quebec	Ottawa	Regina	Edmonton
St. John	Hamilton	Saskatoon	Vancouver
	Ft. William	Victoria	

Canada's Departmental House for Mechanical Goods

was a time when the Americans used to send their culls in apples and other fruit to Canada, but now they send us their best,

and we should meet them with just as good fruit and as full a measure.—R. Brodie, Montreal. Que.

Market for Canned Fruits and Vegetables

In accordance with cabled instructions from the Minister of Trade and Commerce, the Canadian Trade Commissioners resident in the United Kingdom, have conducted an inquiry into the conditions of the demand for canned fruits and vegetables in that country, with special reference to the possibilities for increased supply from Canada. The results of this inquiry have now been submitted in the form of a report, prepared in the office of Mr. Harrison Watson the Trade Commissioner at London:

NO EXTRAORDINARY DEMAND

All the London authorities consulted state that there has so far been no indication that the requirements of the United Kingdom in canned fruits and vegetables will be greater than in ordinary years, and several firms mention that whereas immediately after the declaration of war there was a small amount of panic buying of canned goods in common with other commodities, the trade has experienced since

then a distinct decrease from the usual demand.

The purchase of any considerable quantity of these goods as supplies for the Army and Navy would obviously cause some special demand but the trade does not anticipate that they are likely to be called for to any large extent. The future depends so greatly upon the course of events that dealers are unwilling to make any forecast, but the general opinion appears to be that unless some development at present totally unexpected should occur, there is some likelihood of a falling off rather than an increase in the demand from the ordinary public for both canned fruits and vegetables. The chief reason for this is that neither canned fruits nor vegetables form a part of the staple food of the population of the United Kingdom, in which respect they differ essentially from canned meats and salmon. Indeed, canned fruits are mainly regarded in the light of a luxury.

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

As regards fruits, the only line in which Canada has captured any considerable trade is in gallon apples, which really provides the bulk of the Canadian business in this country in canned fruits and vegetables, the California packers of peaches and pears having obtained a hold on this market with which it has so far been difficult to compete.

The Strawberry Root Weevil in British Columbia, with Notes on other Insects Attacking Strawberry Plants in the Lower Fraser Valley, is the subject of Bulletin No. 18 of the Second Series of the Central Experimental Farm, Ottawa. This publication, which has been prepared by Mr. R. C. Treherne, B.S.A., is based upon a careful study of the insect carried out in 1912 and 1913, by the writer, under the supervision of Dr. C. Gordon Hewitt, Dominion Entomologist. The Strawberry Root Weevil constitutes the greatest obstacle to the successful growing of strawberries in certain sections of the Lower Fraser Valley; the investigations carried out demonstrated that the control

of this insect was dependent upon cultural methods and the system of cropping, and for this reason these aspects of the problem are fully discussed.

British Fruit Imports

That there is an almost unlimited demand for cheap fruit in the United Kingdom is illustrated by the enormous quantities of bananas which are now sold all over the country, their appearance having created an entirely new demand. Fruit from Canada and Australia, South Africa and the West Indies is sold throughout the country in quantities which seem to be limited only by the carrying capacity of the cold storage in the steamships.

The total value of fruit, not liable to duty, imported to the United Kingdom in 1913 was as follows:

From—	
British possessions	£ 1,671,955
Foreign countries	10,406,000
Total	£12,077,955

APPLES

Of all the fruits which are the subject of international trade, apples represent the greatest aggregate value, though bananas appear to be rapidly overtaking them. The following table shows that forty-seven per cent of the apples imported to the United Kingdom in 1913 came from British Possessions:

IMPORTS OF APPLES

From—	
Canada	£ 730,036
Australia	296,245
Channel Islands	11,844
Other British	1,958
Total British	£1,040,083
United States	£1,000,074
Other foreign	190,213
Total foreign	£1,190,287
Total	£2,230,370

The exports of apples from Canada during the eleven months ending February, 1914, were 889,932 barrels, value \$3,201,834.

The following table shows the imports of pears to the United Kingdom in 1913:

From—	
Canada	£ 32,169
Australia	30,650
Cape of Good Hope	20,929
Other British	2,498
Total British	£ 86,246
United States	£232,470
Belgium	162,171
France	99,765
Netherlands	52,707
Other foreign	16,725
Total foreign	£563,838
Total	£650,084

The exports of fresh fruit from South Africa in 1913 amounted in value to £54,315, and included grapes £12,270, oranges £11,530, pears £9,674, plums £5,961, peaches £4,090, naartjes £2,217, and pine-apples £1,687.

Boxes vs. Barrels

F. Dane, Canadian Trade Commissioner, Glasgow, Scotland

Interviews with importers, brokers, and the retail trade indicate that the box package is becoming a more important factor in the apple trade than formerly. Which is the better package cannot be answered offhand. One class of package suits one



Every farmer should hire him

You pay him only \$3.00 for 365 full 24-hour days a year—and nobody knows how many years he'll last, for he has never been known to wear out.

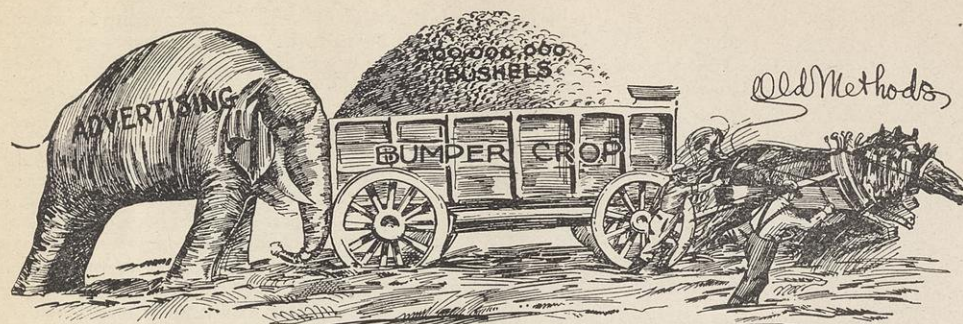
His board amounts to a drop of oil every twelve months—that's all the pay he asks.

His work is getting the farm hands in the fields on time, starting the before-breakfast chores on time, and telling the right time all day so the women folks can have the meals on time—these are easy jobs for him.

Big Ben stands seven inches tall. He is triple-nickel plated and wears

an inner vest of steel that insures him for life. His big bold figures and hands are easy to read in the dim morning light. His keys almost wind themselves. He rings for five minutes straight, or every other half minute for ten minutes as you prefer.

The next time you're in town just drop in at your dealer's and ask to see Big Ben. If your dealer hasn't him, send a money order for \$3.00 to Westclox, La Salle, Illinois, and he'll come to you, transportation charges prepaid, all ready for work. Hire Big Ben for your farm and he'll prove the promptest hired man on the place.



Now that the tremendous power of Advertising is being applied we will see the "bumper" crops pushed out of the rut.

trade while another class of package is looked for by a different trade.

Those who follow up the matter closely say the market for the box trade is in-

creasing all the time, so that the matter is becoming one of importance for the Canadian shipper. Under normal conditions the box trade is likely to increase.

Horticultural Exhibition and Allied Convention

JUST as The Canadian Horticulturist was going to press, word was received from Toronto that it had been found necessary by the directors of the Ontario Horticultural Exhibition to cancel all arrangements for the exhibition which it had been proposed should be held this year as usual on the grounds of the Canadian National Exhibition. This sudden decision was made necessary by the announcement that the buildings of the Canadian National Exhibition have been requisitioned by the Militia Department for recruiting and drilling purposes. As no other buildings at all suitable for the purpose of the horticultural exhibition were available, there was nothing else the directors could do but announce that this year's exhibition would have to be cancelled. This is unfortunate, but it could not be helped.

FRUIT GROWERS' CONVENTION

The conventions of the Ontario Fruit Growers' Association and of The Ontario Beekeepers' Association will be held as usual. The Fruit Growers' Convention will be held November 11 to 13. The programme is as follows:

Wednesday, November 11th—2 p.m., President's address, R. Thompson, St. Catharines; address, D. Johnson, Dominion Fruit Commissioner; "Citrus Fruits and Bananas in Relation to the Marketing of Ontario Apples," by Prof. J. W. Crow, Guelph; "The Business Side of Cooperation," by F. C. Hart, Director of Cooperation and Markets Branch for Ontario.

Thursday, 9 a.m.—"Experimental Results on Peach Canker," by W. A. McCubbin, St. Catharines; "Cherry Fruit Flies and How to Control Them," by Prof. L. Caesar, Provincial Entomologist; "Pre-cooling of Canadian Fruits," by Edwin Smith, Grimsby, Ont.; "Vineland Experiment Station: Its Purposes, Aims, and Methods," by Prof. F. M. Clement, Director.

Thursday, 2 p.m.—Election of Directors. Illustrated Discussions led by well-known authorities on various important fruit topics. Question Drawer.

Friday, Morning Session, 9.30 a.m.—"Direct to the Consumer," by W. H. Bunting, St. Catharines; "The Fruit Business from the Retailers' Point of View," by D. W. Clark, Toronto; "Yields of Varieties of Apples at Different Ages," by W. T. Macoun, Dominion Horticulturist, Ottawa; "Cooperative Experiments," by Prof. J. W. Crow, Guelph.

OTHER CONVENTIONS

We had expected to be able to publish in this issue the full programmes for the con-

ventions of the Ontario Horticultural Association and of the Ontario Vegetable Growers' Association. The secretary of these associations, Mr. J. Lockie Wilson, was written to early in October and asked for copies of the programmes or particulars concerning them in order that they might be published in this issue. Mr. Wilson replied that they would be forwarded when completed, but at the time this last page went to press, October 27th, they had not been received. We presume that these conventions will be held as usual.

The Late Dr. Wm. Saunders

W. T. Macoun, Ottawa, Dominion Horticulturist

For many years before he was appointed Director of the Dominion Experimental Farms, the late Dr. Wm. Saunders took a deep interest in horticulture. On his fruit farm, near London, Ont., he experimented for years in the hybridizing of fruit, and succeeded in originating a number of valuable varieties.

Of his earlier work, the Pearly and Red Jacket (Josselyn) gooseberries have won for themselves a good reputation among fruit growers. His Saunders black currant, though in the trade for a number of years, is not so well known. His Eclipse, Magnus, Clipper, Climax, Eagle, Kerry, Success and Beauty black currants, all excellent varieties, are available to anyone who desires to grow them. His work with raspberries was mostly confined to the crossing of the red with the black cap. Many of these crosses, while heavy croppers, were not attractive in color, and while excellent for home use, did not appeal to the trade because of their dark color. The Sarah is one of the best of these, and is a most excellent variety for home use, being late, it lengthens the raspberry season. Two other early red varieties are Brighton and Count, which are very hardy and productive, the former especially being a very heavy yielding early sort. None of his grapes are offered for sale, but his Emerald, a white grape, is one of the highest quality and excellent for home use, and his Kenington is a fine white variety. At the Colonial Exhibition in 1886, the Emerald grape was considered the best of the Canadian sorts exhibited.

While director of the Experimental Farms his enthusiasm for the production of new things did not become less, and the many hours of hard work spent in his garden at the Central Farm are known only to a few who were intimately associated with him. His work with gooseberries, currants and

GLADIOLUS

Lifting now. For a short time we offer at less than trade prices—Princes, immense scarlet; Halley, the earliest pink, \$1.50 per 100; America pink, Anna Wigman, yellow and red; Hulst, the finest blue; Taconic, bright pink and crimson; Monnerett, rose pink; Lucretia, white and pink, \$1.25 per 100; Independence, deep pink; Pink Beauty, the earliest of all; Klondyke, yellow and maroon, \$1.00 per 100, express collect; Peace White, Niagara yellow, 10c; Glory of Holland, the largest white, 75c; Panama, largest pink, 20c each, prepaid—25 at 100 rate.

H. P. VAN WAGNER, R.R. No. 5, HAMILTON, Ont.

Cold Storage Fruit Warehouse

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

Special Rooms for All Kinds of Perishable Goods.

THE CANADA COLD STORAGE CO. Limited

53 William St., MONTREAL, Que.

APPLE BOXES

Prices submitted on Green Apple and Evaporated Apple Boxes in Shook Form. State Quantity.

WILSON BOX COMPANY LIMITED
ST. JOHN, N.B.

EUROPEAN SEEDS

Order from ENGLAND NOW

KELWAY'S
QUOTE and CAN DELIVER

Anise	Cauliflower	Lucerne	Rape
Beet	Celery	Mustard	Rutabaga
Cabbage	Kale	Pepper	Spinach
Carrot	Kohl Rabi	Raddish	Turnip
Vetch and Flower Seeds			

If you have hitherto placed your orders in other quarters, OUR PRICE under present circumstances, will compel you to buy from us.

Please write AT ONCE while stocks last for immediate and later delivery: also on contract for next Fall.

British Sailing to Canada continues all the time.

KELWAY & SON, SEED GROWERS to the TRADE
LANGPORT, ENG.

raspberries was continued there. He crossed the gooseberry with the black currant, producing an interesting but sterile hybrid. Some work was also done with plums. Among ornamental plants he was especially interested in roses, and his Mary Arnott and Agnes roses, two fine varieties, are the results of his efforts. He originated some very interesting and ornamental hybrids, between the Thunberg' and Purple-leaved barberries, which are at present under test at Ottawa.

His most important work in hybridization has been left to the last. Visiting the prairie provinces frequently, as he did, he saw the need of hardy apples there, and the success of the wild Siberian crab apple (*Pyrus bacata*) at Indian Head, Sask.,

gave him the hardy material with which to work. This hardy little crab apple, smaller than a good cherry, from one half to three quarters of an inch in diameter, was used as the female parent of many crosses with hardy Russian and American apples of good size as the male. This work was begun in 1894 and continued in succeeding years. The first fruit was produced in 1899, when thirty-six trees bore, and five of these were of such size and quality as to justify their being propagated for more general test. In time about eight hundred trees were set out, a large proportion of which fruited. The largest of these first generation crosses were from one and one-quarter to one and three-quarter inches in diameter, a substantial gain in size over

the mother parent. As rapidly as possible the best were set out for test and some of these have proved very hardy, fruiting abundantly on the open prairie without protection. Among these may be mentioned the Jewel, Charles, Silvia, Prince, Tony, Robin and Elsa. So hardy are these, that fruit of these crosses has been produced at the sub-station at Fort Vermillion in latitude 58 degrees, where the temperature frequently falls to between fifty and sixty degrees Fhr. below zero.

Not content with hardy apples of so small a size, Dr. Saunders re-crossed the best of these first crosses with apples of larger size in 1904, and from this work over four hundred trees were obtained. Many of these have now fruited, some of which have produced apples two and a half inches in diameter, and of good quality, which are being propagated and sent to the prairie farms for test. It is expected that some of these will prove hardy in places where apples of this size cannot at present be successfully grown. Even should they not prove sufficiently valuable to satisfy the settlers, who would like to have apples equal to any grown elsewhere in Canada, Dr. Saunders has, at least, laid the foundation of a hardy race of apples from which probably will eventually come varieties even better than those available at present.

The love of the beautiful in nature was very strong in Dr. Saunders, and he was able to give expression to this love in his work in beautifying the Central and Branch Farms. Many countries, many botanical gardens, nurseries and seed catalogues were searched for plants and seed to test, in order to learn their value under Canadian conditions. Beginning in 1887, and continuing until 1911, he continuously endeavored to bring to Canadians from other countries, all that was best and most beautiful among trees and shrubs and flowers, and from the abundant material available he was able to plan and plant the grounds at the Central Farm especially in such a way that it is to-day one of the most beautiful places in America.

Comparatively few know of the work Dr. Saunders did in planning and planting the trees and shrubs along the Government Driveway in Ottawa, but it should be recorded here that a large proportion of the driveway between St. Louis Dam and the Rideau River was planned and planted by him.

Canadian horticulturists have lost a warm friend in Dr. Saunders. He was a true amateur horticulturist, the love of the work standing out in everything he did. He was a member of the Ontario Fruit Growers' Association from its early years, and was one of the few enthusiasts who kept the Association in existence before the commercial side of horticulture had developed much in Canada.

British Columbia

In accordance with an arrangement between the Dairy and Cold Storage Commissioner and the Deputy Minister of Agriculture for British Columbia, Mr. Edwin Smith, who has charge of the Government Experimental Cold Storage Warehouse at Grimsby, Ont., operated by this branch, spent a couple of weeks during the summer in British Columbia conferring with local officials and fruit shippers regarding fruit transportation investigations now under way.

Arrangements were made with the head of the Canadian Pacific Railway refrigerator car service to carry on experiments in the Okanagan Valley with the use of salt

This Beautiful Tea Set of Bavarian China **FREE**



This beautiful Set contains 40 pieces. 1 dozen cups, dozen saucers, dozen plates, 2 cake plates, 1 cream jug

and a dreg bowl. The set is Bavarian China, nicely decorated and the shapes are the very latest.

A large order placed with a local wholesale house enables us to offer these sets to you in return for a very small amount of work on your part and without a cent's expense.

If you will send us 8 new yearly subscriptions to **The Canadian Horticulturist** at 60c. each, or 5 new two year subscriptions at \$1.00 each, we will send you one of these sets at once.

This is a wonderful opportunity for **you** to get a Tea Set **FREE**. Write us immediately.

THE HORTICULTURAL PUBLISHING CO.
PETERBORO, ONT. LTD.

and ice mixtures in brine tank cars for fruit shipments to be forwarded by the Okanagan United Growers, Limited, Vernon. Careful records have been kept in regard to temperature in transit, ventilation and humidity.

The raspberry growers of the Mission and Hatzic districts this year for the first time began shipping raspberries in straight carloads by refrigerator freight. Eleven carloads were thus shipped with highly satisfactory results, as the berries reached the market in a vastly improved condition, and the growers received from forty to sixty cents more than they would have secured under the old system of express shipments and individual marketing.

In pursuance of the policy of making known the excellent quality of British Columbia fruit in outside markets, the British Columbia Fruit Growers' Association

has just issued an attractive eight-page booklet entitled "Advertising British Columbia Fruit." One hundred thousand copies were printed so as to cover a large part of our Canadian markets. Sample copies were sent to over twenty five hundred retailers of fruit, and secretaries of farmers' organizations in the prairie provinces inviting them to ask for quantities to distribute to customers. It is expected that this demand will make excellent advertising.

Consumers of fruit in Alberta and Saskatchewan are responding in numbers to advertisements in their papers inviting them to secure copies. The booklet contains much information about British Columbia fruit and will be popular among fruit users. It contains a few simple jam making and canning recipes, tells how to buy fruit, and the varieties to buy for different purposes, and the months when they are in season.

forty-nine in six days; fifty or more in ten days, under a penalty of twenty-five dollars a day for each car failed to be furnished. This is pretty severe legislation, but I venture to say, it guarantees prompt service to the shipper, for while he is also penalized the same amount for detention, there would be prompt releasing of the cars. In many other states the prompt



SMALL FRUITS

Gooseberries, Red and Yellow; Currants, Red, Black and White; Raspberries, Red, Purple and Yellow; Black Berries; Grape Vines, Strawberries, Rhubarb, Asparagus Roots, etc., etc. Ask for Price List.

W. FLEMING, Nurseryman
Owen Sound, Ont.

Transportation Problems*

Geo. E. McIntosh, Traffic Expert, Ontario Fruit Growers' Association, Forest, Ont.

MANY Ontario shippers take the view that freight rates west of Winnipeg are excessive, and that the blanket rate covering western Canada for the fruit shippers of the western states is an injustice, but the most serious complaints of the shippers centres on lack of railway equipment; inefficient terminal facilities, a service in transit that assures no certainty of reaching a market in proper time; delays in supplying cars; rough handling, lack of shelters, pilfering, neglect in icing cars or attending heaters, according to season, the need of a uniform express rate, assembling rates, and certain privileges now established, but not accorded the shippers of fruit. All the provinces are more or less interested in remedying these grievances, because success for one means better service for all. I would suggest, therefore, that united action be taken to solve some of these problems.

They are important. For instance, that of pilfering. From accurate information received from the shippers of Ontario last season, the fact was established that ten per cent. of their express shipments were pilfered. This meant a loss of approximately ten thousand dollars on local shipments, and yet it is not so much the monetary loss, as the dissatisfied customer, that the shipper fears, because the industry suffers thereby.

The supplying of cars is another serious problem, but the fault is not all upon the

railways. Consignees do not release cars promptly, and on the other hand railway terminals are not adequate for prompt placing. If, however, through organization or any other influence a quicker movement of cars and their return to the railroad could be brought about, it would be a factor which would eventually have to enter into the basis of ratemaking.

Refrigerator car equipment previous to 1913 was not increasing in proportion to the growth of perishable tonnage handled. For five years previous to 1913, the increase only averaged one hundred and thirty-one cars a year, while in 1913 it was increased by eight hundred and twenty-nine. Returns, however, show that even that season with a small crop, the entire refrigerator car equipment of Canadian railways was required by the fruit shippers during the movement of the apple crop alone from the province of Ontario during October and November. Therefore, we should do all that is possible to encourage the releasing of cars, as it is evident the supply of refrigerator cars is far short of the demand. This shortage of cars is one of the most serious grievances confronting the fruit shipper, and is a matter demanding careful attention.

Present regulations all favor the carrier. Perhaps they do all they can to meet the demand, but legislation less stringent than that appearing on the statutes of the state of Texas might help some. In that state the railways must supply ten cars or less in three days; over ten and not exceeding

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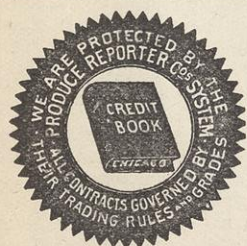
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References: The Canadian Bank
of Commerce, (Market Branch)
and Commercial Agencies.



*Extract from a paper read at the recent Dominion Fruit Conference held at Grimsby, Ont.

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—W. B. Calder, Grimsby.

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WANTED—Clean, bright beeswax and fancy comb honey.—R. N. Smeall, 95 4th Ave., Viauville, Montreal, Que.

WANTED—One ton or more of yellow onions from inch to inch and half. No smaller. Please send sample and price for immediate delivery to The Rosery Flower Co., Medicine Hat, Alberta.

delivery of cars is also regulated by statute, but a more sane penalty in most cases is one dollar a car a day. Free time for unloading runs from twenty-four hours in Minnesota to ninety-six hours in Connecticut, and one dollar a day demurrage for each day exceeding such free time.

The same penalty is fixed upon the railroads for delays in placing cars for unloading, when they exceed from twenty-four hours in Virginia to seventy-two hours in Florida. Records supplied me the past season from thirty-six cooperative associations in the province of Ontario show a total of one thousand two hundred and sixty refrigerator cars used. Twenty-two of the thirty-six associations experienced delays in the supplying of cars of from two to thirty-six days. Eleven associations had satisfactory service, and three did not ship in carloads. Seven days was the average time required in supplying refrigerator cars to the one hundred and thirty-one individual shippers of the apple growers' association. This grievance exists in all the fruit shipping centres of the Dominion. A bill should be introduced into Parliament requiring railroad companies to promptly supply proper cars and other transportation facilities, and to extend the jurisdiction of the Railway Commission in making rules and regulations with respect thereto, because service is as important as the rate.

New South Wales Fruit Case Act, Operative July 1, 1914

The regulations, in respect to the New South Wales Fruit Cases Act, that took effect on July 1, 1914, are outlined as follow:

"Where any apples, apricots, bananas, cherries, currants, figs, gooseberries, grapes, loquats, lemons, nectarines, oranges, passion fruit, peaches, pears, persimmons, pineapples, plums, quinces, tomatoes, and any fruit now or hereafter declared by the Governor by notice in the New South Wales Government Gazette to be fruit within the meaning of the 'Fruit Cases Act, 1912,' are sold in a case in New South Wales, or exported from New South Wales to any other place within the Commonwealth, such fruit shall be contained in a

case of any of the measurements set out hereunder, and a case of any special mea-

surement shall have the capacity hereunder set out opposite to such measurement:

CASE	INSIDE MEASUREMENTS	CAPACITY
One bushel case ..	18x14 $\frac{1}{4}$ x8 $\frac{3}{8}$ ins. ..	Not less than one Imperial bushel or cubical content of two thousand two hundred and twenty-three cubic inches (2,223).
One bushel case ..	26x6x14 $\frac{1}{4}$ ins.	Not less than one Imperial bushel or cubical content of two thousand two hundred and twenty-three cubic inches (2,223).
One bushel case ..	20x10x11 $\frac{1}{8}$ ins. ...	Not less than one Imperial bushel or cubical content of two thousand two hundred and twenty-five cubic inches (2,225).
One - half bushel case.	18x8 $\frac{3}{8}$ x7 $\frac{1}{8}$ ins. ...	Not less than one-half Imperial bushel or cubical content of one thousand one hundred and eleven and one-half cubic inches (1,111 $\frac{1}{2}$).
One - half bushel case.	26x6x7 $\frac{1}{8}$ ins. Clear of all or any div.	Not less than one-half Imperial bushel or cubical content of one thousand one hundred and eleven and one-half cubic inches (1,111 $\frac{1}{2}$).
One - half bushel case.	18x11 $\frac{3}{4}$ x5 $\frac{1}{4}$ ins. ... Clear of all or any div.	Not less than one-half Imperial bushel or cubical content of one thousand one hundred and ten cubic inches (1,110).
One-quarter bushel case.	13 $\frac{3}{4}$ x10 $\frac{1}{8}$ x4 ins. ..	Not less than one-quarter Imperial bushel or cubical content of five hundred and fifty-six and seven-eighth cubic inches (555 $\frac{7}{8}$).

Central Cooperative Association

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

WHERE local cooperative associations have been formed it should always be held in mind that the establishment of a central buying and selling agency should be carried into practice as soon as possible. The relations of each subsidiary company to the central need the most careful consideration. A central management cannot succeed unless it has absolute control over the produce of the local organizations, neither can it succeed unless the relations of one company to the other are on such a cooperative and business basis that there will be no opportunity for dissatisfaction and backbiting to creep in.

In the sale of produce the prices should all be pooled. By this I mean to say, that in the case of apples for instance, John Jones of the North will receive exactly the same price for his No. 1 McIntosh as John Smith of the South, each receiving the average sales price of the central organization. This eliminates all opportunity for any one company getting on the right side of the management and obtaining all the "plums." For instance, an order comes in from South Africa for 1,000 barrels of apples at \$9.50 per bbl. As there are many companies all anxious to dispose of their fruit at a high price the question arises who is to get this fat order. The result would be that jealousy and dissatisfaction would creep in, but with a pool of prices it does not matter who gets the order, for all, in the end, will receive the same price for their fruit.

There must be some way of penalizing the poor grower, but this is done in packing. By selecting a standard which is up to that of the best growers and by keeping up a standard pack in all the companies, the man who grows poor fruit will lose in the pack out. With a certain high standard properly put into practice, the No. 1's of one company should be just as good as the No. 1's of another company, and hence worth the same price.

In the handling of the total production of many companies, the Central can, if it is able to tell just how much produce it has to dispose of, make the arrangements

*Extract from a paper read before the Quebec Pomological and Fruit Growers' Association.

for its transportation in proper time. This avoids congestion. It can watch the markets and handle them in such a manner that no market will be left empty while others are filled to overflowing. We hear much about over-production, but I think there is little in it, for even here in this country we often see apples at a high price in one market while in others they are selling at less than cost. It is largely a matter of proper distribution and the proper handling of the markets and this can be done only by a cooperative movement. It is this handling of the markets and the elimination of the unnecessary distribution charges that makes cooperation a thing to be desired.

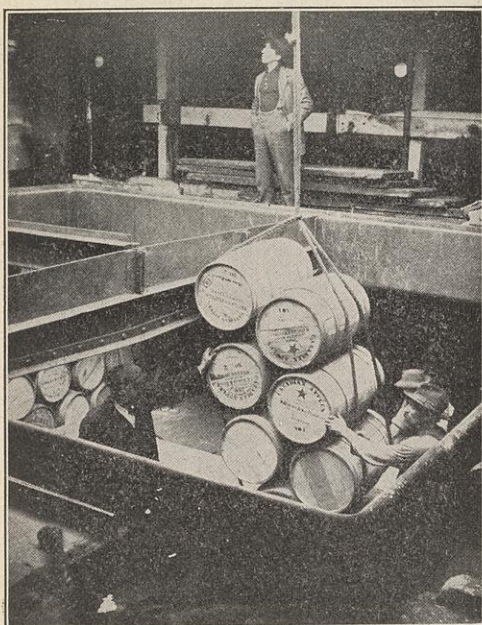
Probable Price of Apples

Writing some time ago to The Canadian Horticulturist in reply to a letter that had been sent him, A. E. Adams, Secretary of the United Fruit Companies of Nova Scotia, Limited, had the following to say in regard to the market outlook for apples:

"Presuming that the British navy is able to keep open the trade routes of the Atlantic, Nova Scotia may look for a fair return for her apple crop, although prices are not likely to be large. Staple articles of food such as flour, meat, etc., will possibly be high in England and, provided that the price of fruit is reasonable the people will probably use more of that beneficial diet. Under these circumstances a paying price may be obtained for apples, and in that respect the Annapolis Valley will benefit by her proximity to the English market. Nova Scotian apples can be placed on the English market at a lower cost than the fruit of any other North American district so that even a low price may be profitable, and bearing in mind that the crop this year is of such quality that there will be very little waste in packing I think the grower will net a very fair return tree run.

The home boiled lime-sulphur wash, the commercial solution or the vitriol solution, will entirely control the curl leaf, if it is thoroughly applied and done in time, say before April tenth in ordinary seasons.—J. L. Hilborn, Leamington, Ont.

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Short Course Calendar forwarded on request

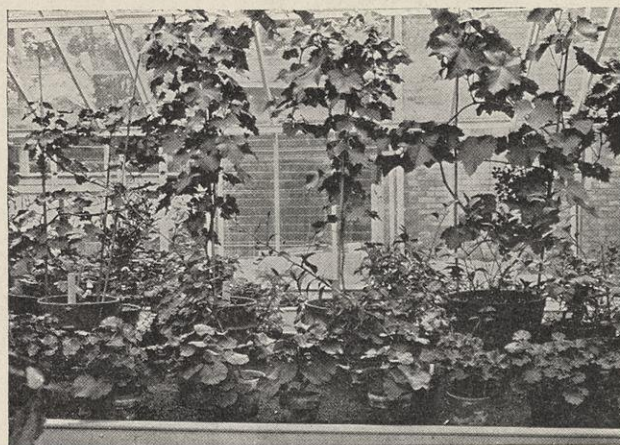
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