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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.

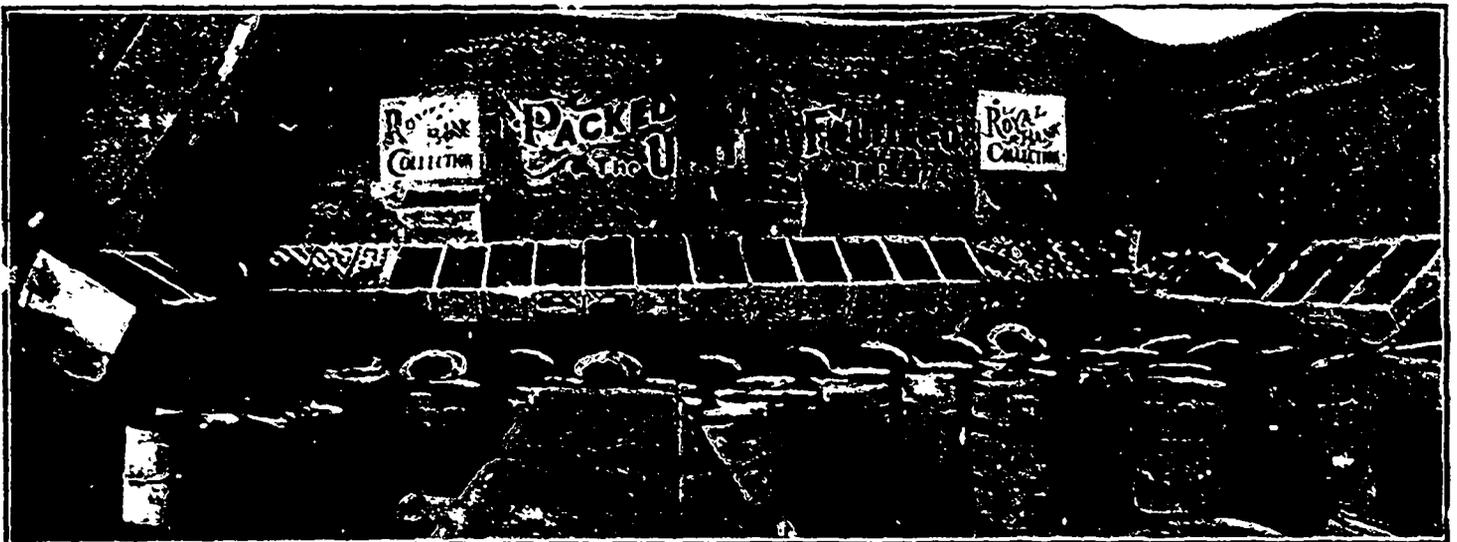
Comparisons of climate, as to precipitation, are simple, but as to temperatures the matter is hedged with difficulties. In this respect we found the method of utilizing temperature records worked out by the U.S. Biological Survey of the greatest value. Their investigations show the marked relation between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

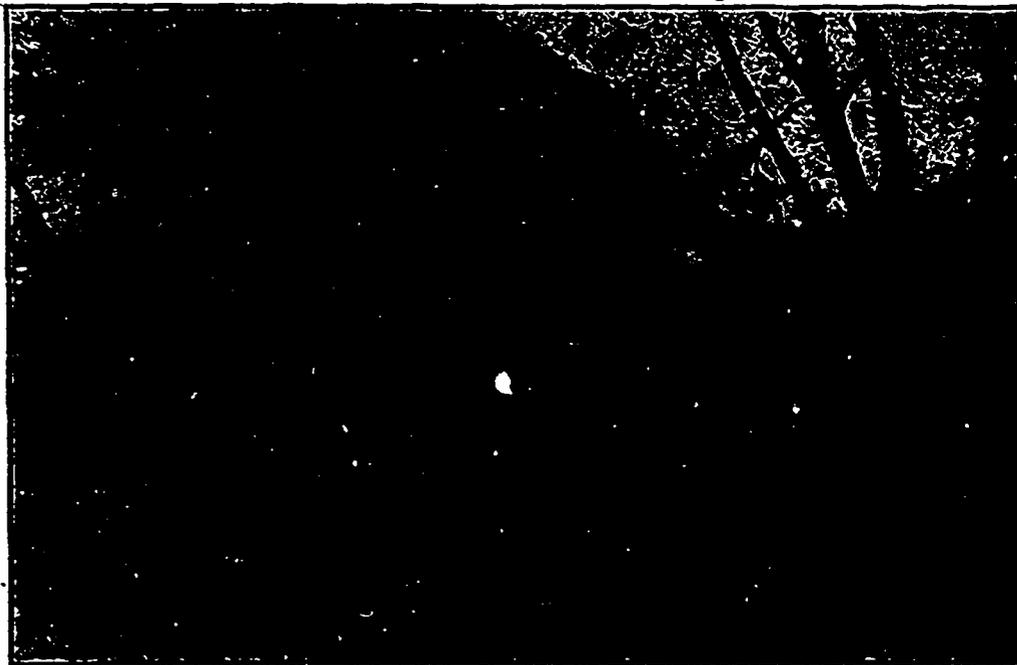
Mr. Pritchard, of Paris, said that he

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 Penrt, 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, and 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 with trailing vines, coleus, geraniums, petunias and hanging fuchsias, the whole making one mass of color from the ground half way up the windows



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.

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 reminiscencing 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 Lilius 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 straw manure.

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 hot-houses, 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

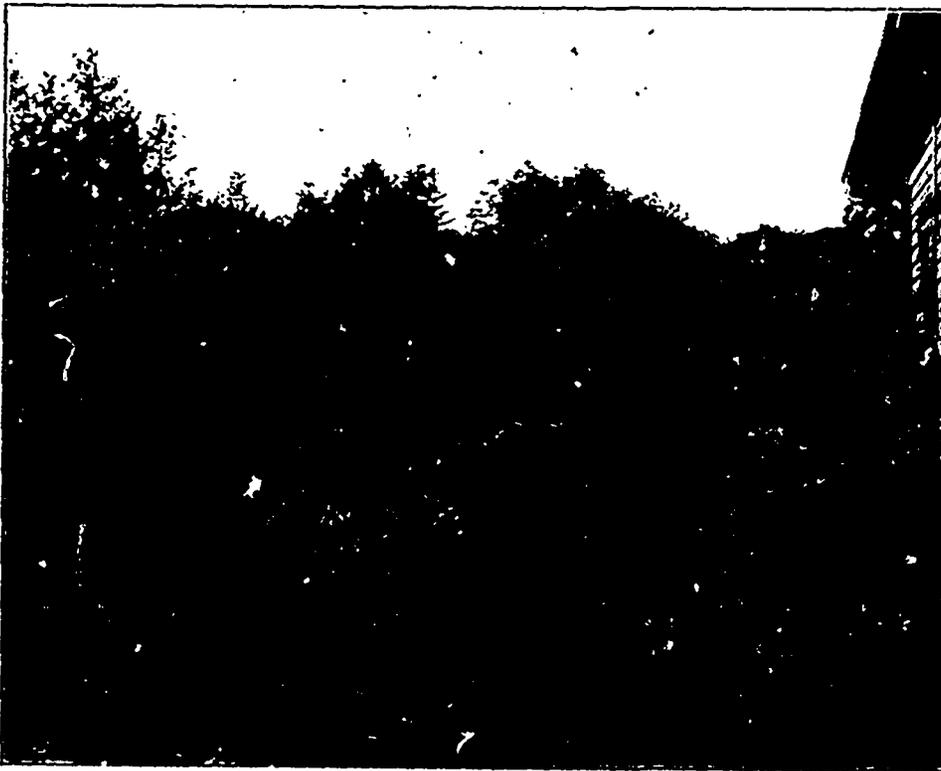
Cyclamen like a good mixture of sand loam and leaf mould, and as with primulas, unless one has a small glass house in which to place seedlings, it is more satisfactory to purchase plants in the first instance. However, there are some who have glass, and when purchasing cyclamen tubers they will bear 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 NARCISSESS

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. Maccom, 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.

Hardy Flower Border in Manitoba*

By Mrs. H. Lys, Dauphin, Man.

THE border that I am going to describe is one of the most attractive spots in the garden from the time the snow goes until it comes again. It is irregular in shape and might be described as a triangle with two long curved sides. The straight end is at the west and it has a high rustic fence for a background. The long north background is one of Nature's own designing, the lovely trees along the river bank and amongst them are two noble specimens of silver birch. The curve of the drive is the other side. This arrangement has a great advantage, as flowers are all more or less sun worshippers, and often turn their best sides to the south and east.

Nearly all the plants are hardy herbaceous perennials, some hardy bulbs and a few flowering shrubs. When the early bulbs have done flowering, their places are taken by some annual, and there is room left for a few clumps of variegated and rainbow corn, and in the corner near the rustic fence a clump of our old friend, the sunflower.

The first flower that blooms is the *Scilla Siberica*, the old-fashioned squill of our grandmother's garden. This brave little flower is a clear true blue,

*Paper read before the recent annual gathering of the Manitoba Horticultural and Forestry Association at Winnipeg.

and although the cold nights freeze it quite stiff it thaws out and smiles again in the sunshine.

The hyacinths and tulips follow closely. I was surprised last year to see how much frost the hyacinths stood after they were in full bloom, but although they do well some years they are not to be depended upon.

Between these bulbs are plants of *Arabis Alpina* or rock cress. Its greyish green leaves and delicate white blossoms make a beautiful contrast and the edging of the border is *cerastium*, also known as snow in summer. Its silvery leaves are always beautiful, and, when covered with white flowers, it deserves its name.

The yellow, white and red Iceland poppies are with us before the bulbs are over, their delicate stalks holding the beautiful fragile flowers with a dignity of their own and these are so useful for cutting (but don't use too many in one room, as they have rather an unpleasant odor). If kept cut and not allowed to go to seed, they will contribute their share of beauty to the border for many weeks.

The old favorite bleeding heart is one of the most graceful of the early flowers. If you have an especially fine clump of this, do not let it grow on too long without dividing it. If left more than three

or four years, the centre of the crown will decay and the beautiful plant will dwindle away. These plants delight in being shared with your neighbors, and simply will not grow in one huge clump for years.

In this respect they differ from the glorious queen of the herbaceous border, the paeony. This lovely flower resents disturbances, except at considerable intervals, and, as you probably know, seldom blooms the first year or two after moving. The glorious clumps of *Festiva Maxima*, *L'Esperance*, and others shed a delicious fragrance over the border so different from the old-fashioned red paeony.

There is one gorgeous flower that blooms at the same time as the paeony—the Oriental poppy. Its brilliancy is so great that it almost kills every color near it; so it needs very careful placing in the border. I have mine near the rustic fence which is then covered with the soft green leaves of the Virginia creeper and native grape and near the brilliant orange scarlet I put plenty of white, such as clumps of *achillea*.

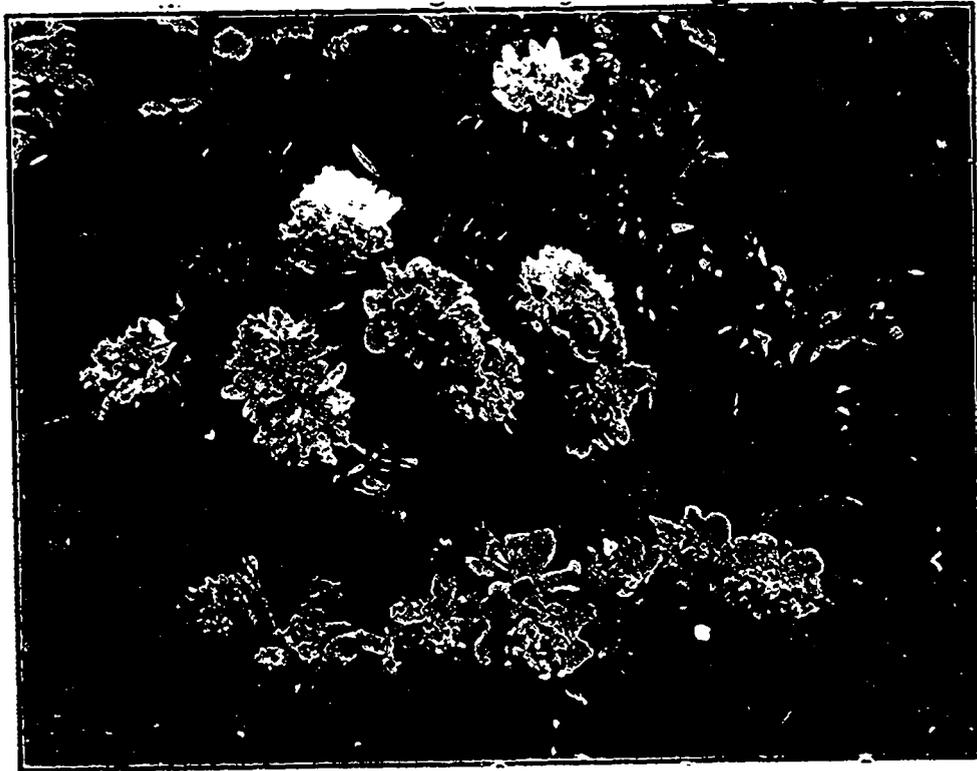
LATER BLOOM

From the early part of June the flowers are so abundant that I hardly know which to mention first. The pyrethrums are very pretty and are such good flowers for cutting; the long slender stalks and varied shades of pinks, reds and whites make them one of our best all-round early flowers. Be especially careful of any good double ones, as they do not come true from seed; most of them come single.

Near the front of my border are clumps of *dianthus* of various kinds. These are so varied in coloring and marking that they are an endless delight to grow.

I had almost forgotten the beautiful iris, well named "the poor man's orchid." Of course, not all kinds are suitable for our climate, but the Siberian and German varieties are amongst the most profitable plants in the border. They bloom freely, are past description with regard to the rich and delicate colorings and markings, and their solitary is always decorative.

The dainty columbine or *aquilegia*, also known as "doves in a nest," from the form of the back of the flower, is one of the indispensable perennials. There are many varieties of these. The long spurred ones are so fairy-like that one almost expects to see fairies dancing amongst them in the June moonlight. The varied shades, from white, lavender, pink, red, blue, purple, yellow and combinations of these give everyone a chance to have their favorite colors. I have never seen a wedding decoration all of columbines, but can imagine it would be unique if the white



Choice and Rare Varieties of French and English Paeonies

This illustration gives only a faint idea of the beauty of these paeonies, as grown by Mr. J. R. Thompson, Hamilton, Ont. They include *Marechal Vaillant*, a dark mauve pink; *Felix Crousse*, a brilliant red; *Madame Emile Galli*, a lilac white, tinged with pink; *Couronne d'Or*, a white with yellow stamens, the centre petals tipped carmine; *Mathilde de Roeneck*, lilac rose colour, a very large flower; and *Monsieur Jules Elie*, a pale lilac rose and a very fine variety.

and pale colors only were carefully chosen. I know that last year I longed to make a bride's bouquet with some white ones I had; they seemed to be growing for that. The leaves of the columbine are very beautiful. Did you ever use them with scarlet geraniums and a few dainty white flowers for a table decoration? In the fall they are beautifully tinted.

The various kinds of phlox occupy an important place about half-way back in the bed. The early and later varieties enable one to have continuous bloom. Joan of Arc, a tall variety, if not caught by the frost, makes beautiful white trusses late in the fall. The pinks, coral red and shaded ones, are such handsome flowers that no herbaceous border can afford to be without them.

The perennial larkspurs, shorter and not so compact in their growth as the delphiniums, are very beautiful and fill their corner with constant bloom.

The old-fashioned ribbon grass has its place, and very effective it is.

The dear old pansy is there also in all its various forms and colors.

Last year there were a few clumps of that beautiful biennial, the Canterbury bell. These were one mass of flowers, blue, white, and delicate pink.

The *Spiraea Van Houttei* is one of our best flowering shrubs. I have small specimens of these in the border, also lilacs and *hydrangea paniculata*. This does very well here and the immense trusses of bloom remain till spoiled by the frost.

The *hemerocallis* and *funkia* raise their stately heads and bring a touch of yellow where it is needed.

But the crowning glory of this particular border are the clumps of delphiniums. There is one, a rich violet, near a golden elder—truly a study of purple and gold too beautiful to describe. Then there are the blues, that seem to try to catch all the color of the noon-day sky, and the blues and mauves melted together, as only Nature can blend colors, and one lovely creamy white. Even the dainty humming birds seemed to think that they were especially blooming for them. They were constantly hovering in twos and threes up and down the blossom spikes. These stately flowers are in big clumps. Their neighbors have been carefully chosen, their immediate background spruce, golden elder, and variegated corn.

Last year there were several clumps of holyhocks, white, red, pink, and yellow in the background near the spruce trees. These old friends are not so easy to grow here as the delphiniums. After the first winter they are likely to kill out, the same plants may be grown every year if they are lifted and

stored in a root cellar for the winter.

Perhaps some people may think this must be a very mixed up kind of flower border—so many varieties (and I have overlooked one or two—lychnis, and a clump of common asparagus with its pretty foliage and red berries). It is a

mixed border. The only things kept in mind when planting were the relation of colors, the various heights of the plants, and to avoid all stiffness of arrangement. The result is what was intended—flowers from early spring till freeze up—a feast of beauty.

Concrete Hotbeds and Cold Frames

HERE is nothing which pleases the appetite so much as delicacies out of season. As for vegetables, such delicacies are not costly luxuries, and are within the means of anyone who will take the time to build and run a hotbed or a cold frame. Such a bed will make possible home-grown lettuce and radishes (and even violets) for the Christmas dinner. Moreover, by this means, one can depend on having good hardy plants for spring planting in the garden.

The fall months are the best in which to prepare the hotbed. A few boards and sash are all that is required, unless it is desired to avoid annual repairs, in which case it can be built of concrete. Locate the bed on the sunny, wind-protected side of a building. A four-sash bed is usually large enough except for commercial purposes. A standard hotbed sash is three feet by six feet. Lay out the bed six feet eight inches wide by twelve feet ten inches long. Concrete walls are six inches thick. Dig the foundation trenches two feet six inches deep within the lines given above. Make forms of one inch lumber to carry the south (front) wall six inches and the north (back) wall fourteen inches above ground. Forms are not required below ground level. The tops of the end walls slope to the others. Before filling the forms with concrete, test the dimensions of the bed by means of the sash. See that the sash laps the forms two inches on all sides.

MIXING AND PLACING THE CONCRETE

Mix the concrete mushy wet in the proportion of one bag of Portland cement to two and one-half cubic feet of sand to five cubic feet of crushed rock, or one bag of cement to five cubic feet of bank-run gravel. Fill the forms without stopping for anything. Tie the walls together at the corners by laying in them old iron rods bent to right angles. While placing the concrete set half-inch bolts about two feet apart to hold the wooden top-framing of the bed to the concrete; or make grooves in the top of the concrete for counter-sinking the sash to the level of the walls with an allowance of one-quarter inch for clearance. This can be done by temporarily embedding in the concrete wooden strips of the necessary dimensions. During this operation, by means of blocks nailed to the strips, make provision for the

centre-bars described below. Remove the strips as soon as the concrete stiffens. Take down the forms after five days. The extra two and five-eighths inches in length of the bed is allowance for the three centre-bars between the sash. These sash-supports are of dressed one-inch stuff, shaped like a capital T turned upside down. The length of the stem of the T is equal to the thickness of the sash and the top is three inches wide. Sufficient materials for the concrete will be supplied by fourteen bags of Portland cement, one and one-quarter cubic yards of sand, and two and one-half cubic yards of crushed rock; or fourteen bags of cement and two and one-half yards of pit gravel at a cost of ten dollars.

PREPARATION AND CARE OF THE HOT-BED

If the bed is to be used as a cold frame, it is finished when covered with glass. For a hotbed, dig out the dirt to the depth of two feet, tramp in eighteen inches of fresh horse manure well mixed with leaves or bedding and cover it with four to eight inches of rich soil. Bank the excavated earth around the outside of the bed. Put the sash in place, hang a thermometer on the inside and allow the bed to heat up. After a couple of days, when the temperature has dropped to eighty-five or ninety degrees, planting may be safely done. Seed catalogues contain valuable information as to the length of time necessary to produce the different kinds of plants.

During the midday, in bright weather, the bed will become too hot and must be ventilated for a short period by raising the sash on the side away from the wind. Water the plants in the morning only and ventilate later to remove the moisture from the foliage. On winter nights it will often be necessary to cover the bed with old carpets and boards.

It is a genuine pleasure to grow win-



A. Concrete Hotbed



A Crop of Onions Well Worth Harvesting

South-Western Ontario, including portions of Essex, Kent and Lambton counties, are becoming noted for their possibilities in the production of vegetables. Vegetables are grown on a scale unknown elsewhere in Ontario. Many are shipped across the border and up the lakes. This crop was grown near Sarnia.

ter vegetables and flowers for home use. If the supply exceeds the needs, there is generally a profitable market for such products.

Potato Storage

Two distinct types of storage rot may occur on potatoes. Both are common. The tuber may become infected with a dry rot in which case it gradually shrivels up, becomes powdery, and changes to a light brownish color; or a soft rot may occur in which the tuber is rapidly reduced to a soft shiny foul-smelling mass.

The organisms causing these rots, attack the potatoes either through wounds or following the attack of the wilt fungus. Primary infection may occur in the field and spread to healthy potatoes when the latter are placed under improper storage conditions.

It is important therefore to reject all tubers showing any signs of rot at digging time, and to provide a dry, well ventilated cellar for storage. A storage cellar that is warm and moist is very favorable for the rapid growth of the rot inducing organisms. The temperature of the storage cellar should be kept as close to 35 degrees F. as possible. Great care should be taken to avoid bruising the potatoes in digging and handling.

The most certain and satisfactory way to ascertain the vitality of vegetable seeds is to plant them in soil under actual conditions rather than make sprouting tests in various devices.

Vegetable Reminders

Squash and pumpkins keep best in a warm, dry place.

Clean straw from four to six inches deep should be placed on strawberries.

Go over the cabbage and other vegetables stored in the cellar and pick out the diseased specimens.

Cut and burn the foliage of the asparagus bed.

Prepare soil for next season's hotbed. Cover this deeply with horse manure so it will not freeze during the winter.

Fall plowing of the garden destroys cutworms and other insects, beside getting rid of fall weeds.

Go over the garden and burn all rubbish remaining. This will destroy many insects.

Carrots, beets, and salsify keep better if covered with a small amount of sand to prevent drying out.

Squash and pumpkins should be stored in a dry cellar or building where the temperature is between fifty and sixty degrees. Only mature specimens should be used, and these should be handled carefully to prevent injury.

Snow will be flying in many sections before the month closes. No time should be lost in attending to fall work. Just so much must be done, and the safe policy is to make haste before rough, stormy weather interferes.

The hardy onions should be mulched with coarse material as manure, straw or old hay, after the ground is frozen.

The cold frames and hotbeds should be cleaned of weeds or rubbish which would interfere with their use later in

the winter. Such rubbish also harbors mice, which are so annoying sometimes in frame work.

Horse radish, salsify, and parsnips are hardy roots and may be left in the ground all winter without danger of loss. There is a demand for these roots, however, throughout the winter and profits may be made larger and the spring work lighter by storing some of the roots to sell during the winter.

Make certain to have enough soil stored to start early vegetable plants. It should be selected from fields where troublesome diseases have not been known to occur.

Celery trenching should be well under way in many sections, where there is a large crop to be handled. Early trenching is a disadvantage to long keeping, but it is usually necessary to start the work soon after November 1 when there is a large amount to be stored.

The storing of late cabbage should also be delayed as long as possible. Burying is one of the best methods to keep the heads bright and crisp. Any method of burying is troublesome, but it usually pays to care for at least a portion of the crop by this method, unless special storage houses are available.

It does not usually pay to store vegetables which can be sold at fair prices in the fall. The grower should always take into account the cost of storing, risk of losing part of crop, shrinkage, and additional expense in preparing for market.

A supply of rhubarb may be had during the winter if a few clumps are taken up before the ground freezes and put in boxes or on the cellar floor. These clumps may be broken into pieces and covered about one inch deep with soil. Water thoroughly and keep dark, so that only a small leaf surface will be formed. It is well to let the roots freeze until about December twentieth.

The forcing of rhubarb is a profitable industry where there is equipment for such work. The old roots may be dug in the fall, and the large roots used for forcing during the winter and the smaller ones replanted in the open the following spring.

Rhubarb forcing may begin at any time. If the ground is not frozen too hard, a mould-board plow may be run along one side of the row and the roots may then be removed with ease. Allow them to freeze a few days before planting. Then store a supply in an outbuilding, cover with soil and hold them for later planting.

Onions may be forced in warm cellars. The partial darkness will make the stems more tender. If soil is placed between the stems as the tops grow it will increase the length of the white tender portion.

The Canadian Horticulturist

COMBINED WITH

THE CANADIAN HORTICULTURIST AND BEEKEEPER

With which has been incorporated
The Canadian Bee Journal.

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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.

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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	11,560	September, 1913	13,729
March, 1913	11,209	October, 1913	13,778
April, 1913	11,970	November, 1913	12,967
May, 1913	12,360	December, 1913	13,233
June, 1913	12,618		
July, 1913	12,686	Total	150,293

Average each issue in 1907, 6,427
" 1913, 12,534

Sworn detailed statements will be mailed upon application.

OUR GUARANTEE

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

Rogues shall not ply the 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.

EDITORIAL

THE LATE DR. WM. SAUNDERS

The late Dr. Wm. Saunders, formerly director of the Dominion Experimental Farms, who died at London, Ont., or September 13, 1914, in his seventy-ninth year, was keenly interested in many things, but we believe that in horticulture he had his greatest delight during the past thirty-five or forty years. As a diversion from the confining occupation of a chemist, he, when a young man, sought the pleasures and benefits that the culture of fruits and flowers brings to those that love them. As early as 1868 he began to plant a fruit farm near London, Ont., and a committee of the Ontario Fruit Growers' Association visiting this farm in 1873, have, in their report the following words: "The fruit farm of Mr. Saunders in the immediate vicinity of London, is the most extensive in the western portion of the Province of Ontario. It consists of a hundred acres under the closest fruit culture."

When the large fruit farm was just beginning to produce a considerable crop of fruit, the management of it became burdensome and Dr. Saunders therefore sold his farm and purchased a smaller place nearer to the city where, without any thought of making it profitable financially, he could continue to cultivate fruits and flowers in great variety. It was on this smaller farm, especially, that he collected ornamental trees and shrubs in great variety and obtained the knowledge of them and their culture, shown by him in later years, and which enabled him to intelligently supervise the work in horticulture of the Dominion Experimental Farms.

The desire to originate new, and if possible, better varieties, was very strong in Dr. Saunders. He was one of the earliest hybridizers in Canada. He believed that the best way to obtain new varieties of merit was by combining the good qualities of two in one. In 1872 he read a paper before the Ontario Fruit Growers' Association on "Experiments in Hybridizing," in which he described the methods adopted by him and the results of his work between 1868 and 1872. "For five years," he states, "I have been working more or less in this interesting field and have experienced some successes and many failures." Beginning in 1868 he made crosses with the gooseberry, grape, raspberry and pear, during the next five years. It takes a long time to originate, thoroughly test, propagate and introduce a new variety, and while Dr. Saunders did not live to see all his best things in the hands of the nurserymen, he had the satisfaction of knowing that at least some were well and favorably known. Elsewhere in this issue more about his work is told by his former co-worker, Mr. W. T. Macoun, now Dominion Horticulturist. In the death of Dr. Saunders horticulture has lost one of its best friends and warmest advocates.

A LESSON FOR ONTARIO

The cooperative apple growers' associations of Nova Scotia have set an example this year in cooperative marketing which should not be lost on the local associations in Ontario. In Nova Scotia, where practically all the local associations are united through the United Fruit Companies Ltd. of Nova Scotia, the growers have been

able to charter numerous steamships and thus to send their product with the least possible delay to the European markets. They have also sent special trains of cars loaded with their apples to the western markets in record time. By the enterprise thus shown they have triumphed to a very considerable extent over the adverse conditions of even such a year as this.

In Ontario, where there are even more local associations than there are in Nova Scotia and where the apple crop is considerably larger, only a small portion of the local associations are united in a central organization. Thus they have been unable to unite their forces, to the same advantage as have the growers in the east. Instead of working together to market their large crop, Ontario Cooperative Associations have been underbidding each other, especially on the western markets, and one association at least has been detected making false and derogatory statements about the pack of other associations. In some cases local associations have sold fruit at what has amounted to a loss.

If this year's experiences lead the Ontario cooperative associations to unite in a large central organization, such as controls the situation in Nova Scotia, it will be looked back to in future years as a season which marked a great advance in the fruit marketing methods of the province. Even yet, if the local associations will get closer together this season, they should be able to market the remainder of the crop with advantage to all.

A NEW SITUATION TO FACE

Now, that the Panama Canal is rapidly reaching the point of completion and operation, the fruit growers of eastern Canada will soon have some new problems to face. The apples shipped from British Columbia and Pacific Coast States have made a high reputation for themselves on the European markets to say nothing of the oranges and other tender fruit produced in California. The growers of the west have established a name for their fruit in these markets in spite of high railway and shipping charges. The completion of the Panama Canal is going to greatly reduce the transportation charges on their fruit. To the extent of this reduction they will be able to compete that much more favorably with the eastern growers for the markets of the eastern coast states and of Europe.

British Columbia papers recently have been pointing out that while no rates from British Columbia points to Europe have as yet been announced, rates from Seattle and Portland to Europe on dried fruits and canned goods will be thirty-seven and a half cents a hundred pounds. Apples and dried fruits usually go at the same rate, and if thirty-seven and a half cents a hundred pounds is fixed for boxed apples, even with the extra refrigerating charges, Washington growers will save from one hundred and twenty to two hundred dollars a carload on shipments to England and Hamburg. British Columbia growers may expect to obtain rates similarly advantageous when traffic begins by way of the canal from Vancouver.

The first effect of the improvement in shipping charges will be to increase the production of fruit in the west. This will constitute the chief danger to the eastern fruit growers. In time, however, conditions will tend to balance themselves once more, as the final effect of the completion of the canal will be to increase the land values of western orchard land to an extent exactly corresponding with the reduction in ship

ping charges. As it will then be more difficult for fruit growers to obtain a start in fruit growing or to enlarge their permanent acreage the benefits at first derived from the canal will in time be offset by the burden imposed on western growers by the increased value of their land.

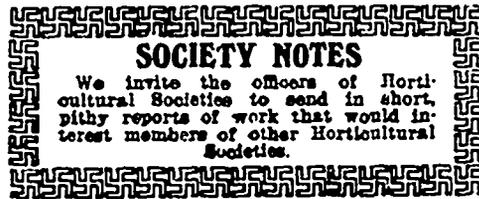
An examination of the financial statements of the Ontario Horticultural Association for the past few years shows that when the balance brought forward each year is eliminated approximately one half of the receipts of the Association have been paid out in the form of an honorarium or salary to the secretary of the association, and in the form of small grants to his stenographer and similar help. The secretaries of most horticultural societies receive little or no remuneration for what often are most arduous labors. They perform their work because of their desire to promote the cause of horticulture. The local societies generally have need for all the money they receive. Still they wisely support the provincial association by making grants to it of from two to five dollars each out of their limited funds. The secretary of the provincial organization is a government official who receives a liberal salary from the government to superintend the work of the horticultural societies. His duties as secretary of the provincial association are light indeed. It is a little difficult to understand, therefore, why he should receive such a large share of the funds of the association, derived, as they are from the funds of the needy local organizations. Protests against this condition have been made privately in the past without effect. It would seem, therefore, as though the delegates to the approaching convention might give the matter a little of their attention.

The Department of Trade and Commerce at Ottawa, under the direction of Sir Geo. E. Foster, has shown commendable enterprise this year in appropriating fifteen thousand dollars to advertise the apple as an article of diet in the consuming centres of Canada. The advertisements that have been running in the press have been well written and should be productive of good. It is unfortunate that it was not found possible to advise would-be buyers where they could procure the fruit. Local growers who have fruit for sale would do well to take advantage of the advertising that has been done by the Government by placing small advertisements in the papers which have been carrying the advertisements of the Government, stating the varieties of fruit they have for sale and their price by the box or barrel. Some growers who have already done this have been well repaid for their outlay.

The annual convention of the Ontario Horticultural Association will be held this month in Toronto. As usual it will be conducted in connection with the Ontario Horticultural Exhibition. The provincial association has done much more to promote the interests of the local horticultural societies than most of the societies realize. We hope, therefore, that the local societies at their annual meetings this month will make it a point to see that delegates are appointed to attend the convention in Toronto of the Central Association.

One point that was clearly revealed at the Dominion Fruit Conference last month was that fruit growers are pleased with the appointment of Mr. D. Johnson as Dominion Fruit Commissioner and that

they have confidence in him. While Mr. Johnson had had as wide an experience as a fruit grower—and a successful one, too—as probably any man in Canada, he is unassuming and modest and thus the more easily obtains the hearty cooperation of those whose support he requires. We predict with confidence that through his efforts much will be accomplished during the next few years on behalf of the fruit interests of Canada.



SOCIETY NOTES

We invite the officers of Horticultural Societies to send in short, pithy reports of work that would interest members of other Horticultural Societies.

GUELPH

The Guelph Horticultural Society held a flower show and sale this fall in aid of the Red Cross Society, the returns of which were handed over to be used for the benefit of the wives and families of the volunteers who are now representing the city on European battlefields. The show was held in the armoury and one hundred and sixty dollars was realized. Messrs. A. and J. Gilchrist provided five thousand beautiful gladioli free of cost. They were sold in no time and three times the number might have been disposed of. Some chrysanthemums donated by Captain Taylor also found a ready sale. The variety, Princess Patricia, was much admired. An interesting programme of songs and music was provided.

DUNDAS

The Dundas Horticultural Society started its fall and winter meetings in October by an illuminated lecture on bulbs and their treatment. Excellent views of tulips, daffodils, glaxinias, calceolarias, and some beautiful orchids, were shown from the gardens of Sir Edmund Osler of Toronto. The lecture was given by Mr. Allen, who is Sir Edmund Osler's head gardener. Mr. Allen is a man well up in all branches of horticulture. He has had a wide experience in England and Ireland. It is our intention to keep up these illustrated lectures and thereby try to create a greater interest in flowers, not only among the members of our Society, but the town in general.—J. A. Kyle, Secretary.

ST. THOMAS

Rivalry in the lawn, vegetable and flower garden contest conducted by the St. Thomas Horticultural Society this year, was very keen. Seventy-five places were entered. The Collegiate Institute, Jos. Clarke, caretaker, won the silver medal and seven dollars in cash offered for the best school. The Balaclava St. School, with I. Wright, caretaker, and Wellington St. School, with Jos. Gillard, caretaker, tied for second place. The Merchants' Bank won the first prize offered for floral beautification of business places. Handsome prizes were offered in the different classes. These were on exhibition for some time in one of the city stores.

At a meeting of the Ginseng Growers' Association of Canada, held in Toronto, September 9th, the following officers were elected: President, Mr. Austin; first vice-president, D. Menzies; second vice-president, Mr. Leary; secretary, P. Wilson; executive, Rev. Dr. Medd and Mr. Sawyer.

British Columbia

New regulations empowering the British Columbia provincial fruit inspectors to seize all infected fruit, no matter where it is on display, even though it has previously been passed by the inspectors, have been made by the Provincial Board of Horticulture. This is the most drastic step yet taken in the campaign against the importation of fruit affected with any form of plant or insect disease. Cases have been reported where evidences of infection were not apparent at the time of inspection, but the shipments, on being opened up on the fruit stands a few days later, showed that infection had ripened. These shipments will no longer be protected by the inspector's certificate and will be open for inspection and seizure as if they had never been previously inspected and passed.

Another regulation aimed at stamping out the risk of infection from codling moth calls for the inspection of all fruit cars that enter Canada from any point in the United States. These regulations, under the powers granted by Sir John Thompson, when he introduced the Horticultural Act over twenty years ago, acquire the force of statute law after being gazetted in the official Gazette.

Another important decision of the Board of Horticulture is a request to the Ottawa authorities to place "black leaf forty" on the free list. Black leaf forty is a preparation of nicotine and sulphur which is used extensively for spraying purposes. It is recognized as the best contact insecticide known, and is made only in Kentucky, where a special kind of tobacco is grown for its manufacture. At present it pays a duty of twenty-seven and a half per cent. in Canada. In the United States it retails for twelve dollars and a half a gallon. In this province, buying it in very large quantities, the Government has to pay fifteen dollars and twenty cents a gallon, the growers still more. Carbon bi-sulphide, which is used for fumigating insect pests, was placed on the free list a short time ago.

The Board of Horticulture, which has charge of horticultural regulations for the province, is composed of the Minister of Agriculture; Deputy Minister, W. E. Scott; Fruit Inspector, Thomas Cunningham, and a number of prominent fruit growers from each district, including Messrs. Stratfield, Metcalfe, Ricardo, McHardy, Palmer and Woodward, representing respectively Vancouver Island, The Lower Mainland, Okanagan, Kootenay, Kamloops and Victoria districts.

In order to thoroughly abolish any risk of fire blight infection in the Okanagan Valley, a field corps of ten men has been out, under instructions from the Government fruit inspector to inspect every tree in every orchard in the Okanagan. Any traces of fire blight were followed up, and infected limbs or trees were committed to the flames. The evidence of fire blight in the province has only been slight, but Inspector Cunningham and his staff are determined to completely eradicate every vestige of the blight for fear it gets a foothold and works havoc in the orchards of the Okanagan, as it has done in many of the orchards of the adjoining state of Washington.

The United Fruit Companies of Nova Scotia Ltd. some weeks ago sent F. M. Chute to South America to find a market for a portion of their crop of apples. Trial shipments during the past few years have somewhat prepared the field.

Fruit Conditions in Winnipeg and the West*

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

SHIPPERS 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		Approx.
540 cars apples	.....	83,200 lbs.
30 cars apples	.....	18,000 boxes
107 cars grapes	.....	267,500 bskts.
139 cars grapes, peaches, plums, tomatoes, apples	.....	347,500 bskts.
BRITISH COLUMBIA		
22 cars apples	.....	19,200 boxes
12 cars crab apples	.....	7,200 boxes
NOVA SCOTIA		
2 cars apples	.....	400 lbs.
IMPORTED		
116 cars Am. apples	.....	20,880 lbs.
145 cars Am. apples	.....	87,000 boxes
24 cars peaches, plums, cherries, apricots	.....	22,180 crts.
10 cars pears	.....	4,500 boxes
26 cars strawberries	.....	12,545 crs. qt.
10 cars strawberries	.....	8,154 crs. pts.
7 freezers and 15 cases do.	.....	730 qts.
285 cases do. express	.....	7,720 lbs.
14 cars tomatoes	.....	8,642 crts.
ON HAND DECEMBER 31ST, 1913		
3,152 barrels.	15,666 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.		
36 cars Washington apples-boxes.		
5 cars Am. apples-bbls.		
65 cars Cal. and Wash. small fruits.		
25 cars raspberries and loganberries-pints.		
10 cars blackberries.		

ONTARIO

25 cars barrel apples.
 28 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 harder 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 13th, 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 cooperate with them.

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

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 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.

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 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.

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TWICE THE LIGHT ON HALF THE OIL

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.

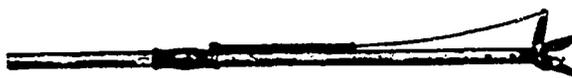
The annual report of the provincial horticulturist, Mr. A. G. Turney, which has been issued recently, shows that the operations of the illustration orchards have proved successful, as they have been operated at a profit. Part of an orchard in Lower Cloverdale, Albert County, was taken over in 1911, and 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

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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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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, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

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

I know it will wash a tub full of very dirty clothes in six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it 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 washwomen'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.



Our "Gravity" design gives greatest convenience, as well as ease of operation with quick and thorough work. Do not overlook the detachable tub feature.



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 no 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 715,167,

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 Shutt, Prichard 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 95	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 30	2 60	1 63	1 60
Red Starks	3 40	2 30	2 10	1 30
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 39
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
Fallwaters	3 10	2 54	2 00	1 60
Ganos	3 60	3 02	2 90	2 35
Ben Davis	3 51	2 83	2 43	1 74
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 50

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.

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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 those 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. D. Byshire, 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. Winalow, 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-Hatzic 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 3/4 lbs. Guaranteed. Fully described in "Profits and Pounds," an interesting booklet on weights. Sent free.

Farm Engines
Pumps
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The Canadian Fairbanks - Morse Co., Limited

Montreal Toronto Winnipeg Calgary
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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	£ 780,036
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 889,982 barrels, value \$8,201,884.

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

From—	
Canada	£ 32,169
Australia	80,650
Cape of Good Hope	20,929
Other British	2,498
Total British	£ 86,246
United States	£282,470
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 £11,580, pears £9,674, plums £5,961, peaches £4,090, naartjes £2,217, and pine-apples £1,687.

Boxes vs. Barrels

F. Jans, 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.

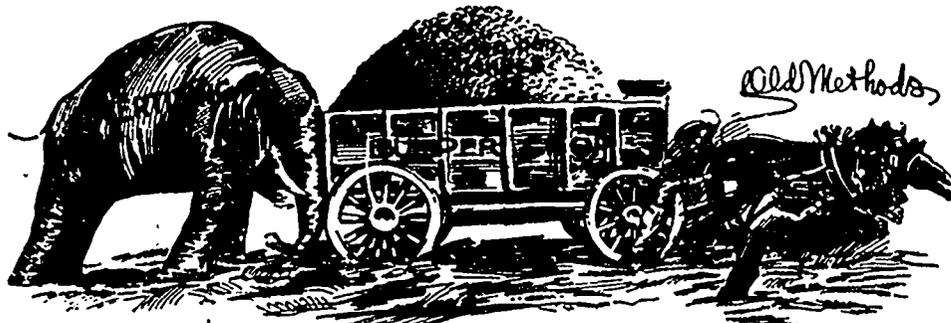
His board amounts to a drop of oil every twelve months—that's all he pay he asks.

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—Princess, Immense scarlet; Halley, the earliest pink, \$1.50 per 100; America pink, Anna Wigman, yellow and red; Huls, the finest blue; Taconic, bright pink and crimson; Monnerott, 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.

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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.

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ST. JOHN, N.B.

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Order from ENGLAND NOW

KELWAY'S

QUOTE and CAN DELIVER

Anise	Cauliflower	Lucerne	Rape
Beet	Colery	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 Vermilion 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 botanic 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.

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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

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



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.

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Owen Sound, Ont.



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FERN OR BULB PANS
3/4 AZALEA POTS
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The Review and American Bee Journal one year, \$1.50.
All three for one year only \$2.00.
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Best Market Price. Cash or Exchange

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BRANTFORD, ONTARIO

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



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Good Prices Always

For Your Fruit and Vegetables

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

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

H. PETERS
88 Front St. East, Toronto

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



FOR SALE AND WANTED

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

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

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

ASK DAWSON. He knows.
IF YOU WANT to sell a farm consult me.
IF YOU WANT to buy a farm consult me.
I HAVE some of the best Fruit, Stock, Grain and Dairy Farms on my list at right prices.
H. W. Dawson, Ninety Colborne St., Toronto.

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 moving 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 follows:

Where any apples, apricots, bananas, cherries, currants, figs, gooscherries, grapes, loquats, lemons, nectarines, oranges, passion fruit, peaches, 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 $\frac{3}{4}$ 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 ..	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 $\frac{1}{4}$ 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 $\frac{3}{4}$ x7 $\frac{1}{4}$ 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 $\frac{1}{4}$ 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 $\frac{1}{4}$ 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 $\frac{1}{4}$ x10 $\frac{1}{4}$ 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 round.

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. I. Hillborn, Leamington, Ont.