

Expert Opinions on Dissemination of San Jose Scale by Infested Fruit

# The Canadian Horticulturist

DECEMBER, 1907

Volume 30, No. 12

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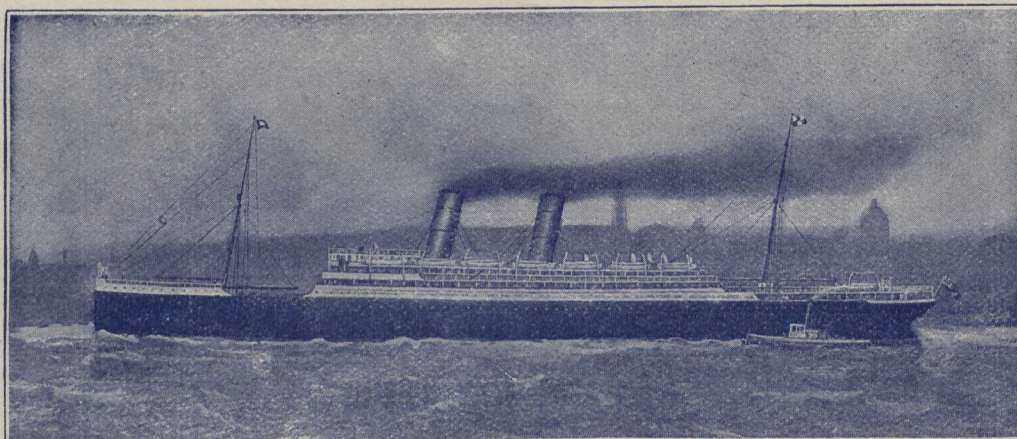
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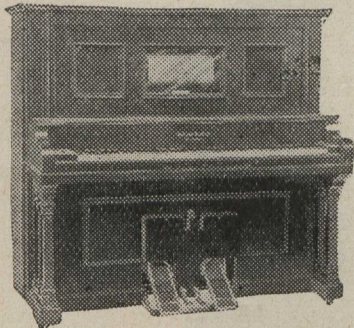
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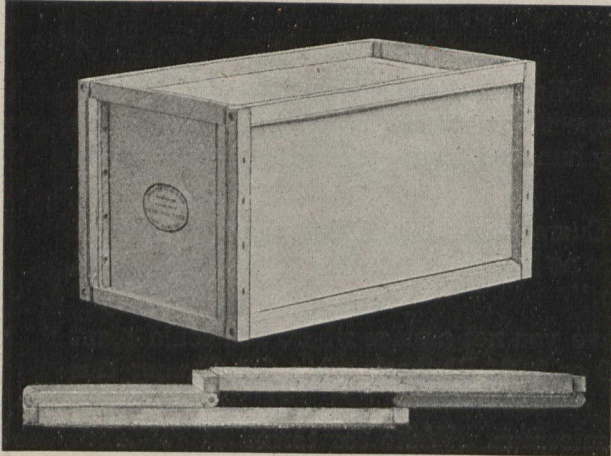
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## The Canadian Horticulturist

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# The Canadian Horticulturist

Vol. XXX

DECEMBER, 1907

No. 12

## No Danger from San Jose Scale-Infested Fruit

WHEN the last issue of THE CANADIAN HORTICULTURIST was on the press, the newspapers of Ontario and the fruit growers of the Grimsby section of the Niagara district were much excited over the importation of San Jose scale-infested fruit from the United States. The fruit was imported for canning purposes. It came from New Jersey, not from Maryland or Delaware, as was erroneously reported. An inspector was commissioned with instructions to investigate the situation and to take steps to prevent the spread of the pest from the infested fruit to the orchards of the locality. The inspector called a meeting of the fruit growers to discuss the question and to obtain suggestions. Two meetings were held, and a deputation of fruit growers waited upon the Minister of Agriculture at Toronto.

Three carloads of the fruit were badly infested; the others did not have so much scale. The inspector in charge had the cars sealed and notices posted forbidding the removal of the fruit, except under Government supervision. The pears were carried to the factory in sacks, carefully guarded. Before peeling each sack of pears was immersed in boiling water for five minutes. After peeling, the skins were boiled again for fifteen minutes to make sure that none of the scale would escape. The cars and storage buildings were fumigated. All bags, baskets and crates that had contained the pears were burned to ashes, together with all sweepings from both cars and factory. One of the cars was deported. Another, that had been delayed at St. Catharines, was also sent back. All these precautions, while prompted by a commendable object, were unnecessary.

It is practically impossible for San Jose scale to spread by means of infested fruit. Experiments on this continent and in Europe prove this to be so. Not one instance of infestation of scale from this source is known. The leading authorities in Canada and the United States are emphatic in the opinion that there is no danger of dissemination by this means. Further comments on the

question appear in the editorial columns of this issue.

In reply to some questions sent by THE CANADIAN HORTICULTURIST to a number of prominent entomologists in Canada and the United States, many interesting and valuable letters have been received. Some of them are published herewith. Others will appear in the January issue. These letters are from men who know.

### For Horticultural Societies

The Napanee Horticultural Society was organized twelve years ago, and since its organization, the society has subscribed for THE CANADIAN HORTICULTURIST for its members. Experience has taught us that it is the one publication devoted specially to our interests, and that we would not be doing our duty if we did not place a copy in the hands of each of our members. We have observed the improvement that has taken place in the paper from time to time. The many useful hints given for the benefit of amateur horticulturists are of particular value. What is true of the Napanee society is equally true of every society in the province. I know of no way in which the directors can spend their money so profitably as in subscribing for THE CANADIAN HORTICULTURIST.—W. S. Herrington, President Napanee Horticultural Society, Napanee, Ont.

Prof. Wm. Lochhead, Biologist, Macdonald College, Ste. Anne de Bellevue, Que., contributes the following: "In these days when large quantities of fruit infested with San Jose scale are shipped to markets in all parts of the country, it becomes a matter of much importance whether or not the San Jose scale can be spread by such shipments. Germany and other countries have very stringent quarantine regulations regarding the importation of fruit infested with scale, believing that scale can be spread by

infested fruit. The German authorities have failed, however, after many experiments extending over several years, to find a single instance of infestation of scale from such a source. This result is such as we might naturally expect. None of the scales found on fruit shipped for export are mature; the large percentage of them are but half-grown. When scales are dislodged from the skin of the fruit their mouth-parts are usually broken, so that they are incapable of feeding and growing. Should parings of infested fruit be thrown on the rubbish heap or in the back yard it is hardly probable, scarcely possible, that the immature scales will find conditions suitable for their development for three months up to maturity, and the production of living young. The parings soon lose their moisture and become dried up, followed by the death of the young scales.

"Sometimes sparrows and ants, which have an attraction for rubbish heaps, have been accused of being agents for the carrying of the scale to shrubs and trees. To my mind we need fear nothing from this source, as the scales to be carried are not in the active, crawling stage. They are, as I have said, in the immature stage, torn from their resting place, and with a long period of development ahead of them.

"On the other hand, I have sometimes seen the crawling larvæ of the San Jose scale on market fruit that had been picked but a few days. In my judgment there is a possibility in such cases that the scales may be spread to shrubs and trees by such agents as sparrows and ants before the fruit is consumed. I remember a case where a tree became infested with scale that had escaped from baskets piled occasionally at the foot of the tree. This danger of possible infection is referred to in my bulletin, 'The San Jose and Other Scale Insects,' page 21, published in 1900 by the Department of Agriculture, Toronto. However, as soon as the crawling larvæ become fixed and secrete a scale, there is no danger that it will survive after disturbance even if transplanted. Therefore, in long shipments, where the crawl-

ing larvæ have had time to fix themselves, no danger need be feared."

Dr. James Fletcher, Dominion Entomologist, Ottawa: "I have always held that there is no danger from spreading the San Jose scale by means of infested fruit as handled in commerce, and particularly is this the case when the infested fruit is coming in at this time of the year to a canning factory, which is practically in an infested district. I would, however, suggest as a further precaution that the boxes or baskets be kept away from all growing trees."

#### NO DANGER OF SPREAD

Dr. Charles J. S. Bethune, Professor of Entomology, O.A.C., Guelph: "I do not think that there is any danger of spreading the San Jose scale by means of infested fruits which are imported for canning purposes. No doubt, some of the scales are alive when the fruit reaches Grimsby, but as soon as the skin is pared off, it speedily dries and the insects are deprived of their food and starved to death. I do not know what the canners do with the waste; probably it is fed to pigs or otherwise disposed of. If thrown into heaps or pits, fermentation would soon take place and would destroy any living scales that there happened to be. With very little care as regards the disposal of the waste material, there should be no danger of spreading the scale. At this time of year they would not be moving at all, and it is extremely improbable that any of them would reach a fruit tree."

Prof. T. B. Symons, State Entomologist for Maryland: "In regards to the distribution of the San Jose scale by infested fruit, would state that I do not consider that there is a remote possibility of the pest being disseminated in this manner under the ordinary means of moving or transportation of fruit."

Dr. L. O. Howard, Chief, Bureau of Entomology, Washington, D.C.: "There has been from time to time more or less agitation in regard to the possible introduction of the San Jose scale into localities on imported fruit. Although this bureau has kept in close touch with the San Jose scale situation since the introduction of this insect into the east, we have never learned of an instance where the scale has been so established."

"You will recall that fruit, infested with the insect, was shipped from California to the east for many years before its actual introduction occurred by means of infested nursery stock. Fruit is eaten in such places and the parings and waste material are disposed of in such a way that it would be very exceptional indeed for such fruit, or the young scale that might hatch on them, to gain access to trees

on which the scale could make lodgment. While it is possible that such could occur, the conditions necessary are such as to render it extremely improbable. In the instance of importation of San Jose scale-infested pears for canning purposes, I would have no uneasiness whatever that the scale might become thus established."

Mr. H. O. Houghton, Entomologist, Agricultural Experiment Station, Newark, Del.: "There is very little danger of increasing the distribution of the San Jose scale by means of infested fruit; and this should be especially true in the case you mention, where fruit is shipped into a cold country like Canada in the fall of the year. I have yet to know of the first instance where it has been definitely determined that the distribution of this pest has been increased by means of infested fruits."

Prof. John B. Smith, Agricultural Experiment Station, New Brunswick, N.J.: "Under ordinary circumstances, I do not think that there is the slightest danger of spread of the San Jose scale from infested fruit. In the particular case mentioned by you, it all depends upon circumstances. If the cannery is not near a fruit orchard and if the refuse, peelings, and so forth, from the pears are not taken out into an orchard and dumped around the trees, I cannot see any conceivable chance of infestation. At this season of the year the scale is not ordinarily active. On fruit, in a warm place, there might be some breeding. In the open, not one out of 1,000,000 larvæ would stand the slightest chance of getting upon a tree in condition to reach a stage that would enable it to pass the winter. It would be almost impossible to infest trees at this season of the year from fruit parings even by taking the greatest care to insure that result. Any ordinary care in the disposition of the fruit would absolutely bar the danger."

#### NO RECORD OF INFESTATION

Prof. M. V. Slingerland, of Cornell University: "I have said many times in print and in public that the danger of disseminating the San Jose scale by means of infested fruit is very slight. There is scarcely one chance in 10,000 that a new infestation by this pest will be accomplished by the introduction of infested fruit only. So far as I know, there is no authentic record of such a new infestation ever having been brought about by infested fruits. One can easily conceive, however, how it might be accomplished in the following manner: If some of the scales on the fruits were mature and young lice were being born, and such a fruit were placed in a tree, some of the young lice might crawl from the fruit on to the bark and establish themselves. It has been suggested that

the peelings from such infested fruits, if thrown near trees, might easily infest them. If recently-born, crawling lice were on such peelings, which were thrown so that they touched the bark of the tree, it, of course, would be possible for some of the young lice to get on to the bark of the tree. While, therefore, it is possible to infest trees by means of infested fruit, there is really very little danger of the San Jose scale being disseminated by this means. The insect is now very widespread all through the United States and Canada, and is constantly appearing in new localities where young orchards are being set. In spite of the precautions of nurserymen and inspectors, even when they claim to fumigate their stock thoroughly, the scale is being shipped into new localities constantly."

#### ENTIRELY IMPOSSIBLE

The Economic Zoologist for Pennsylvania, Mr. H. A. Surface, M.Sc., discusses the question as follows: "I take pleasure in replying at once to your letter, asking if in my opinion the San Jose scale can be disseminated on pears or other ripe fruits shipped for canning purposes or for other purposes. After a careful consideration of this subject, extending through a period of six years, and after having made experiments along this line and reading all literature possible upon the subject, I am firmly convinced that it is entirely impossible to disseminate San Jose scale upon fruits. I conscientiously believe that it is absolutely impossible to spread scale by such means. Laws providing for the destruction of all infested fruits are unjust both to producers and consumers as well as shippers, and are based upon ignorance of practical and important scientific facts in nature. While the San Jose scale does live upon green fruit, it either dies or entirely ceases to reproduce when the fruits commence to ripen. It is well known that after it is once fixed it can never free itself and fix again. Thus, the individual specimen found upon fruit could not by any possible means be carried to other fruits or trees and continue to live, and the only possibility of such spread would be by the very young (less than two days old) insects produced by the parent and disseminated after arrival at their destination. As there is no reproduction by the San Jose scale upon ripe fruits, there is no possibility of this contingency. I wish that all entomologists and horticulturists would aid in emphasizing this important point. I am certain that no man can prove to me anything different from what I have heard written. *These statements are positive* and I risk my scientific reputation should I make an error in discussing a thing so important."





Some of the Delegates and Speakers at the Recent Convention of the Ontario Fruit Growers' Association in Toronto  
For the names of the persons numbered see page 305.

## Three Questions on Fruit Culture\*

Prof. G. Reynaud, La Trappe, Que.

I HAVE catalogued nearly all the questions put to me by correspondents on fruit growing, concerning the making of orchards, the planting, size, and so forth. Among all these different questions, three present themselves to me most often. The first of the three is: Who are the people who should plant orchards?

WHO SHOULD PLANT ORCHARDS?

The reply is simple—everyone; that is to say, all those who own more or less land. One should not see in this province farms without orchards; if not as the principal undertaking, at least as the first accessory, and the most beautiful adornment. It is not necessary to demonstrate that the apple thrives well in our country. Without doubt, there are districts in which they do not thrive perfectly, but there is room to hope, thanks to the persistent efforts of the pomologists, that these districts shall become apple-growing districts, if not with already existing varieties, at least with others which may be obtained and which would thrive there. It is recognized everywhere that by the cultivating of the soil, we are able, in a certain degree, to help vegetation, so that the wood ripens itself before the greatest colds and thus diminishes the havoc caused by our rigorous climate.

There is not a single farmer, to my mind, who cannot have more or less apple trees on his place. What is more beautiful than the neat, white homestead of the farmer, displaying itself on a dark green ground, picked out with spots of brightest vermillion. It is the orchard which makes the finest adornment to this residence and the passer-by will be captivated, in spite of himself, with such an attractive landscape.

We can, moreover, attribute to the apple an economical part, very real and important. It not only adorns the country, but also it makes those having other duties to love and often to return to the fields. The development of horticulture, the cultivation of fruit, shall be a means of overcoming the exodus to the cities which we deplore so much. This would be a good statistic to establish in those districts which are the most depopulated.

If I were a doctor, I would not hesitate to affirm that, from a hygienic point of view, the apple constitutes one of the best foods, and that the father of a family, who procures them for his children during all seasons of the year, will see his children grow in strength and wisdom. Nearly everyone likes apples. It is sufficient to prove this by referring to the systematic plundering of the orchards in the neighborhood of cities and populous towns.

There is a class of people who are able

to render fruit-growing a great service by bestowing on it a few crumbs of their superfluous time and money. I make allusion to those of the "liberal professions," those who, following these professions, exercise a considerable and worthy influence amongst others in their vicinity. What could they not do for horticulture? As an example, take that doctor who does not fear to plant amongst the Laurentians to the north of Montreal, at Lac des Seize Iles, an orchard of 500 apple trees. His example should be followed by a large number of others. This, which to-day is the exception, should become the general rule.

The classical colleges should, at the commencement of their studies, inculcate a taste and love for this branch of knowledge. Many of our classical and commercial colleges do not own the smallest orchard. The treasurer of a college, to whom I made this remark, replied that they had already tried the planting of apple trees, but that the plundering of the fruit had discouraged the authorities and that the experiment had not been tried again. I know how this fallacy would appeal to a college treasurer, when he would see the fruit being gathered by those whom it was not intended for. But how the fallacy would be sweetened, if their highest purpose was, in planting the orchard, to give to the students the first notions of

\*A portion of a paper read at the summer meeting of the Pomological and Fruit Growing Society of the Province of Quebec.

arboriculture, planting, grafting, pruning, spraying, and so forth. I could

in a parish, the more fruit will be sold. In the single parish of St. Joseph du Lac,

spring fully equipped to do its part in producing big crops of big red berries. No argument is needed in behalf of a practice that will accomplish all of these desirable results.

What shall be used as mulch? The things pressed into service as mulch are numerous and vastly different, and range from pine cones in the south, where the vines require no covering, to seaweed along the North Atlantic coast where nature is shy of rains and grasses. The most satisfactory mulch we have found is old and somewhat rotted wheat straw, and following in the order of excellence may be named oat and rye straw, shredded corn fodder, thickly sown corn, sorghum pomace and marsh hay. Old leaves are all right to place between the rows, but something having the form of straw should be put over the plants.

The time to apply is in the fall after severe frosts have begun. Up to that time the root development of the strawberry plant continues, and this the grower wishes to encourage, of course. Then the mulch comes on to protect the plants from injury and to insure a healthy spring foliage, which in turn makes certain a vigorous growth of the plant when the gentle rains and warm sunshine of spring return.

Clean up and burn all fallen limbs, and so far as possible reduce the number of hiding places for hibernating insects.

Protect the young orchard against mice and rabbits by wrapping the trunks of the trees with felt paper or veneer.

THE CANADIAN HORTICULTURIST would be pleased to receive letters from readers who have had experience in the making and use of cement posts for vineyards. State how to make and the cost compared with wood.



Summer Fruits in Antiseptic Solutions at Ontario Horticultural Exhibition

A part of the exhibit from the Fruit Experiment Station at Burlington, of which Mr. A. W. Peart is manager.

dwel longer on this subject and verify the results obtained in certain places.

Finally, the more orchards there are

bordering on La Trappe, there was nearly \$20,000 worth of fruit sold this autumn.

## Mulching the Strawberries

W. H. Burke, Three Rivers, Mich.

THE time has gone by when the question "to mulch or not to mulch," need be discussed. Good horticultural practice demands that mulching be done not only as protection from the severe cold of winter, but because, first, alternate freezing and thawing are rendered impossible by mulching, thus preventing the straining and breaking down of the plants; second, mulching keeps the plants dormant, preventing to a degree extra-early blooming and reducing the danger from late spring frosts; third, mulching insures clean berries at harvest time; fourth, mulching retains moisture in the soil at fruiting time, just when the plants require the most ample supply; and, fifth, it gives to the strawberry grower complete assurance that his plants are coming out all right in the spring.

Not only is mulching of great advantage to the strawberry plants, but the soil is benefited beyond estimate by this covering. The mineral substances in the soil, which constitute the feed that nourishes the plants,

would be lost in large quantities were the open spaces left to the ravages of wind and rain. The fertility is conserved, the moisture is retained, and the soil enters upon its work in the



Mulching One Hundred Acres of Strawberry Plants

This illustrates the manner in which mulching is applied to the 100 acres of strawberry plants on the R.M. Kellogg Company's strawberry plant farms at Three Rivers, Michigan. Hundreds of tons are annually used in this work. Mulching is one of the methods followed to insure perfect plants, and with an annual crop of from 20,000,000 to 25,000,000 plants it is easily to be understood that mulching is considered by this great concern a most important feature of its work.

# Brown Rot—Monilia

V. R. Gardner, Macdonald College, Ste. Anne de Bellevue, Quebec

THE disease known as brown rot is among plum diseases what the curculio is among plum insects—the most serious. It also affects cherries, peaches, apples, pears and a number of fruits. As the name implies, it causes other a brown decay of the fruit. It usually makes its appearance about the time the fruit matures, though often not until after picking. The decay spreads rapidly from the point of infection, especially if the weather, or storage room in the case of stored fruit, is not. Often the entire fruit will be discolored in a few hours after decay has started, though more frequently several days are required. During the hot weather at this season of the year the disease also spreads with great rapidity from one fruit to another. Sometimes the fruit of an entire tree will appear to be perfectly sound one day, and the next nearly every specimen will show signs of decay. The spores, or germs, of the disease gain entrance to the fruit through punctures in the epidermis, made by

insects or other agents, and sometimes through the unbroken skin. A sound fruit touching a decaying one is almost sure to be infected.

## REMEDIES AND TREATMENT

Most of the decayed fruits fall to the ground, but some shrivel up and remain clinging to the trees. The "mummy" fruits thus formed are a common sight in most plum orchards. As they serve to carry the fungus through the winter and are the chief source of infection for next year's crop, their removal from the trees in the fall materially aids in the control of the disease. As the punctures made by the curculio and other insects are usual points of infection, keeping them under control also helps to hold this disease in check. Some varieties are much more subject to brown rot than others. The susceptibility of the variety to this and other diseases should always be borne in mind in making a selection for planting. In some localities and during some seasons, it is much more prevalent than in others.

There are a number of sections otherwise suitable for plum growing where at least the European and Japanese varieties cannot be grown because of its virulence.

## SPRAYING WITH BORDEAUX

Outside of these general points to be taken into consideration in dealing with brown rot, there is one specific thing that can be done to control it. Spraying the trees thoroughly with Bordeaux mixture soon after the fruit has set and again about two weeks later, will probably be found the most satisfactory treatment that can be given. Another spray shortly before the fruit ripens, also, is often recommended. If this is given, a weak solution of copper sulphate (one pound to 300 gallons of water) or the copper carbonate of ammonia mixture should be used, as Bordeaux mixture will stain the fruit at that stage of maturity. Another application of Bordeaux mixture shortly before the buds open in the spring has been found beneficial in many cases.

# An Experience With Asters

C. M. Bezzo, Berlin, Ontario

THE accompanying photograph illustrates a bed of asters that I grew last year. The spring previous the soil was heavily fertilized for dahlias, and in August the dahlias were mulched with a half-rotted compost of coarse horse manure and sod from which the soil had been shaken. Early in November, after the dahlias had been removed, the ground again received an application of coarse manure, which was dug in. Early in the spring, almost as soon as the frost was out of the ground, the bed was again dug, and the manure, which had been dug in the previous fall, was thoroughly incorporated with the soil.

On May 15, I came to the conclusion that the aster plants which I had started indoors, and which were intended for this bed, were a failure and I planted more seed in one end of the bed, in rows, keeping each shade separate. After the plants were fairly well started, the ground between the rows was kept loose by constant hoeing, and the plants well watered. On June 16, or one month from the time the seed was sown, the plants were large enough to transplant. They were then taken up and the ground again dug. The plants were placed every nine inches, in rows that were twelve inches apart. This is much too

close for the proper development of each individual plant, but for effective massing it is about right, although where the growth is sturdy, a few inches further might perhaps be just as effective. Another reason why I think close planting advantageous, is that the branches become interwoven and each plant supports the other, thereby reducing the necessity of staking, and the possibility of the plants being uprooted by the wind.

For the first two or three weeks after transplanting very little perceptible progress was made, but during this time, the plants were throwing out roots and feeders underground. Having

completed, or sufficiently advanced, this under-ground work, top growth commenced with great rapidity. The ground was soaked with water almost every



Great Results in Growing Asters

evening during hot weather until the plants were large enough to protect their roots from the blazing sun. The surface of the ground was kept loose with a hoe,

until the plants were large enough to render the operation dangerous to themselves. The bed was a mass of glory when, on October 10, 1906, the heavy snowstorm which swept over Western

Ontario crushed them to the earth. This experience teaches that successful aster culture depends upon having good seed and rich, mellow soil, well worked and well watered.

## Winter Protection for Plants

V. R. Gardner, Macdonald College, Ste. Anne de Bellevue, Quebec

ONE of the first questions asked by people in northern latitudes about a new variety of a fruit-bearing or ornamental plant is: "Is it hardy?" By experience they have come to know that all varieties are not equally hardy and that some are not suited to their severe winters. Although some varieties require no special winter protection, a large number are likely to be destroyed without it; yet many of these half-hardy sorts of both fruits and ornamentals may be made to thrive if only given a little extra care. As the tender varieties are often the best in quality, the subject of winter protection becomes one of considerable importance. At the same time it is a rather difficult subject to discuss. The plant that will need protection in one locality may not need it in another. The method of protection best adapted to a particular plant in one locality may be quite unsatisfactory in a place less than a hundred miles distant.

### MULCHING MOST COMMON

Generally speaking, mulching of one kind or another is the one way of protecting half-hardy plants through the winter. Strawberries, asparagus, peonies, and many other herbaceous perennials, are regularly mulched. Grapes, raspberries, blackberries, dewberries, and many ornamental shrubs are first laid down and then mulched; in all cases, the object being to cover the plants with a blanket of some sort, to keep out some of the frost.

With herbaceous plants, straw, leaves or litter of some sort is generally used. These materials can be removed in the spring without much danger of injuring the crowns. Woody plants which can be bent to the ground are usually covered with soil. The depth to mulch of course varies somewhat with different plants and with different conditions. Plants may suffer as much from too deep mulching as from being left exposed. If covered too deeply they may decay in the spring before the mulching is removed. With most plants a mulch a couple of inches deep is usually sufficient. Strawberries should not be covered this deep, except between the rows where the mulching may be thicker.

### LAYING DOWN WOODY PLANTS

With woody plants the main difficulty lies in getting them down to the

ground. Grapes, raspberries, blackberries, and so forth, which are intended for mulching, should be pruned in the fall so that no more wood than necessary need be covered. In the case of the brambles, all dead canes should be removed and the new ones thinned so as to leave only four or five of the best to each hill. Then by digging away from one side of each plant with a spade and prying from



*Eucomis Punctata*

the opposite side, the plants may be bent over without great difficulty. Plants laid down in the same direction each year are quite readily handled. If all the plants in a row are bent in one direction and made to lap over each other, less material will be required to cover them.

### HANDLING GRAPE VINES

There are several methods of pruning the grape for laying down. One of the most satisfactory is to train an arm out horizontally in each direction from the parent plant, and let vertically trained shoots develop from these arms each year. The arms, being near the ground, can be readily covered in the fall after the canes of the past season's growth have been removed. New shoots are produced each year from spurs on the two arms. Another method of pruning grapes suited to regions where the vines must be laid down in the winter is what is sometimes known as the fan system. According to this system no permanent

arm is formed; but instead each year the plant is cut back so as to leave only three or four canes, each one and a half to three feet long, coming from the stem at or below the surface of the ground. These are flexible and can be readily covered. In the spring they are tied to the trellis in a fan-shaped fashion.

### PROTECTION AGAINST MICE AND RABBITS

In some sections, considerable injury is done fruit and ornamental trees by mice and rabbits. Care should be taken to prevent litter that is likely to furnish material for nests from accumulating around the trunks of trees. Tree protectors made of wire screen, or wood cut into thin veneer-like sheets and tied around the tree trunks like a collar, are often used to advantage to prevent girdling.

Other methods than these mentioned for protecting plants from severe cold and from rodents are frequently employed. The above are some of the simpler and more common. A little time spent now in preparing our plants for the winter may prevent considerable loss and disappointment.

## Canadian Holly

Roderick Cameron, Niagara Falls, Ontario

Canadian holly, *Ilex verticellata*, is a native plant that grows on the borders of swamps and ponds. To see a clump in full fruit with the ground round about covered with snow, is a sight that will never be forgotten by any person that loves plants.

There seems to be both fertile and sterile plants of these. Two kinds are found near each other, one literally covered with scarlet fruit and the other with none.

These plants take kindly to cultivation on damp soil. They love to have their roots covered with water during winter and spring. During summer, however, they seem at home in a dry place like the edge of a dried-up pond.

*Eucomis Punctata* (spotted).—Flower, green brown; scape, cylindrical; tall, surmounted by a crownlike tuft of leaves, which renders them interesting objects, deserving of cultivation in the outdoor garden. They have proved of sufficient hardiness to survive our winters at Niagara Falls. They are cape bulbous plants of the lily family; handsome foliage, more or less spotted at the base with purple. The illustration shows a plant grown by Mr. Roderick Cameron, Queen Victoria Park, Niagara Falls, Ont. Probably it is the only one that has been flowered in Ontario.

When planning a garden, do not aim to have it like that of any one else. Be original. Produce the unlike.

# Practical Pointers on Dahlia Culture

Max Moineau, Toronto

MY method of culture has given good results, and yet I feel that I know very little about the nature of this remarkable flower. In developing my "Sunburst" dahlia, I began with a very



1. Sunburst—A Show Dahlia

Chrome yellow with coppery bronze centre.  
Diameter,  $4\frac{3}{8}$  inches.

ordinary flower of the show type, whose color, a deep chrome yellow, with a coppery bronze centre, appealed to me as one worthy of attention. It was given me, and was not named. In size it measured three and one-eighth inches in diameter, was of perfect form, and opened out like a ball, the ray flowers reflecting to the stem. It looked like an overgrown pompon.

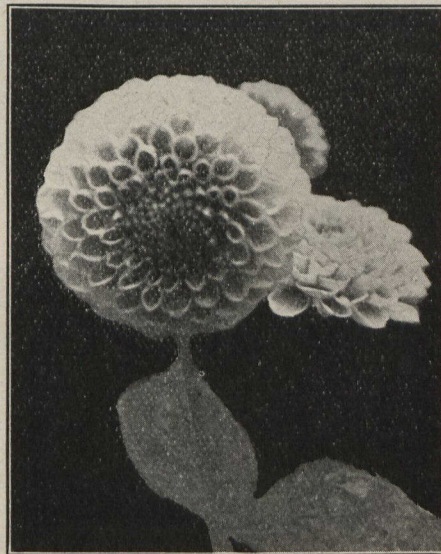
The next year I selected the largest, healthiest and most promising tuber, planted it six inches deep in rich soil, that was half sand and half clay, with bone meal thoroughly mixed through it. The bush grew to be thirty-seven inches high, with a strong stalk. After the buds began to form, I gave the plant a mulch of well-rotted stable manure, and covered this with about an inch of sand. The first bloom measured four and seven-eighths inches in diameter, and was of good form, with a coppery-bronze centre. See illustration No. 1. The second bloom measured five and one-eighth inches in diameter, was of even better form, but had a centre like dull brass. See illustration No. 2. After this my plant met with misfortune. One of my children, while playing near it, fell against it and broke down the greater part of the bush. It bloomed afterwards, but from a smaller side branch, and the flowers were not so large, although of as good form, but all with a coppery centre.

The result of the above experiment led me to believe that by selecting the best tubers from year to year, planting them horizontally six inches deep, in a rich soil, half clay and half sand, with

bone meal and wood ashes thoroughly mixed through it, and only one tuber in a hill, the hills being from three to four feet apart, there would be splendid results. Nor was I disappointed. This method gives a good bush, fine bloom, and better tubers. Putting a whole cluster of tubers in one hill is wrong. After they have sprouted sufficiently to show an eye, separate them carefully with a sharp knife, and select the best for planting. Sprouting should be promoted in the cellar, by wrapping the cluster of tubers in moss from the florist's, and keeping this damp until eyes appear.

## QUALITY BETTER THAN QUANTITY

It is better to have quality than quantity. When starting in the cellar, I place each carefully-selected tuber in



2. Another View of Sunburst

The petals, open back to stem, make a ball shape.

a separate box, the earth the same as in my garden, half clay and half sand, with bone meal and wood ashes, in small quantities, thoroughly mixed through it. The boxes are made so that they can be easily taken apart. When planting time comes, I carefully place the contents of box in the hill, disturbing the tubers as little as possible. This prevents the breaking of the long, slender roots of the tuber, and insures a much better growth.

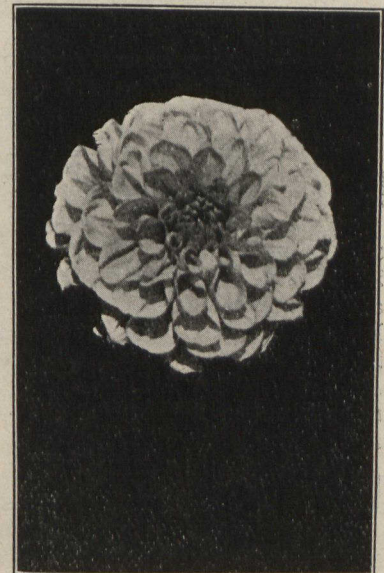
In Canada, this plant should not be started too early. Keep the tubers dormant until after the first of May, then start them in the cellar, setting them out in the garden about the first of June. The dahlia is in reality a fall plant, and it flowers best after the hot season. I never expect a good fall bloom from a plant that has been started early in the cellar, forced to eight or ten

inches in height, then transferred to the garden as soon as the weather will permit. Among amateurs it seems to be quite an achievement to produce the first bloom of the season. For my part, I much prefer producing plants that will be sturdy and prolific through a later season. The result is much more satisfactory in the end, when flowers are scarce.

Having planted your tubers, be careful how you treat them. Remember that nature can do a great deal more for them now than can you. *Do not water them.* Let nature do this. Artificial watering promotes the growth of the bush at the expense of the bloom. If tubers are six, or even eight inches deep, they will keep sufficiently moist between showers, unless in very dry weather, then give them an occasional *soaking*. Keep the earth about stalks well stirred up, so that it will not bake, and pluck out all suckers and weeds. I usually clip out the lower flower shoots, which never do well, that the strength expended in their development may go to the better part of the plant.

## THE ORIGIN OF NEW VARIETIES

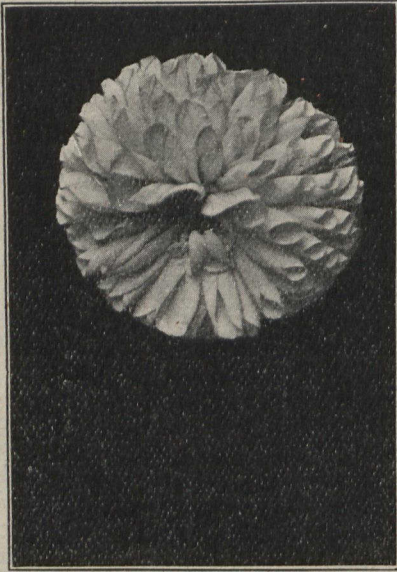
Propagating dahlias from seeds requires considerable care and patience. Having let one of your favorites go to seed on the bush, gather the seed before frost, and keep dry until the middle of March. Then plant in flats in the cellar, as you would aster seeds. When the second or third set of leaves have formed,



3. Mrs. Roosevelt—the True Type

transplant about three inches apart to give room. When weather will permit, transfer plants to the hotbed or cold frame. As soon as all danger of frost has passed, plant out in the garden, and

treat as if grown from tubers. They will bloom the first season. The tubers of these plants will do better the following year. In this way new varieties are originated.



4. Mrs. Roosevelt—A Sport

I have stated that flowers will sport on the same bush. As an example I give two illustrations, No. 3 and No. 4. These are "Mrs. Roosevelt," both grown on the same bush, from the same tuber, but from different branches. No. 3 is the true type, No. 4 the sport. It is believed that this variety of dahlia is an improvement over "Grand Duke Alexis" and was originated from that plant. If so, then this sport partly answers the query: "Do dahlias revert?" Anyone familiar with "Grand Duke Alexis," will notice in this sport of "Mrs. Roosevelt" the resemblance to its progenitor. It was certainly the most beautiful flower from this bush during the whole season. Its color was a delicate rose pink, with a rich orange centre, over which a few petals curled gracefully. It was much admired by all who beheld it.

A fine specimen of "Clifford W. Bruton" is represented by illustration No. 5. It is a large yellow, decorative dahlia, that measured five and six-eighths inches. The bush it grew upon is nearly six feet tall, and spreads over an area of nearly seven feet. This flower was picked without any special selection.

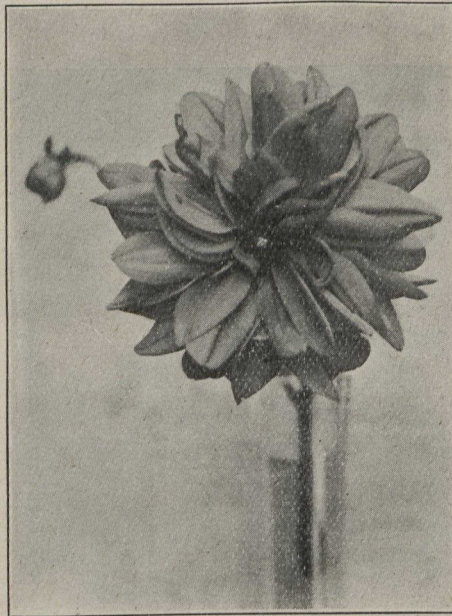
#### PROPAGATING FROM SLIPS

Among professionals the propagation of dahlias from slips is quite common. Slips are made from early shoots. These should be of the very thinnest, and taken from tubers that have been started in January, either in the hot-house, or in the cellar, if there is sufficient light. When the third set of leaves have formed, cut the shoots from the tubers and place in three-inch pots containing sandy loam, being very

careful to label slips as you make them. In about three weeks they will take root. Do not be discouraged if these slips wilt at first. I have had them apparently die, and finally send up a splendid shoot. Remove to hot-bed as soon as weather will permit, and transplant in garden, only after carefully hardening out, as soon as all danger of frost has passed, say about the middle of May. They will bloom as if grown from tubers.

#### FEEDING

Your dahlia bed should always be fertilized in the fall. After the tubers have been dug, work in large quantities of well-rotted cow manure, digging the bed over several times before the earth has frozen. Early in the growing season a top dressing of pure bone meal four parts, to nitrate of soda one part, gives splendid results, but



5. Clifford W. Bruton

Deep yellow, decorative. Size, 5 3/8 inches.

do not apply this until buds have begun to form. If, after a good bloom, the flowers appear to degenerate in size and quality, mulch broadcast with the bone meal and nitrate of soda composition, to promote a better bloom. Like the peony, the dahlia is a great feeder, but remember that too much feeding before the buds begin to form promotes the growth of the bush at the expense of the bloom.

Amateurs should aim to have flower beds of a pleasing but simple shape, not elaborate in design.

The value of rural improvement is recognized by all men who observe. It has an effect on the home and on the travelling public. It increases the value of the farms that are adjacent to or that form part of the improvement.

#### Gaillardia—Blanket Flower

The gaillardias are a genus of great importance in the flower garden, including, as they do, some of the showiest flowers, valuable for their long duration on the plants and as cut flowers. Variety *aristata* and several others are the types, all natives of North America, from which have been raised a number of beautiful hybrids, producing flowers from two to four inches in diameter. Variety *grandiflora* is probably the best and should be found in every collection.

If the seeds are sown in February, the plants raised will bloom as well as wintered-over plants. They may also be raised from cuttings in the fall. For effect, plant in a bold clump by themselves.

#### Kniphofia—Flame Flower

Roderick Cameron, Niagara Falls, Ont.

Red-Hot Poker or Torch Lily are other names for this flower. They are natives of South Africa. They belong to the lily family, of which there are about a dozen varieties in cultivation. All bear a strong resemblance to each other. The variety "Pflitzerie" is probably the best on account of its continual blooming habit and bright flame color. It blooms during August, September, and October. The photograph reproduced here is of this variety. I have counted as many as thirty-five spikes on one of these plants at a time. The plants are smaller than the others that I am acquainted with and the heads are shorter. One of the tallest is "Noble's." It is truly a noble plant, well worthy of the name.

They all like a deep, damp, porous



Kniphofia Aloidis

soil. At Niagara Falls they are hardy, but I would advise gardeners in other sections to take up the roots, store in boxes, and place in a cool cellar. They may be planted outside in the spring. Variety "Maria" is the hardiest of this class and should prove so in many places in Ontario.



Delegates and Others in Attendance at Convention of Ontario Horticultural Association

For names of persons numbered see page 305.

## What Amateurs Can Do this Month

THE custom of having a Christmas tree is so universally observed that Christmas would not be Christmas without it. Various kinds of conifers are used, such as white cedar, juniper, spruce, balsam and hemlock. Of our native evergreens, the spruce and balsam make the best Christmas trees, as their branches are regular and formal. These may be secured in the woods or bought from florists. Let every home have a Christmas tree.

No scheme of Christmas decoration is complete without the use of one or more kinds of red berries. Of these, the holly is the most important. The English holly is more attractive than the American species, but it is not used so largely. The holly used in this country comes mostly from the southern states. The winterberry, a closely allied species, is found in our swamps and low grounds. Sprays of the common barberry also may be used for Christmas decorations.

If you want to select Christmas presents that will be appreciated not only on account of their immediate beauty and worth, but also for their lasting qualities, why not select growing plants? Some persons give cut flowers for Christmas presents, but growing plants

are much more satisfactory. If these are decided upon, make your selection early. Do not wait until the best plants are gone. When buying, do not purchase plants that have every flower expanded. A few open flowers is sufficient, the remaining buds will expand in due time, and the interest will be prolonged. There are many plants suitable for presents, such as Gloire de Lorraine begonias, Jerusalem cherry, cyclamen, genistas, bulbs in variety, primulas, azaleas, poinsettias, Baby Rambler roses, and many others.

If you are sending plants to friends, and do not have them packed by a florist, be careful in performing the work. Plants like Jerusalem cherry and azaleas should have the branches drawn in towards the centre and secured by a string placed around the outside of the plant. Wrap them by first covering the top of the plant with tissue paper, which may be held in place by a string. Then roll the plant in a single or double sheet of cotton batting. Outside of this comes the wrapping paper. The quantity and thickness of wrapping paper will depend upon the distance that the plant is being sent. Probably it is the safest to first wrap in three or four thicknesses of newspaper and clean

manilla paper on the outside. Include the pots in the wrapping.

Books on horticulture make acceptable gifts. Every amateur gardener is interested in reading books on gardening. For a list of good ones, write for the book catalogue that is issued by THE CANADIAN HORTICULTURIST.

When sending Christmas presents, in most cases, the appearance of the gift will be enhanced by the use of galax leaves. Put a leaf in every Christmas package. You can get many of them from your florist for a few cents.

Christmas gifts wrapped in white paper, tied with a narrow silk ribbon or fancy cord, with a small sprig of holly placed in the ends or loops of the bow, and the whole wrapped in heavy paper for transportation, is a common and effective means of preparation.

Fruits are indispensable factors in dressing a Christmas tree, filling stockings or decorating the dining table. It has long been the custom to use imported fruits such as oranges and Malaga grapes for these purposes. While these fruits are excellent, there are many native grown fruits that may be selected. Among them, the choicer varieties of pears, such as Anjou;

grapes, such as Vergennes, Salem and Lindley; and apples, like Fameuse, McIntosh Red and Spy.

#### OUT-OF-DOORS

On pleasant days many odd jobs can be done on the lawn, and in the garden. Saw dead limbs from trees. Wrap and protect tender vines and shrubs. Remove and burn garden rubbish. Examine fruit trees for San Jose scale. Seek eggs of cocoons and insects and destroy them. Clean garden tools and cover the iron work

with grease to keep them from rusting.

Pruning fruit trees, bushes and vines may be done at any time during the winter if you think that you will not have time to do the work in early spring. Best results usually are secured in northern climates by pruning at the latter time.

Mulch the newly-planted bulb beds. Use strawy manure or spruce boughs.

Review your garden successes and failures of the past summer. Tell the story in a letter to THE CANADIAN

HORTICULTURIST. It will be published for the benefit of others. It matters not whether your garden was large or small, whether your experience was with a hundred plants, rare or common, or with only a single simple geranium, tell the story as it is. Read the experiences with asters and dahlias on other pages of this issue. Have you done similar work with these or other kinds of plant? Send illustrations if you have them. They will be returned at your request.

## The Amateur's Greenhouse in December

A. Alexander, Hamilton

**T**HIS is one of the interesting periods of the year for the greenhouse of the amateur. The plants which have been out of doors all summer, many of them resting, are beginning to

the pots, they should never be allowed to get dry.

This matter of watering plants growing in the dwelling or greenhouse, is a most important one. How often we

the plants that have been brought in from the outside have been repotted into clean pots and fresh soil, and that those lifted from the borders, such as geraniums and other suitable plants, have been "cut back" and carefully potted in pots, scrubbed clean inside and out. We have to remember that plants that have been standing outside or growing in the borders have exhausted the soil, especially those in pots, for in the copious summer watering, nearly all the plant food has been washed out. The thorough drainage of the pot should be attended to.

Those who grow freezias in their greenhouse, and who does not? should place around the edge of each pot four or five neat stakes six or nine inches in length, with green thread or fine cord or wire at intervals of three inches around the stakes. If this is done when the plants are a few inches above the edge of the pots, it prevents the plants swaying over and getting unsightly. Good bulbs of all kinds are so cheap now and in such variety, that a constant succession may be kept up for months.

The aphid or green fly is one of the enemies of the amateur greenhouse. I have found the extract of tobacco, vaporized in a small copper dish over a spirit lamp, the handiest and most effective remedy, and it does not injure the bloom as the ordinary smoking by burning tobacco stems does.

Too high a temperature should be avoided. It should not get below forty degrees. A temperature of forty-five degrees is high enough for the night at this time of year, while it may have a day temperature of fifty-five or sixty degrees. Of course, if tenderer plants, known as stove or hot-house plants, are grown, then a temperature ten degrees higher would be required.

Best effects in flower combinations are secured by planting each kind by itself. Where contrast is desired, however, two or three colors may be used, provided they are such as harmonize well.



A Private Greenhouse Affords much Pleasure to its Owner

Near the centre stands Mr. A. Alexander, Hamilton, Ont., an enthusiastic horticulturist who has contributed many valuable articles to THE CANADIAN HORTICULTURIST.

show their gratitude for the congenial quarters provided for them by pushing out their new foliage, so fresh and green, and perhaps adding their gay coloring to make the house a real beauty spot for its owner to revel in while the blasts of winter are holding high carnival without.

The bulbs, especially the narcissus in variety, and the Roman hyacinths will now be pushing upward to the light, especially those planted early in October, and will afford a source of daily interest and pleasure in watching their growth and development. After bulbs commence to grow and the roots are filling

hear the question asked: "How often should I water my plants?" The best answer to this is: "When they require it." I always tell my questioners to use their knuckles. I tell them to tap the pot with their knuckles or a piece of wood. If it gives a clear ringing sound, then water is certainly needed, but if dull and heavy, sufficient has been given. When watering, do it thoroughly; never water in dribbles. The question of watering the plants in a small greenhouse is a most important one during this and the following two or three months.

Of course, it is taken for granted that



# The Marketing of Vegetables\*.

Frank Williams, Ottawa South, Ontario

THE more we study the vegetable business the more complicated it appears to become. The merchant only requires good judgment in buying his goods, attention to the

why not grade the goods and get their true value? We believe that in some cases it would pay to throw away the few small inferior ones and not disgrace the bunch or box. I had almost said

will bring more money than the total crop ungraded.

## ATTRACTIVENESS OF PACKAGE

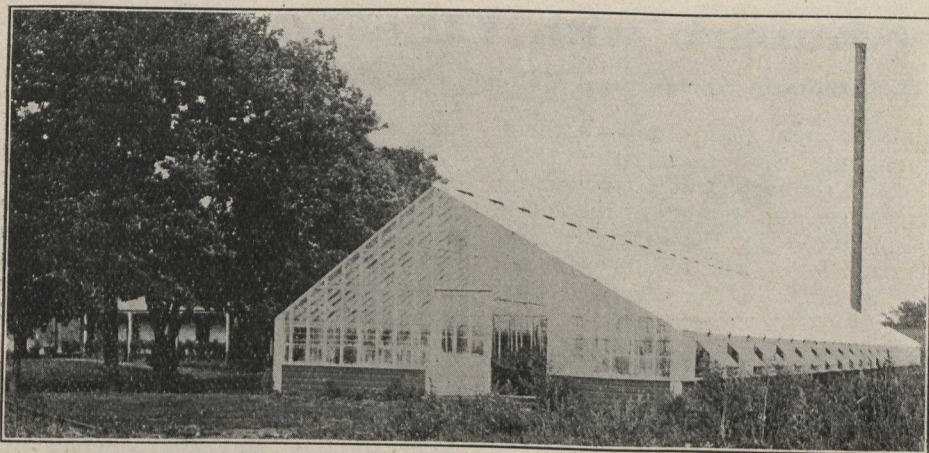
Oftentimes boxes several years old that have been used for onions, potatoes, roots, and other work around the garden, may be seen filled with asparagus, snap beans, tomatoes, cauliflower, and so forth. The grower does not realize that the fastidious customer is generally the one who will pay the price, and that by so doing he is losing many times over in a season the cost of a clean and attractive package.

## UNIFORMITY OF PACKAGE

Uniformity of package will always give the line a better appearance when offered for sale, and will be found to find favor with the purchaser when giving his order as well as help the grower to keep a record of his crop.

## ADVERTISING

Does it not seem strange that while all other lines of business advertise their goods the vegetable grower has nothing to say for himself or his product? This should not be so. Our business is worthy of better treatment. If you have a good thing let the consuming public know it, and where it comes from. If it is a box or basket, stamp your name



A Large Greenhouse on the Premises of Mr. Williams at Ottawa

wants of his customers, a reasonable profit, and fair dealing, to make his business a success. The manufacturer works up the raw materials by well-defined rules and patterns. The miner seldom meets with new and unknown difficulties. The whole list of our commerce runs pretty much the same way. On the other hand, the successful vegetable grower has the problem of what to grow and how to grow it, which involves details innumerable, and when the goods are ready for market has to rely solely on his good judgment for what he may realize for his product. The following are some of the reasons for this:

In the first place, as nature never repeats herself, no two growers will have just the same size and quality of goods; hence, a variety of prices for the same lines on any given day of the season. Secondly, the manner in which these lines are offered for sale vary according to the fancy or judgment of the individual grower or salesman. Thinking over this problem of the marketing of our crops our conclusion is that there is a good work lying at the door of this association along these lines. Grading of quality, uniformity and attractiveness of package whether bunch or box, cleanliness of goods and package, together with a respectable outfit and driver, are just as necessary to success in our business as any other.

## GRADING OF QUALITY

The poor man cannot always afford to pay for fancy quality, and the rich man will not pay for poor quality. Then,

“yourself,” for does it not seem dishonest to try to sell such stuff at the price of a good article? It will be a surprise to most growers when they set this cull stuff to one side to see how small a portion of the crop it is. Generally, the better quality and less bulk



An Excellent Display of Onions shown at last Canadian National Exhibition

The onions at the recent Ontario Horticultural Exhibition were even better than these.

\*One of the papers read at the convention of the Ontario Vegetable Growers' Association last month.

and address plainly and prominently on the package. If it is a bunch, tie a label or tag to it. If the goods are right the consumer will want more of them and will soon insist on having yours and yours only. Not only this, but they will also be sure to tell their friends the satisfaction they have had

since they have been getting your labelled goods of first quality and even grade.

These suggestions when followed will be found helpful in many other ways. They will have a tendency to bring the business into better system, will help the grower to estimate the value of each crop, and will be found a strong incentive

to grow the best and nothing but the best. They will stimulate the quality, so often lacking, of pride in the business, the first and best God ever gave to man.

Wake up fellow-gardeners to your opportunities! Along these lines, your business will increase and success will follow.

## Forcing Rhubarb with Ether

J. Eaton Howitt, M.S., Ontario Agricultural College, Guelph

**R**HUBARB is a plant that is being forced for winter use more and more every year. The method of forcing is very simple. Good, strong, thoroughly established, three or four-year-old clumps are dug in the fall. These are stored in boxes or cold frames

were also a great many more of them. Four cuttings were taken from these two lots of rhubarb, and a comparison made between the weights of the edible stalks produced by the etherized and unetherized lots. The results were decidedly in favor of the etherized lots.



Rhubarb—Unetherized shoots on left, Etherized on right

until required for use. They are then taken into the forcing house and placed close together in boxes or in beds underneath the benches. Soil is thoroughly packed between the clumps and a covering of from two to six inches of soil placed over them. The temperature of the house is kept between fifty and sixty degrees Fahrenheit and water applied when necessary. In about four or five weeks' time, the rhubarb is ready to cut.

### EXPERIMENTS WITH ETHER

In the experiments at Cornell on the forcing of rhubarb by the use of ether, the usual methods of culture were practised. The experiment was started on December 26, when three clumps of etherized and three clumps of unetherized rhubarb were placed in boxes in a dark mushroom house. Care was taken to have both lots as nearly the same weight as possible. The effect of the ether was very pronounced, the shoots of the etherized clumps being ready to cut fully five days before those of the unetherized clumps. Not only were the shoots of the etherized clumps earlier than those of the unetherized, but there

The first cutting was made on January 20, when the etherized clumps yielded three pounds, one ounce of edible stalks and the unetherized clumps one pound, six ounces. At the second cutting, which was made on January 26, the etherized lot yielded two pounds, nine ounces, and the unetherized two pounds, two and a half ounces. The third cutting, made on February 3, showed no gain in favor of the etherized lot as both lots yielded one pound, thirteen ounces. In the fourth cutting, made on February 10, there was once more a slight increase in yield in favor of the etherized lot, it yielding one pound, ten ounces, and the unetherized lot one pound, seven and a half ounces. There was, therefore, from the four cuttings, a total gain of two pounds, four ounces in favor of the etherized lot, which is equal to an increase of about thirty-three per cent. due to etherization.

### COST OF ETHERIZATION

The expense of etherization is not as much as might be expected. The initial cost for a thoroughly air-tight box need not be great. Any well-made box

may be used if the cracks are covered over with felt paper and the cover made to fit as closely as possible. Such a box can be made by any handy man at a very slight cost. Commercial sulphuric ether, such as is required for etherization, costs about seventy-five cents a pound, which quantity is sufficient to etherize thirty good-sized clumps of rhubarb. Thus the cost of the process is so little that it is more than covered by the five days' gain in time, which means a considerable saving of labor, and often a better price for the rhubarb. The extra quantity of rhubarb produced by etherization is clear gain.

### Asparagus and Ginseng

Last summer I cut the foliage of my asparagus bed for use in floral work. Will this influence the crop next year? Give some information about ginseng?—E.G.F., Shediac, N.B.

The condition of the roots of your asparagus will depend largely upon the quantity of foliage that was removed during summer. After cutting in spring, the plants should be allowed to grow all summer and in fall until the tops die down. This is necessary so that large quantities of plant food may be stored in the roots for use next spring. When a portion of the tops is removed during summer, it disturbs the equilibrium between top and root, and lessens the amount of food that will be stored.

Ginseng is to the Chinese more than quinine or any other drug is to America. It commands a high price in China. While not particularly difficult to grow, it requires some care in protecting it and considerable patience before the crop can be harvested. No returns can be expected from a plantation until it is three or four years old. Write Mr. W. T. Macoun, horticulturist at the Central Experimental Farm, Ottawa, for further details.

In solid benches the board bottom is more desirable than that of tile, as it forces the crops best. Tile bottoms are too quickly dried out.

The leek is closely allied to the onion, which it resembles in flavor. It does not form a bulb, but a straight bunch of leaves that are used almost entirely in a fresh or uncooked condition.

# OUR QUESTION AND ANSWER DEPARTMENT

Readers of The Horticulturist are Invited to Submit Questions on any Phase of Horticultural Work

## Methods of Grafting

How many methods of grafting are practised and how do they differ from each other?—L. T., Canning, N.S.

There are scores of different methods in use in this country and in Europe, but only four or five are common. These are, in brief, as follows: 1. Whip or tongue-grafting—employed only upon small stocks and usually for root grafting; 2. Splice-grafting—a simple form, also adapted to small shoots; it consists in cutting each part diagonally and placing them together. 3. Saddle-grafting—stock made wedge-shape, scion split and slipped over it. 4. Side or veneer-grafting—stock cut on side diagonally beneath the bark and wedge-shaped scion inserted. 5. Cleft-grafting—stock split and scion made wedge-shape to fit.

## Evaporation of Moisture

To settle a dispute, will you please state whether or not deciduous trees lose moisture during the winter?—S. L. Jackson, Perth, Ont.

Yes, deciduous trees lose moisture in winter. The evaporation takes place through the bark, but only to a slight extent, when compared to the transpiration of summer. It is most active from the twigs and small branches of the tree tops, especially when the air surrounding the twig is dry.

## Paris Green

Kindly give some information regarding the chemistry of Paris green, with the tests for purity.—T. M. Digby, N.S.

Chemically speaking, Paris green is an aceto-arsenite, prepared by boiling arsenic trioxide with copper acetate. It contains from fifty to sixty per cent. of arsenic and is very insoluble in water. A number of impure Paris greens are offered for sale, such as the following: 1. A bogus Paris green, being merely a mixture of chalk or gypsum, properly colored. This contains absolutely no poison, and is useless. 2. An adulterated Paris green, which is a mixture and chalk, flour, gypsum, and a little Paris green. This contains a little poison, but cannot be relied upon. 3. A low grade Paris green, that contains some free arsenic, sometimes as much as fifteen to twenty per cent.; as a consequence, it is very dangerous to use on tender foliage.

There are a number of simple tests for determining the purity of Paris green. For determining adulteration, the ammonia test is used. Pure Paris green is entirely soluble in ammonia,

and produces a greenish solution. Noting a difference in the form of particles is another test. On a piece of glass, place a small quantity of Paris green and tap the glass gently, holding it in an oblique position. As the particles of Paris green are spherical, they will roll very readily when the glass is tapped, and the impurities are left behind. Another test is performed with a microscope. If the Paris green is pure, it will contain nothing but round, green-colored particles.

## Mulching Roses

Is it advisable to put a mulch around rose bushes in winter?—W. G., Smith's Falls, Ont.

A fairly heavy mulching of manure will cause the roses to come through the winter in much better shape than if they are left bare. Put on enough so that when it settles there will be a five or six inch mulch. Do not apply it until after the ground has frozen.

## Fall Work with Roses

Can roses be planted in fall?—R. W., Essex, Ont.

In some localities, roses may be planted in fall. Do not plant later than the first week in November. Prepare the bed in some suitable place. Roses like plenty of light and air. A soil not too rich but rather clayey is preferred, although any good soil will answer. If the plants are wilted when they come, soak them, wrapping paper and all for several hours in warm water. When planting, spread out the roots and set the plant a little deeper in the ground than it was before. See that the soil is pressed well around the roots. Press with the foot to make sure that the roots and soil come in close contact. If cool or windy when planting, give some protection. During the winter, a protection of dry leaves or straw, held by something to keep the wind from blowing it away, will answer.

Older plants can be bent down to the ground or to within a few inches of it, and fastened there to stakes, and then cover with leaves, straw or other litter, and a board or two placed on top of it to keep the cover from blowing away. They may be protected, also, simply by placing straw around them to a depth of about six inches. Tender varieties must be bent down, however, or if left upright completely covered with straw after the wood is ripened and before heavy frosts come.

## Vitality of Seeds

What conditions aid in the preservation of vitality in seeds?—A.M., St. Hyacinthe, Que.

No general rule can be given for the preservation of vitality. One must endeavor to follow the laws of nature, but not strictly. Cultivated plants have long been removed from natural conditions and must be treated in accordance with this fact. The seeds of conifers must be preserved in the cones, corn on the cob, legumes in the pod, and so forth. Most tree seeds are preserved by stratification; some others, by drying and storing in a dry, cool room. To preserve vitality in seed, we must have the conditions that are required for that particular kind uniform, avoiding extremes of every nature, especially in the case of those seeds whose vitality is impaired by excessive moisture.

## Notes and Comments

Keep the bearing wood of grape vines as near the main trunk as possible.

The small onions picked from this season's crop may be used as sets next spring.

One of the chief objects of pruning is to provide good, healthy, and not crowded, foliage during the growing season.

Scallion onions usually are due to the planting of poorly selected seed or immature bulbs, but sometimes they are difficult to account for.

One-fourth of an acre planted to small fruits and properly cared for will supply an average family throughout the season, but the land must be reasonably rich and kept in a good condition by thorough cultivation.

Bulbs for spring flowering should be planted in fall and not in the spring, as was stated erroneously in the report of Mr. R. B. Whyte's address before The Toronto Horticultural Society that was published in the November issue.

The diagram that appeared in the November number of THE CANADIAN HORTICULTURIST, representing an arrangement of plants for a hardy border, is well worth careful study. Amateurs who cannot afford the time and space for such an elaborate arrangement can make a selection, from the plants mentioned, to suit borders of any size or pretensions.

The Canadian Horticulturist

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The Only Horticultural Magazine in the Dominion

Official Organ of British Columbia, Ontario, Quebec and Prince Edward Island Fruit Growers' Associations and of the Ontario Vegetable Growers' Association

H. BRONSON COWAN, Managing Editor and Business Manager  
A. B. CURTING, B.S.A., Horticultural Editor  
W. G. ROOK, Advertising Manager  
GARRETT WALL, Circulation Manager

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Circulation Statement

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August 1906	4,220
September 1906	4,300
October 1906	4,330
November 1906	4,775
December 1906	4,814
January 1907	4,947
February 1907	5,520
March 1907	6,380
April 1907	6,460
May 1907	6,620
June 1907	6,780
July 1907	6,920
Total for the year	66,066
Average each issue	5,505
August 1907	6,880
September 1907	7,078
October 1907	7,210
November 1907	7,250

Sworn detailed statements will be mailed upon application.

Our Protective Policy

We want the readers of THE CANADIAN HORTICULTURIST to feel that they can deal with our advertisers with our assurance of the advertisers' reliability. We try to admit to our columns only the most reliable advertisers. Should any subscriber, therefore, have good cause to be dissatisfied with the treatment he receives from any of our advertisers, we will look into the matter and investigate the circumstances fully. Should we find reason to believe that any of our advertisers are unreliable, even in the slightest degree, we will discontinue immediately the publication of their advertisements in THE HORTICULTURIST. Should the circumstances warrant we will expose them through the columns of the paper. Thus, we will not only protect our readers, but our reputable advertisers as well. All that is necessary to entitle you to the benefits of this Protective Policy is that you include in all your letters to advertisers the words "I saw your ad. in THE CANADIAN HORTICULTURIST." Complaints should be sent to us as soon as possible after reason for dissatisfaction has been found.

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THE CANADIAN HORTICULTURIST,  
506-7-8 Manning Chambers,  
TORONTO, CANADA

EDITORIAL

THIRTY YEARS OLD

With this issue THE CANADIAN HORTICULTURIST completes its thirtieth year. The first number was issued at St. Catharines, January, 1878. It comprised twenty-four small pages, including sixteen pages of reading matter. Its first editor was the late D. W. Beadle, then secretary of the Ontario Fruit Growers' Association. The first issue of THE CANADIAN HORTICULTURIST contains the announcement that, "The directors of the Fruit Growers' Association have long felt the importance of having a monthly publication as a medium of communication between the members and a means of imparting . . . such information as is sought after by those who are interested in fruit culture. . . . It will contain occasional articles intended to guide and help those who seek to cultivate flowering plants and shrubs, and if the less showy, but not less important vegetable garden should have a place now and then in these pages there are those among the readers who will welcome timely information in this department also."

During the 30 years that THE CANADIAN HORTICULTURIST has been published it has never found it necessary to deviate from the lines then laid down. It has grown in size and influence until now it is the official organ and recognized medium of communication between the fruit growers of not only Ontario, but of Prince Edward Island, Quebec and British Columbia as well. At first largely provincial in its character, it is now national in its scope and influence.

For a number of years the late Mr. Beadle managed the magazine with marked ability. In 1887, Mr. Linus Woolverton, of Grimsby, was appointed secretary of the Fruit Growers' Association, and editor, and began enlarging it in 1888. During the next fifteen years, under Mr. Woolverton's management, THE CANADIAN HORTICULTURIST was enlarged several times, and became recognized as an authority on horticultural matters. Since the present management assumed control in 1903, the magazine has been further enlarged and improved. To-day THE CANADIAN HORTICULTURIST has a larger paid circulation list and a greater advertising patronage than ever before in its history. In the future, as in the past, it will be the aim of the management to continue to deserve the confidence and support of the fruit, flower and vegetable growers of the Dominion and to still further strengthen and improve THE CANADIAN HORTICULTURIST.

SAN JOSE SCALE ON FRUIT

During the past month great excitement was caused in the Grimsby section of the Niagara district over the importation of fruit infested with San Jose scale. The press of the province spread the alarming news. Most persons who knew of the scale's entrance into the community by such means were afraid. They appeared to expect a sudden onslaught on the orchards of the neighborhood. The Weekly Fruit Grower voiced this sentiment when it used the words: "The industry being greatly endangered or entirely destroyed." While it is better to be sure than sorry, much ado was made about practically nothing.

Try to hide it as they may our growers must admit that San Jose scale is spreading in Ontario. The pest is a menace to the industry and is encroaching upon areas where a year or so ago it could not be found. It is a mistake for growers to hide its presence. Grimsby itself is in a scale-infested district. While the spread of the scale is alarming, it does not take place by means of infested fruit. Science teaches that it is practically impossible for the pest to spread from mature fruit to trees at this season of the year.

Letters from men who have made the question a study are published in the leading article of this issue. They bear out this statement.

If the Grimsby fruit growers were as energetic in fighting and controlling the scale in their orchards as they were in condemning the importation of the pest on infested fruit, they would benefit the industry in a manner that would be worth while. For years, scale-infested fruit has been shipped from St. Catharines and other districts, where scale is acknowledged to be present, to all parts of the province, and of Canada. Long before scale was found in the orchards of Canada and the United States, scale on fruit was shipped to the east from California. Not one definite case of infestation by this means is known. Scale is disseminated on infested nursery stock and by other means, but not by infested fruit.

San Jose scale is here to stay and it will spread to other localities. Recently it was discovered in the vicinity of Aylmer. It cannot be eradicated, but it can be controlled. Fruit growers should not heed the phantom danger of spread from infested fruit but should unite in a determined effort to hold the pest within bounds in their orchards. THE CANADIAN HORTICULTURIST is ready and anxious to assist. Its columns are open for suggestions and expressions of opinion on the subject.

LANDSCAPE ARCHITECT WANTED

A provincial landscape architect should be appointed by the Ontario Government. The suggestion was made by Mr. J. S. Pearce, superintendent of parks, London, Ont., at the convention of the Canadian Horticultural Association held in London last August, and again at the recent convention of the Ontario Horticultural Association in Toronto. It is worthy of careful consideration and definite action on the part of the provincial government. The duty of such an official would be to lay out the grounds surrounding public institutions and buildings, such as jails, insane asylums, normal schools, and so forth, and to plan parks and squares for those towns and cities that desire such services.

Such an appointment would be of great value to a large number of small towns and cities that are constantly struggling with the problem of park and civic improvement, and that are compelled to go to considerable expense to employ competent men for the purpose. Many necessary improvements are neglected for want of funds and expert advice. Were the government to secure such a man and offer his services where most needed, it would tend to work a great change in the appearance of our towns and villages. It is hoped that such an appointment will be announced at an early date.

A CHANGE IN PRICE

Owing to an advance in the charges of our printers for printing THE CANADIAN HORTICULTURIST, and to the increased cost of publication consequent upon the enlarged size of the paper, the subscription price of THE CANADIAN HORTICULTURIST will be advanced slightly at the first of the year. On and after January 1, 1908, the subscription price will be sixty cents a year, instead of fifty cents a year as at present. Our subscribers, however, will still be able to secure THE CANADIAN HORTICULTURIST at the rate of fifty cents a year by subscribing for it for two years, as the rate for one subscription for two years will be one dollar. The rate to horticultural societies and fruit growers' associations which subscribe for the paper for all their members will remain as at present, fifty cents a year.

This advance we feel is justified by the great improvements that have been made in THE CANADIAN HORTICULTURIST during the past year and a half as well as by further improvements which are planned for the future. Although THE CANADIAN HORTICULTURIST has

been almost doubled in size during the past two years, the subscription price, even after the proposed advance has taken effect, will be forty per cent. less than it was when the paper was published in its former smaller size. So many of our subscribers have expressed surprise at our ability to issue such a large, well-illustrated paper as THE CANADIAN HORTICULTURIST for fifty cents a year, we feel that this announcement will not be entirely unexpected.

During December we will continue to accept renewal subscriptions at our present rates of fifty cents a year, or three years for one dollar and twenty cents, or three new subscriptions for one dollar

### WIDER COMPETITION NEEDED

The success of the recent Ontario Horticultural Exhibition augurs well for its future. While it was much the largest and best show of its kind ever held in Canada, it has achieved only the beginning of what is to come. Except for a small fruit exhibit from British Columbia and a few entries of flowers from outside points, the exhibition was provincial in its character and name. It aspires to national importance and deserves it. It is located at the most central and most readily accessible point in Canada. Other provinces, therefore, should take greater interest in it and make exhibits.

We would suggest that a number of prizes be offered next year for inter-provincial competition. A beginning could be made with apples. Later on the prizes could be extended to other fruits. Such competitions would aid in determining the old but friendly dispute over which province produces the best. They would advertise each province in a profitable manner and help to bring about a greater uniformity of pack in the fruit of the different provinces.

The display of fruit in boxes at the Ontario Horticultural Exhibition last month showed a great advance in methods of packing over last and previous years; yet, there is still room for improvement. To achieve anything worth achieving one must have an ideal in mind. The ideal system of packing apples in boxes is practised in the Hood River district of Oregon. We would suggest that the management of the fruit department of our show secure a few boxes of well-packed choice fruit from Oregon next year and place them on exhibition as object lessons. It would be interesting to observe wherein they differ from well-packed Ontario fruit. Some of the boxes at the recent exhibition would be hard to beat.

At the convention of the Ontario Fruit Growers' Association, it was announced that the Hon. Sydney Fisher had informed the secretary that it would be impossible to call another fruit conference in the spring of 1908 as the National Live Stock Convention would engage the attention of the department at that time. This shows how unsatisfactory the situation is. The appointing of the date for these conferences should be in the hands of the fruit growers, and not at the command of the department. While the Dominion department is to be commended on having called the conference last year, and on promising another in the future, the situation will not be satisfactory until arrangements have been made by which such conferences can be held at regular and stated intervals.

An exhibit of fruit from the Chilliwack Valley in British Columbia was made at the recent Ontario Horticultural Exhibition. It was sent by the enterprising firm of Cawley & Paisley and comprised 12 boxes of apples and two of pears. This exhibit attracted much attention. The apples were of exceptionally large size for the varieties shown and the color was high. There was much difference of opinion among growers as to the flavor of these apples compared with those of Ontario. It was the general opinion, however, that the size of B.C. fruit is

gained at the expense of flavor. Some comparisons in flavor were made but they were not altogether fair, as the seasons of varieties in the two provinces are not similar; e.g., when Ontario Kings are at their best, B.C. Kings are commencing to deteriorate. The B.C. fruit was well packed as far as systems of packing were concerned, but the grading was not as uniform as might be expected.

### Who They Are

Among the delegates, speakers and friends present at the convention of the Ontario Fruit Growers' Association were, as numbered in the group illustration on page 293: 1. Pres., Harold Jones, Maitland; 2. Prof. H. A. Surface, Harrisburg, Pa.; 3. A. E. Sherrington, Walkerton; 4. C. L. Stephens, Orillia; 5. Wm. Rickard, Newcastle; 6. A. D. Harkness, Irena; 7. W. T. Macoun, Horticulturist, C.E.F., Ottawa; 8. W. Gurney, Paris; Past Pres. W. H. Bunting, St. Catharines; 10. W. H. Dempsey, Trenton; 11. P. J. Carey, Dominion Fruit Inspector, Toronto; 12. G. A. Robertson, St. Catharines; 13. Robt. Thompson, St. Catharines; 14. G. C. Creelman, President, O.A.C., Guelph; 15. J. L. Hilborn, Leamington; 16. Murray Pettit, Winona; 17. H. C. Fisher, Queenston; 18. C. E. Fisher, secretary, Niagara Peninsula Fruit Growers' Association, St. Catharines.

A large number of delegates and others were in attendance at the convention of the Ontario Horticultural Association. Some of them appear in the group illustration on page 299. Those numbered are: 1. J. Lockie Wilson, Supt., Horticultural Societies; 2. Past Pres. W. B. Burgoyne, St. Catharines; 3. Pres., Maj. H. J. Snelgrove, Cobourg; 4. R. B. Whyte, Ottawa; 5. Rev. A. H. Scott, Perth; 6. W. Jeffers Diamond, Belleville; 8. H. J. Frankland, Toronto; 9. Walter Brooks, Brantford; 10. G. W. Tebbs, Hespeler; 11. J. S. Pearce, Park Superintendent, London; 12. J. O. McCulloch, Hamilton; 13. R. Govenlock, Seaforth; 14. R. Jarvis, Bowmanville; 15. T. H. Lennox, Stratford; 16. W. T. Macoun, C.E.F., Ottawa; 17. Wm. Hunt, O.A.C., Guelph; 18. Alex. McNeill, Chief, Fruit Division, Ottawa; 19. John Cavers, Oakville; 20. Mrs. R. MacDowell, Owen Sound; 21. J. M. Dickson, Hamilton; 22. C. W. Schierholtz Elmira; 23. W. C. Reid, Belleville.

### Fruit Shippers Complain

At the recent sitting of the Dominion Railway Commissioners in Toronto, Mr. E. D. Smith, M.P., Winona, and Mr. R. J. Graham, Belleville, supported by Messrs. Robt. Thompson and W. H. Bunting, of St. Catharines, brought clearly before the Board the following complaints and requests for adjustment in the matter of fruit transportation:

1. An application for a stop-over privilege for the purpose of assorting domestic shipments of fruit as well as shipments for export.
2. An application for an order directing the railway companies to provide for the icing of their refrigerator cars at convenient centres, so that they may be iced on due notice before being shipped to points for loading as well as for re-icing in transit.
3. An application for an order directing the railway companies to make better provision for the heating of cars in cold weather or otherwise provide against damage to fruit in transit on cars in fall, winter, and early spring.
4. An application for an order, directing the railway companies to provide better ventilated cars for shipments of fruit during seasons of the year when such cars are required.
5. An application for an order directing the railway companies to provide suitable accommodation for receiving and protecting fruit offered for shipment at stations throughout the country, naming all the stations which you and others know at which reasonable provision for such purpose has not been made.

Representatives of the leading railway companies were present, and admitted the justice

of most of the claims made by the fruit growers, and expressed their willingness to assist in remedying matters. It is evident that the railways have made little or no effort to furnish the quantity of cars and the kind of service that is made necessary by the rapid progress of the fruit industry during the past few years. This opinion was expressed by members of the Board, which intimated that the fruit growers may expect a change in the situation before next season.

### Northwest Fruit Growers

Probably the most important meeting of its kind ever held in British Columbia will be the forthcoming international convention of the Northwest Fruit Growers' Association, which takes place in Vancouver on Dec. 4, 5, and 6. Great preparations are being made by the secretary, Mr. Maxwell Smith, and the directors, to make it a success. Arrangements have been made with experts on various phases of fruit culture to address the convention, and, as a result, a valuable program has been prepared.

Besides the appointing of committees, and the receiving of reports, the following papers will be read on Dec. 4: "Environment and Selection," J. R. Anderson, Victoria, B.C.; "The Apple," A. I. Mason, Hood River, Ore.; "Small Fruits," J. W. White, Hammond, B.C.; "Remarks Regarding this Convention," Maxwell Smith, Vancouver, B.C.; Dec. 5: "Some Experiments," Prof. L. F. Henderson, Moscow, Idaho; "Pear Culture," Hector Ferguson, Haney, B.C.; "Irrigation," C. A. Hickenlooper, View, Utah; "The Fruit Trade," F. R. Stewart, Vancouver, B.C.; "Transportation," E. H. Shepard, Hood River, Ore.; "Graft Hybridization," W. J. L. Hamilton, South Salt Spring, B.C.; "Peach Growing," Prof. W. S. Thornber, Pullman, Wash.; "Entomology," J. W. Cockle, Kaslo, B.C.; "Walnuts and Prunes," Col. H. E. Dosch, Hillsdale, Ore.; Dec. 6: "Cherry Culture," R. H. Webber, The Dalles, Ore.; "The Role of Parasites," Prof. E. D. Ball, Logan, Utah; "Experimental Farm Work," Thos. A. Sharp, Agassiz, B.C.; "Orchard Culture," Prof. W. T. Clarke, Berkeley, Cal.; and "Apple Tree Pruning," T. W. Stirling, Kelowna, B.C.

In addition to the program, there will be a competitive fruit display, and medals will be awarded for: (1) The best five boxes of apples, five varieties; (2) The best display of fresh fruit; (3) The best box of commercial apples.

### Items of Interest

At the Ontario Horticultural Exhibition last month, Mr. W. M. Robson, of Lindsay, showed a Canadian seedless apple. Specimens were of good size and color. The variety will be mentioned at greater length with photographs in later issue.

Four boxes of the best apples at the recent Ontario Horticultural Exhibition were sent to His Majesty the King through the Canadian High Commissioner in London. His Excellency the Governor-General also was presented with two boxes. So pleased was Earl Grey with this fruit that he telegraphed for three boxes more.

Sixty boxes of apples were sent from the Ontario Horticultural Exhibition to London, England, where they were exhibited at the Royal Horticultural Show on Nov. 28 and 29. From there the fruit was distributed among the chief immigration agents throughout Great Britain to advertise the province of Ontario.

At the recent convention of the Ontario Fruit Growers' Association, it was resolved, after discussion, to invite the American Pomological Society to hold its next meeting in St. Catharines.

**St. Vincent Vines.**—By grafting and selection of early plants a French horticulturist succeeded in getting ripe grapes as early as August 20, and for this reason named the variety "Vines of St. Vincent." It grows rapidly, and is hardy. Read the advertisement of V. Tillier on page vii.

# The Fourth Ontario Horticultural Exhibition

**M**ORE entries, a higher average quality of exhibits, and the fact that it proved a financial success, made the fourth Ontario Horticultural Exhibition, held in Toronto, Nov. 12-16, surpass all its predecessors. The fact that this year the directors of the exhibition will not have a deficit of several hundred dollars to meet, as was the case with each of the three former exhibitions, is one of the most important features of the exhibition, as it is now recognized that the exhibition at last is firmly established. Next year, the directors will not have to use \$800 of their Government grant to pay their debts, as was the case this year. The next exhibition, therefore, should prove an even greater success, financially and otherwise, than was the case this year.

One of the most satisfactory features was the marked improvement in the quality of the exhibits that was noticeable in almost every department. This was true of the boxed fruit in particular, as well as of the chrysanthemums. Many of the vegetables shown were so far superior to anything of the kind ever before displayed at an exhibition in Toronto, they were the cause of general comment. This year entries were received from various points in the United States, as well as from British Columbia, showing that the exhibition is becoming both national and international in its scope. It is now the rallying point each year of the fruit, flower and vegetable growers of the country, and of far-reaching importance in its beneficial effect on the horticultural interests of the Dominion.

The attendant conventions of the Ontario Fruit and Vegetable Growers' Associations, and of the Ontario Horticultural Association, were full of interest, and successful. The fact that they were held in conjunction with the Ontario Horticultural Exhibition, with its attendant low railway rates from all parts of the province, added to their attendance, interest and educational value.

## THE FRUIT EXHIBIT

The fruit department was a great advance on that of past shows. The general arrangement was excellent considering the accommodation afforded. Not only were the exhibits high class in themselves, but they were of great educational value, particularly the fruit in packages, and that shown by the experiment stations. The commercial packages were superior in the matter of packing and material used to those shown last year. The many fruit men who attended the show were much pleased not only with the character of the exhibits, but also with the experience and pointers they gained by associating with growers from other parts of the province.

In quality of specimens and in number of varieties, the county exhibits were excellent. A large range of varieties were shown. The possibilities of each county were brought to attention of the passers-by and of growers from other parts of the province, in a manner that was conclusive. These exhibits illustrated the latitudes and localities where varieties do best. It was interesting to observe the variations in variety type produced by the varying conditions that prevail in the different counties. The finest display came from the county of Huron.

The plate fruit was well selected and of good quality. The competition in some classes was close and interesting. There is one point that would make this display even more attractive if it were observed by the exhibitors, and that is that competitors should send a few more apples of each variety than the stipulated five. Some times in transit and in handling one or two of the specimens become injured and bruised. It is best, therefore, to have a sufficient number to insure having five sound specimens. The pyramids of apples were fine, but the number of entries was not as large as might be expected.

A great improvement was noticed in the fruit packed in boxes and barrels. Compared with the package exhibits at the past three or four shows, the boxes this year were well made and of proper material, the packing was good and the fruit well graded. Some evidence of amateur work was noticed. Many of the boxes contained a straight pack which, while attractive for exhibition purposes, is too slow for business fruit growers. A diagonal pack is best for export. It can be handled more quickly, and the fruit stands a better chance of reaching its destination in good condition. In most cases, the packers seem to have had no regard for a proper bilge, which is necessary for tightness; the top layer of fruit was altogether too low in the box.

The material used for making the boxes was, in most cases, what is desired. With few exceptions, also, the dimensions of the material approached closely to the ideal that was mentioned by THE CANADIAN HORTICULTURIST when commenting on the exhibition last year. The tops were nailed only on the ends and not on the sides as well as was done in so many cases last year. Some improvement in nailing, however, can still be made. A properly nailed cover requires only eight nails. At the exhibition, a number of them were fastened with all the way from 15 to 35 nails. The best nails for the purpose are resined ones, not smooth, as were observed in a few cases. As the regulations called for commercial packages, the judges were compelled to disqualify boxes and barrels that lacked the proper brand and marking. Some of the best fruit shown did not receive a prize because this condition was not observed.

The fruit in barrels, also, was high class, and the manner of packing was practically all that could be desired. In two or three cases, the fruit was not packed as level as it should be. It is not difficult to face the head of a barrel of apples, but it requires considerable skill and judgment to "tail" properly. The apples on the tail must be on a uniform plane or the pressure will not be distributed equally. A box press that exerts a total pressure of 400 pounds will distribute, when the apples are level, about 15 or 20 pounds to each apple. This will not injure the fruit, but if two or three apples are slightly higher than the others, and receive 100 pounds or more pressure each, they are bound to be injured and probably crushed. Such injured apples soon would rot, and before the barrel reached its destination, practically all the fruit that it contains would be made unmarketable by slackness and rot.

Last year many of the barrels were bound with only six hoops. This year, all of them had eight hoops, which is better. The judges on the boxes and barrels had a difficult task. A few of their decisions did not meet with the approval of the exhibitors because the latter were not fully acquainted with all the reasons that made the judges place the awards as they did. In the barrel classes, for instance, a few points were deducted for wide staves. Barrels with narrow staves can be depended on to reach their destination in good condition as far as such is affected by the staves. As all staves absorb moisture on the inside from the apples, and naturally become dry on the outside from sun and air, wide ones are apt to warp and thereby spoil the appearance of the barrel and probably injure the fruit as well. On one or two barrels the nailing was bad. Six nails on the first hoop are enough, and no nails should be used on the second. Four or five nails are enough for each liner.

Three collections of fruit in packages for export were a credit to the associations that prepared them. The first prize collection put up by the Norfolk Fruit Growers' Association, Simcoe, Ont., consisted of a collection of apples that could scarcely be beaten anywhere. The character of the packing was excellent and the

quality of the fruit above the ordinary. The collection that won second prize was shown by The St. Catharines Cold Storage and Forwarding Company. It contained a greater variety of fruit than the Norfolk exhibit, and the packing was just as good, but the quality was not up to the standard. Four collections of fruit on plates were very attractive. The first prize was won by The St. Catharines Cold Storage and Forwarding Company, with a large selection of varieties and classes. The Norfolk Association won second prize with apples that were decidedly of superior quality. The third prize was awarded to the Grantham Fruit Growers' Association, which showed a nice collection. The fourth award was placed on an exhibit from the Orillia Horticultural Society, which showed a collection of apples that was most creditable for the district.

Some of the provincial fruit experiment stations were represented with exhibits of educational value. Secretary Linus Woolverson assisted the local experimenters who were present in answering questions of passers-by and growers who desired information respecting varieties and fruit culture in the various localities. The Wentworth station, of which Mr. Murray Pettit, Winona, is director, showed a splendid collection of grapes. The list of varieties was large and the bunches well filled. The Burlington station, directed by Mr. A. W. Peart, sent a nice collection of various fruits. Twenty-five varieties of apples were shown that had been produced on trees grown from scions secured in the Southern States. A nice feature of this exhibit was a collection of 50 varieties of currants, cherries, plums, pears and so forth in bottles. They were put up in antiseptic solutions and were exceedingly attractive. A nice collection of apples was shown by the Simcoe County station, which is under the management of Mr. J. C. Caston, of Craighurst. A large collection of apples was shown by the Bay of Quinte station, of which Mr. W. H. Dempsey, of Trenton, is manager. The size and quality of the fruit was excellent, but the space allotted for its display was not sufficient. The St. Lawrence station, managed by Mr. Harold Jones, Maitland, also showed a fine collection. A large display of fruit in bottles (116) was on exhibition from the Lake Huron station, managed by Mr. A. E. Sherrington. This station also sent 40 varieties of apples and pears. The display was excellent. A small but creditable exhibit was made by the Algoma station, which is managed by Mr. Chas. Young, Richard's Landing, St. Joseph's Island. A decidedly interesting and valuable exhibit was put up by Mr. W. T. Macoun, horticulturist at the Central Experimental Farm, Ottawa. It contained a large variety of apples and grapes. Many new and cross-bred varieties were shown.

## DECORATED DINING TABLES

The decorated dining tables did not appear to good advantage beneath the balcony at the rear of the hall. For this reason, they were disappointing. There did not appear to be the same interest taken in them, either from the competitors or the visitors, as in the past. Three of the four exhibitors did not take the trouble to secure proper dining tables and chairs. Instead, they used planks set on benches, and thereby lessened the effect. The table decoration shown by J. H. Dunlop easily won first prize. Messrs. A. Jennings, Toronto; T. Manton, and Geo. Manton, Eglinton, Ont., secured awards in the order mentioned.

## THE VEGETABLE EXHIBITS

The display of garden vegetables probably was the finest ever shown in Canada. Everything was of high quality and exhibited in an attractive manner. The entries were large and the competition keen. The judges had a difficult task in placing the awards. They did good work and most of their decisions met with the approval

of the exhibitors and the onlookers. A little dissatisfaction was expressed, over the decision in the class for Paris golden celery. Many growers thought that either first or second prize should have been given to one bunch of celery that received nothing, and which they claim was the largest and best lot in the collection. In the class calling for general collections of vegetables some superior specimens were shown. The first and the second prize collections were exceptionally good. They were shown by Messrs. J. G. Brown and W. Harris, Humber Bay, respectively. The third prize went to a fairly good collection shown by Mr. J. W. Rush, also

of Humber Bay. The collections of four varieties of celery were as fine as could be grown. The first prize went to Mr. Frank Jones, Humber Bay. The first prize for a collection of six varieties of potatoes was awarded to a clean, smooth lot shown by Mr. C. Plunkett, Woodbridge. For an excellent collection of eight varieties of onions, Mr. J. G. Brown won first prize. The ropes of onions were high class. All other vegetables were of fine quality and the classes were well contested.

#### MISCELLANEOUS

The biological department of the Ontario Agricultural College, Guelph, had an exhibit

of injurious insects and fungi, in charge of T. D. Jarvis, B.S.A. A trade exhibit of apples in boxes was made by the Biggs Fruit and Produce Co. of Burlington. A display of paper and cushions for barrel heads and boxes was made by G. P. Reade, of New York City, who is represented in Toronto by Thos. Bain, P.O. Box 472. Many visitors were attracted to the exhibit of Doolittle hose couplers, which device should be welcomed by all persons that use water hose. The preserved fruits in jars was of high quality. The Women's Institute booth in charge of Miss Shuttleworth, attracted the lady visitors, and added to the educational value of the exhibition.

## The Ontario Horticultural Association Convention

THE second annual convention of the Ontario Horticultural Association was held in Toronto, on Nov. 14 and 15, 1907. The president, Mr. W. B. Burgoyne, St. Catharines, was in the chair. The first day's attendance was exceptionally large, being quite an improvement on that of last year. After the president's address, Mr. H. B. Cowan, secretary-treasurer, reported a balance on hand of \$86.

Supt. J. Lockie Wilson, Toronto, then delivered an encouraging address on "The Work of Our Horticultural Societies," in which he said that the man who makes two flowers grow where only one grew before is a public benefactor, and he gave it as his opinion that "whosoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind and do more essential service to his country, than the whole race of politicians put together." He impressed upon the members present the fact that the work of the horticultural societies was a noble one, and mentioned how, by visiting the cotters' homes and instructing them in the best kinds of plants and flowers to grow, and telling them where they could buy them the cheapest and best, a great work could be done in beautifying those humble homes and making the lives of the citizens more pleasant.

#### WORK FOR SOCIETIES

"What Can Horticultural Societies Do to Promote Civic Improvement," was the topic on which Major H. J. Snelgrove, of Cobourg, Ont., read a very instructive paper. He said: "To this query my answer is: By arousing and inviting all citizens to develop beautiful and wholesome surroundings. By raising the standard of municipal thrift and tidiness. By materially contributing towards making our Canadian home life brighter, healthier and happier. To do these things, by means of the organization which we have at hand, working out its valuation by dint of patience, stick-to-itiveness and common sense." He submitted that the prime object of our horticultural societies should not be merely to cultivate a love of flowers by the distribution among the members, once a year, of seeds, plants, bulbs, shrubs, and trees, but our constant aim should be to educate the public sentiment along the lines of civic improvement, and thereby achieve the greatest good to the greatest number.

The question was raised by the president, Mr. W. B. Burgoyne, St. Catharines, Ont., that the only way to handle the bill-boards question would be to impose a license tax, and the larger the bill-board, the higher the license.

#### INCREASING MEMBERSHIP

"The Best Methods of Increasing the Membership of a Horticultural Society," was the subject of a talk by Mr. R. B. Whyte, Ottawa: "I do not suppose there is any subject that can come before the members of the horticultural societies with greater force than that of increasing the membership," said Mr. Whyte. "The more members we get the larger the grant and

the more we can do. After an experience of about 15 years in the matter, we have very definite ideas in the Ottawa Society. I do not know as there is anything better than a personal canvass on the part of the directors. There is hardly any community in the country that have not 200 or 300 people that are willing to pay a dollar if you can show them that you are doing something. I think that is the chief feature in increasing the membership."

Mr. Joseph Barker, Kincardine, Ont., remarked that when they first started the society in Kincardine all they thought they had to do was to appeal to the members and to inform the press that a horticultural society had been organized in the town and then they would do all the rest for them, but they learned, very quickly, that there was no response, not because they had any dislike to the name of the society or its object, but simply because there was not \$5 accompanying the request. By personal canvassing, Mr. Barker has built up a membership of 118 in his society. He intimated that his aim is to have a membership of not less than 150.

Other experiences in the matter of increasing membership were mentioned. Some delegates said that they gave concerts in connection with the monthly meetings in the winter, and strawberry socials after the monthly meetings in the summer. One member said that the society members met every month on the lawn of one of the members and held their meetings there and had a talk on roses in the rose season, or on peonies in the peony season, and in that way made the meetings more interesting to the people attending.

A valuable paper on "The Selection and Classification of Flowers," was read by John Cavers, Oakville, Ont. "Cities and Towns Beautiful," was the subject of a paper by Mr. J. S. Pearce, Park Superintendent, London, Ont. A paper on "How Are We to Expend Our Funds to the Best Advantage," was read by Rev. A. H. Scott, M.A., Perth, Ont. "Should the Horticultural Society Act be Amended, and If So, How?" was discussed by Mr. H. B. Cowan, Toronto. A paper on "Wild Flowers Worth Growing," was read by Mr. John Dickson, Hamilton. These papers, with the discussions that followed, will be published in later issues of THE CANADIAN HORTICULTURIST.

#### GROWING PEONIES

Mr. R. B. Whyte, of Ottawa, gave a remarkably apprehensive and instructive address on "The Growing of Peonies." He advised all gardeners to keep notes. The bud of the peony is as beautiful as that of the finest rose that ever grew, and the perfume is equal. He referred, also, to the time it first appears through the ground. He thought there was nothing more interesting than to see the fat red buds coming up through the ground, and then the beautiful profusion of leaves and stems, and afterwards the flowers, and then for months after the flowers are dead, the foliage is an ornament to the garden. The plant itself is good for 20 years;

you do not need to shift it. Mr. Whyte then read a long list of the different species of peonies that he recommended for growing in gardens.

Mr. Alex. McNeill, Chief, Fruit Division, Ottawa, delivered a very interesting address on "Fruit that Can Be Grown on a City Lot, 66 by 99 feet." Mr. McNeill referred to the different kinds of fruits and flowers that can be grown on a small city lot. He describes the details of training trees along the fences and trellises, and growing grape vines over small sheds. THE CANADIAN HORTICULTURIST expects to publish a more detailed account of this address at a later date.

#### OFFICERS AND DIRECTORS

The following are the officers and directors that were elected for the ensuing year: Pres., Major H. J. Snelgrove, Cobourg; 1st vice-pres., R. B. Whyte, Ottawa; 2nd vice-pres., Roderick Cameron, Niagara Falls; recording secretary and treasurer, H. B. Cowan, Toronto; corresponding secretary and editor, J. Lockie Wilson, Toronto; directors, Rev. A. H. Scott, M.A., Perth; W. Jeffers Diamond, Belleville; R. J. Franklin, Toronto; A. Alexander, Hamilton; Isaac Langstreth, Seaford; J. T. Rose, Brantford; J. S. Pearce, London; Auditors, J. O. McCullough, Hamilton; Mrs. Robt. McDowall, Owen Sound. The retiring president, Mr. H. B. Burgoyne, was elected an honorary director.

Hon. Mr. Monteith, in an address, said that the past year had given a great impetus to horticultural work, that the quality of the fruit productions had never been excelled, and that the exhibition in Massey Hall bore out strongly what he had said. In concluding, Mr. Monteith thanked the society for the support the department had received at the hands of the horticultural interests of the province.

#### RESOLUTIONS

It was resolved that a special committee, composed of Messrs. W. T. Macoun, R. Cameron, John Cavers, H. B. Cowan and Wm. Hunt, be and is hereby appointed to be known as the Committee on Nomenclature, with instructions to inquire into the whole question of the adoption in Canada of a standard on nomenclature, and descriptions of species and varieties of plants, including ways and means for the establishing and maintaining of such a standard; and to enter into correspondence with sister societies in this country and in some of the northern United States, with a view to securing the co-operation of two or more such societies in the preparation and publication of authentic lists of varieties of perennial phlox, Japanese iris and gladioli, the said committee to report at the next convention of the association.

Later it was resolved further: That a special committee, consisting of Mr. Macoun, Mr. Hunt and Miss Blacklock, be and is hereby appointed to act as a Novelties Committee to report at the next meeting of this association.

It was moved, seconded and carried that Mr. Cowan's address on the Horticultural Societies' Act, and all proposed amendments to Act, be

referred to the new directors with power to act.

Resolved that a special committee be appointed to draft a memorial recommending the Ontario Government to have embodied in the proposed new series of school books, readings on horticultural topics as suggested by Mr. Scott's paper. This was supplemented later with the resolution: "That the committee that just re-

ported be continued in office to prosecute during the year, the work referred to in the report adopted by further memorials to the Government or by interview with the Minister of Education and his deputies, in order to secure the introduction into the proposed new series of readers the horticultural features desired by this association.

## Fruit Growing in British Columbia

By the Representative of The Canadian Horticulturist, who recently visited British Columbia in the interests of Western Fruit Growers and of this Publication

THAT British Columbia will be the greatest fruit producing province in the Dominion is acknowledged by those who are conversant with the rapid progress in the growing and shipping of fruit that is being made in that province.

Intending purchasers should personally select their land. In many instances locations that appear good on the map are of little value, while adjoining lots may be desirable. In some sections the soil within a radius of a quarter of a mile varies from the best to soil that is almost useless.

The prices asked for land, compared with those being asked for fruit land in other sections of the Dominion, appears at first to be high. The average price is about \$125 an acre for unimproved lands. Prices range from \$10 to \$200 an acre. Some land is ready for the plow, while other land requires to be cleared. Clearing the land costs from \$50 to \$250 an acre. The apparent high price of the land is caused in some cases by the cost of the irrigation system required to secure the necessary water, but it is offset by the productiveness of the soil, and the long growing seasons.

Almost every kind of soil is found in the different sections of the province. It ranges from clay loam to a volcanic ash, mixed with sand. While the last mentioned soil may not appeal to fruit growers as one suited for fruit growing, it is the same soil as that found in the celebrated Hood River district in Oregon, where a wide range of fruit has been grown successfully for years. Some varieties of apples from the Hood River district this season sold for \$3.35 a box.

The climate in British Columbia is as varied as the soil. The southwestern coast section is mild in winter, and has excessive moisture. Other sections have a very small rainfall at any season of the year, and the soil requires irrigation to produce growth. Apples are grown successfully in almost every part of the province. Peaches are produced in the southern portion and Black Hamburg grapes, almonds, and other tender fruits have been grown in quantities in the Similkameen Valley.

Larger crops of fruit are said to be produced from the soil in British Columbia than from the soil in any other part of the Dominion. Some growers from the east claim to make two dollars in that province to every dollar they made in Ontario. A grower near Kelowna received \$626 for the strawberries grown on half an acre. Another grower received \$1,000 for strawberries grown on seven-eighths of an acre. From ten Northern Spy apple trees a grower picked over twenty five boxes from each tree, and sold them for \$1.60 a box.

It has often been remarked by the eastern growers that the flavor and color of the fruit grown in British Columbia is not equal to Ontario grown fruit. There is very little difference in the flavor, not enough to be noticed by the consumer. The color is all that can be desired. On an average there is more sunshine in British Columbia than in Ontario; on this account, the fruit should be more highly colored than eastern fruit. The size of the fruit is good. If large fruit is desired it can be produced. The writer saw King apples in Chilliwack

measuring eleven and three-quarter inches; Blenheim Orange thirteen and three-quarter inches, and Spy twelve and a half inches in circumference.

### THE MARKETS

The chief market for British Columbia fruit is the western provinces, but that market does not satisfy the growers in every respect. Many of them are looking to the British markets for an outlet for their best grades. It will not be long before eastern growers will be having British Columbia fruit competing with their fruit on the British markets.

In the packing of fruit British Columbia growers have learned much from their neighbors across the line and now are some years in advance of other parts of the Dominion. Barrels are not used. The growers claim that fruit in boxes can be handled more carefully and packed more attractively. They obtain higher prices for fruit packed in boxes than they could were it placed in barrels. Expert packers are paid large salaries, which are more than returned to the growers by the increased prices obtained for properly packed fruit.

New settlers can derive a revenue from their

land after the first year by planting the space between the trees with strawberries, onions, or potatoes. The profits to be made in this manner exceed in some cases the price paid for the land.

Scarcity of labor is a serious handicap to the fruit growing industry of British Columbia. The man who has a grown-up family is envied. The Chinese are found to be the most faithful workers, and are content with their position in life. The Japanese are more energetic and are anxious to be the equal of the white man. The Hindus are of little value for any purpose. White help is scarce and independent. As soon as a white laborer has a little money he desires to own land, and is not content to remain an employee.

The question of transportation is one that should be thought of when purchasing land. Great improvements are expected in this respect in the near future. Land is expensive at any price, when it is impossible to market the fruit at a low cost.

### CHINESE GARDENERS

Vegetable growing is controlled largely by the Chinese. They rent the land from the property owners, and judging from the farms seen by the writer they work the land to its full capacity. The Chinese peddle their vegetables in two baskets supported on their shoulders by a long stick.

Some of the best land for vegetables is to be found in the Chilliwack valley. Mr. J. H. Copeland, late of Lambton county, Ontario, is growing large quantities of celery. The soil on his farm is a black loam and it is producing a superior quantity of vegetables.

Irrigation in some districts is overdone. Some of the land is being irrigated unnecessarily. If the cultivator was kept working, it would conserve the moisture. Too much water is as disastrous as not enough. It takes much time and experience to know when and how to apply the water.

## Vegetable Growers' Convention

THE third annual convention of the Ontario Vegetable Growers' Association was a decided success. The papers were all discussed in a practical manner. From start to finish everything was done in a business way. The president, Mr. R. J. Bushell, of Williamsville, Ont., occupied the chair.

"Greenhouse Construction for Vegetable Growers" was the first matter taken up, and it was well handled by Mr. J. D. Fraser, of Leamington, and Robt. W. King, of Toronto. The prevailing opinion seemed to be that the day of the wooden frame greenhouse was gone, and that the tendency of the time was for a larger house, using iron frames, the objects desired being plenty of sunlight and ventilation. A larger and better plant was secured by allowing plenty of light and ventilation, and it was demonstrated that it was a mistake to allow plants to get too near the glass. Heating greenhouses was discussed at considerable length, the consensus of opinion being that for small plants, hot water was the best and for large plants, steam. It is of great importance to have the plant properly installed, so as to get proper circulation.

Mr. T. Delworth, Weston, Ont., gave a very interesting address on "Greenhouse Management." He strongly advocated ventilation. His ventilators are put under the plate so as to have the air above the plant and not toward the plant direct. Solid beds are preferable to benches, and do not require nearly so much watering.

At the afternoon session, "Melon Culture" was dealt with in an able manner by Mr. T. J. Gorman, of Outremont, Que., who sells melons in the New York market at \$12 to \$15 a dozen. Mr. Gorman advocates a large melon of good flavor. Mr. W. A. Emery, of Aldershot, Ont., led the discussion, and stated that the average city man did not know a good melon from a

bad one, and that a great many culls were put on the market. He advocated a medium-sized melon, of perfect flavor.

"Tomato Growing" was discussed at length by Mr. W. C. McCalla, of St. Catharines. During the discussion, it was stated that it is impossible to grow tomatoes for canning factories at 25 cents a bushel. Many gardeners are going to give up the growing of this vegetable unless better prices are paid. A paper on "The Marketing of Vegetable Crops," by Frank Williams, was much appreciated. It is published on page 301 of this issue.

### GARDEN INSECTS

Dr. Jas. Fletcher, of the Central Experimental Farm, Ottawa, gave a valuable address on "Insects that Trouble Vegetable Growers and How to Combat Them." He advocated the use of poisoned bran, lightly spread over the ground, to kill cut worms, and stated that most of the pests could be eradicated by the proper use of spraying materials and other well-known remedies. "The Vegetable Canning Industry" was dealt with by T. B. Revett, B.S.A., Toronto.

The president, R. J. Bushell, stated that as a result of the efforts of the Ontario Vegetable Growers' Association, certain protection on products coming from the United States had been granted by the Dominion Government. This had materially increased sales. All gardeners in his district had made half the price of his membership on a bushel of tomatoes, which, on account of this protection, he was able to sell for \$1.25 instead of 75 cents.

Reports of three conventions and of Ontario Horticultural Exhibition crowded out some excellent articles that were prepared for this issue, including "Notes from the Provinces."



# Ontario Fruit Growers in Convention

At the convention of the Ontario Fruit Growers' Association, held in Toronto on Nov. 13 and 14, many important items of business were transacted. A change was made in the basis of representation on the board by directors. Action was taken in the matters of nursery legislation, express rates, and terminal facilities at Toronto. The change in the basis of representation reduces by one the number of directors from the eastern part of the province, and adds one to the Niagara district. The following directors were elected for the ensuing year: R. B. Whyte, Ottawa; A. D. Harkness, Irena; F. S. Wallbridge, Belleville; W. Rickard, Newcastle; R. W. Grierson, Oshawa; A. W. Peart, Burlington; G. A. Robertson, St. Catharines; Jas. E. Johnson, Simcoe; D. Johnson, Forest; A. E. Sherrington, Walkerton; C. W. Gurney, Paris, and C. L. Stephens, Orillia. Reports were received from the cooperative and new fruits committees. They will be published in a later issue.

## TRANSPORTATION COMMITTEE

This report was presented by Mr. W. H. Bunting, of St. Catharines, who referred to the shortage of cars and the need for better railway facilities at stations and for transit, to the desire of fruit growers for stop-over privileges for assorting and grading apples at divisional points, and to the need for a definite means of securing redress for loss or damage due to the negligence, delay, or lack of proper equipment on the part of the railways.

## NURSERY CONTROL AND LEGISLATION

There is a feeling in the association that nurserymen should be compelled to guarantee stock true to name. Legislative control of nursery stock has been under consideration for some time. At the convention, both sides of the question were heard. A letter by Mr. E. C. Morris, of Brown Bros. Nurseries, was read. Mr. Morris took the ground that there is no need for legislative control, as no more than 5% of stock sold is untrue to name. It was contended that a guarantee bond would give no better guarantee than is now furnished by the standing which reliable nurserymen occupy. Mr. Morris thought that it would be unfair to demand compensation of \$4 or \$5 on a tree that proved untrue to name and which had been purchased from a nursery for 25 cents. Such would pay better than farming. Nurserymen are just as anxious as the growers to have their stock turn out satisfactory and true to name.

In replying to the foregoing, Mr. Geo. A. Robertson, St. Catharines, cited many instances where orchards had been planted with trees untrue to name and that resulted in large losses to the planters. He read a number of extracts from various laws enacted in the United States and in the Dominion provinces, respecting this question and the inspection of nursery stock. In conclusion, the following suggestions for the enactment of a law were made: 1. No nurseryman shall be allowed by law to send or sell any known variety under a new name, or to employ any other method for deceiving the public. 2. No firm shall be allowed to do business under more than one name. 3. All stock shall be free from noxious insects and fungous and other diseases. 4. That the law should be made more stringent with respect to the fumigation of nursery stock. 5. Stock shall be guaranteed true to name when sold as such; this stock should be tagged with the name of the variety and also the locality of production.

A lively discussion followed the reading of these two papers. Mr. D. L. Morris pointed out that there is a great chance for errors occurring in the production of nursery stock even though the nurserymen be honest and desirous of doing what is right. Employees often make mistakes unintentionally. Mr. W. E. Wellington stated that while fruit growers are as intelligent as

other men, nurserymen have as many rascally customers as rascally tree agents. There is no object in selling trees that are wrongly named. Mr. Wellington suggested that a committee of fruit growers meet a committee of nurserymen to discuss the question. The suggestion was adopted. Messrs. G. A. Robertson, W. H. Bunting and Robt. Thompson of St. Catharines, and P. W. Hodgetts, secretary of the association, Toronto, were appointed to act for the growers, and Messrs. W. E. Wellington, E. D. Smith and D. L. Morris, for the nurserymen.

## EXPRESS RATES

Some valuable information and suggestions were brought out in a paper on "Express Rates in Relation to the Fruit Industry," by J. L. Hilborn, Leamington. It will be published in a later issue with the discussion that followed. The transportation committee was commissioned to bring the questions involved and the complaints before the Board of Railway Commissioners. The members of the committee are: Messrs. W. H. Bunting, St. Catharines; L. A. Hamilton, Clarkson; R. J. Graham, Belleville; R. W. Grierson, Oshawa; E. D. Smith, Winona; J. L. Hilborn, Leamington; and Mr. Randall, of Grimsby.

The necessity for a new fruit market and terminal facilities at Toronto, was discussed by Mr. H. Dawson, Toronto, members of the City Council, Toronto; Board of Control, Toronto, and others. A full report of the discussion will be published later. It resulted in the appointment of a committee to meet a committee of city authorities to discuss the question. The fruit growers appointed were: Messrs. H. C. Fisher and Wm. Armstrong, Queenston; L. A. Hamilton, Clarkson and W. H. Bunting, St. Catharines.

## HORTICULTURAL STATION

An outline of the progress that has been made at the Ontario Horticultural Experiment Station was given by the director, Mr. H. S. Peart, Jordan Harbor. It is published on another page of this issue. In the discussion that followed, Mr. Sherrington stated that the farm should be of great value to southern Ontario, but would not benefit the growers in the north very much. For the latter section, it would be of greater value if it would cooperate in its work with the Central Experimental Farm. Mr. Sherrington suggested that the work at local experiment stations should be continued. He suggested that the Jordan Station carry on extensive work in the propagation of new varieties, and in the origination of others. Established varieties should be tested on different soils.

Mr. Murray Pettit, Winona, said: "If the new station can produce a peach with the productiveness, size, hardness, and shipping qualities of the Elberta, with the color and dessert qualities of the Early Crawford, and as early in season as Triumph, it will pay the total expense of its maintenance for many years to come. New varieties of plums also are needed, particularly one as productive, hardy, and of as good quality as the Lombard, with the shipping qualities of Monarch, and as early as the Japan varieties. The grape industry wants a new variety as productive, hardy and vigorous as Concord, as early as Champion, and with the shipping qualities of the tough-skinned Rogers. The station can do excellent work in testing the value of fertilizers on fruit orchards. Pruning should be given attention. Demonstrations could be made of the respective merits of low-heading and high-heading peach trees. Experiments should be conducted also in thinning fruits, and in spraying." Mr. Pettit suggested that a board of control be appointed to assist in the management.

"The horticultural department at the O.A.C., Guelph, has done good work for similar localities," said Mr. E. D. Smith, M.P., Winona, "but it is of no value to southern Ontario. The sta-

tion in the Niagara district was needed long ago. While fruit growers are growing a large number of varieties, the question is, 'Are they growing the best that are in existence?' Extensive variety tests at this station should determine this. We want five or six varieties of peaches, like the Elberta, but of different seasons. There is not a good all-round pear. If the variety does not blight, it has other defects. For this reason, many growers are abandoning this industry. It would be well to try a cross between Anjou and Seckel. We want a good shipping grape for the west. That market is all our own, as British Columbia cannot grow grapes successfully. The Lindley is an excellent shipping variety, but it bears a good crop only once in about 20 years. We want a grape that has a good skin, that is a good bearer, and that will stand rough handling."

Dr. Wm. Saunders, C.E.F., Ottawa: "It is almost impossible to combine all desirable features in one variety. Such should not be expected from the new station, or any other. The aim should be to produce the best possible. If a committee of consultation be appointed, it should not consist of too many members. Each man will have his own opinion, and add to the confusion."

Mr. F. H. Pattison, of *The Weekly Fruit Grower*, Grimsby: "There is more money invested in Ontario in tender fruits than in apples. The O.F.G.A. does not seem to appreciate this fact, as it appears to have degenerated into an apple growers' association. The most important work that should be undertaken at the new station is the origination of new varieties of tender fruits, and experiments in spraying."

## MARKET CONDITIONS IN ENGLAND

"Market Conditions in Great Britain," was the subject of an address by Mr. J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa, who spoke as follows:

"There is a great market in the west for tender fruits. Pears and tomatoes can also be shipped successfully to Great Britain, although the latter is rather difficult to transport in cold storage. Great Britain will take all the first-class fruit that Canada has to offer. There is no need to look for other markets. They can handle all of the apples that we can produce. The larger the quantity, the more notice is taken of it. While all dealers in Great Britain are willing to admit that Canadian apples are best, they do not always give as much for them as for apples from other countries. Canadians are likely to meet new competition. Large quantities of Tasmanian apples are being put on the English markets, and are meeting with favor from dealers and consumers.

"British dealers say that Canadian apples have improved in quality and grade during the past few years. Purchasers have greater confidence in Canadian apples than in American. Our growers should be particular not to misrepresent contents of packages. Apples seldom are sold according to marks on barrels. Merit alone counts. It is a mistake to send packages wrongly marked.

"In respect to selling apples by auction system, would say that, personally, I would prefer to sell f.o.b. to consigning, although good sales often are made on consignment. It is better to consign to the large centres rather than to inland points, as there is greater competition."

Mr. Ruddick referred also to the canned fruit trade, and mentioned its possibilities. There is a good market for canned apples, but only one variety should be placed in a can. The demand for raspberry pulp is large. England will take large quantities of cider. The average price is 17 cents a gallon, and the freight four cents. Growers can determine for themselves whether or not the industry would be profitable.

## OTHER VALUABLE PAPERS

Space in this issue of THE CANADIAN HORTI-

CULTURIST does not permit of more than a passing mention of a number of other valuable papers that were read. They were as follows: "The Place of the Fall Apple in Future Planting," by Alex. McNeill, Chief, Fruit Division, Ottawa; "Commercial Fruit Growing in Western New York," Willard Hopkins, Youngstown, N.Y.; "Common Enemies of the Fruit Grower," T. D. Jarvis, B.S.A., O.A.C., Guelph; "The Fight Against the Scale in Pennsylvania," Prof. H. A. Surface, Harrisburg, Pa.; "Horticultural Development in Ontario," Prof. H. L. Hutt, O.A.C., Guelph; "Influence of Stock and Scion upon Varieties," Prof. Surface and W. T. Macoun; "Business Systems for Cooperative Associations," by an expert. All these papers will be published in part or in full in subsequent issues.

#### IT WAS RESOLVED

That this association desires to express its appreciation of the value of the work carried out in the past through the experimental fruit stations, and hopes that this work may be extended and enlarged. That we would respectfully suggest as the line along which extension takes place, that the new Jordan farm be made the source of supply from which new fruits, tested or developed there shall be sent to the local stations for the purpose of testing their adaptability to the various localities, and, finally, that the director of the Jordan station be made general supervisor of the local stations, subject to the direction of a Board of Control, as to the work both at Jordan and at the local stations.

## The Apple Crop and Prices

LARGE quantities of apples are being shipped to Old Country markets, principally from Ontario and Nova Scotia. The situation is mentioned by crop correspondents of THE CANADIAN HORTICULTURIST as follows:

#### DURHAM COUNTY

Newcastle.—The apple crop was large, but lacked somewhat in color and size because of the short growing season. Dealers who paid high prices say that they are losing money, as the net returns are lower than was expected. The farmers, however, are receiving 20 times the profit received in other years from the same acreage. An increased area will be planted next spring.—W. H. Gibson.

#### HALTON COUNTY

Oakville.—There are very few apples stored this year. They have all been shipped. No. 1's sold for \$3 to \$3.50 a bbl., and No. 2's for \$2.75. A large number went to the United States. Apples that are shipped to the Old Country should net good returns.—W. H. MacNeil.

#### LINCOLN COUNTY

St. Catharines.—There has been no trouble in making sales this season, more enquiries having been received than could be supplied. No. 1's sold for from \$3.25 to \$3.50, and No. 2's from \$2.40 to \$2.75. Only a few will be stored. Prices to buyers outside of the association were \$1.25 to \$1.50, the grower to do the picking. All apples were clean.—Robt. Thompson.

#### OXFORD COUNTY

Ingersoll.—In some sections the apple crop was large, but in others only fair. The apples were rather small but of good quality. Especially where spraying was done was the fruit good. Prices on the average were \$1.50, picked in orchard, while some extra good lots brought \$2.—J. C. Harris.

#### GREY COUNTY

Owen Sound.—There will be about 26,000 bbls. of apples shipped from here. The fruit is of good quality and well colored, but rather small. The Owen Sound Fruit Co. will ship about 8,000 bbls. Prices ranged from \$2.25 to

That the association desires to express its cordial approval of the Fruit Marks Act, and of the manner in which same has been administered under the direction of Alexander McNeill, Chief of the Fruit Division of the Department of Agriculture at Ottawa; we believe the high standing secured by the Canadian apple in the markets of Great Britain is largely due to the Fruit Marks Act and the work done under it.

That the association tenders its thanks to Prof. H. A. Surface, Mr. Willard Hopkins, and to the other gentlemen who have assisted in the program.

That the association recognizes the value of the work performed by the Canadian Industrial Association in the erection of a suitable building on the exhibition grounds for the proper accommodation of the fruit exhibits.

That the association endorses the action of the provincial government in providing for a display of Ontario fruit at the exhibition of the Royal Horticultural Association in London, England.

That the association recognizes the liberality of the provincial government and the council of the city of Toronto, in providing funds for the carrying on of the Ontario Horticultural Exhibition and the assistance of the citizens in helping to make it a success.

That the association tenders its thanks to the retiring president, Mr. Harold Jones, for his intelligent and energetic administration of its affairs and regrets that, owing to a change in the constitution, it is unable to avail itself of his services for another year. The results of the year's work will remain as a memorial to his industry, discretion and public spirit.

\$2.50 for falls and \$2.50 to \$3.25 for winters. There will be about four or five cars stored this season. About 8,000 bbls. have been shipped for export, but about 5,000 of them will be stored by the buyers in Brighton.—Adam Brown

#### NORFOLK COUNTY

Simcoe.—Apples in sprayed orchards sold for \$3 a bbl. Unsprayed orchards sold for from \$1.50 to \$2.—James E. Johnson.



#### HASTINGS COUNTY

Belleville.—The Belleville Apple Growers' Co-operative Association sold their Spys at \$4 a bbl. for No. 1's and \$3.25 for No. 2's, f.o.b. here. They also sold No. 1 Colverts for \$2.60 and \$2.70, No. 2's at \$2.45 and No. 3's at \$1.75. Apples so far have realized satisfactory prices. There will not be many apples stored this year.—F. S. Wallbridge.

#### HALTON COUNTY

Nelson.—The Mt. Nemo Fruit Growers' Association will ship about 3,500 boxes. They are putting Nos. 1's and 2's in boxes and selling No. 3's with the culls to canning factories and on the local market. Buyers began season by offering \$1.50, picked. Later they increased to \$1.75 for No. 1's and 2's, \$1 for No. 3.—R. M. Spence.

It is interesting to note that a shipment of gooseberry and Herbert raspberry plants was made recently from the nurseries of E. D. Smith, Winona, Ont., to the chief of the department of agriculture in Finland.


  
**POULTRY DEPT.**
  
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#### Poultry Problems

The high prices that prevail throughout the Dominion for all grains cause some anxiety to most poultrymen as to whether or not it is worth while keeping poultry for profit. The fact of the matter is, that in many sections the farmers are disposing of their stock at very low

prices. It is to be regretted that this idea of a general reduction of stock should spread further. Reports state that in some sections, particularly in the back part of Addington County, the farmers are slaughtering cattle, in some cases animals not fat enough for human consumption, and also selling cows at from six to eight dollars a head.

While the crop reports show a falling off of from 10 to 40 per cent. of last year's reports, there is, as far as I can learn, no reason for the extremely alarming reports which are the cause of the farmers selling their stock at the ruinous prices mentioned above.

The heavy rains which were general in the eastern part of Ontario in the beginning of November prevented the bringing to market of the usual supply of hay and grain, owing to the impassable roads in many places. The outcome of this heavy reduction of all stock can have but one effect, and that is a proportionate shortage of dairy and poultry produce next spring and summer. It is a safe prediction to make, I think, that the poultry keeper who keeps his stock will be more than compensated by the high prices which must be obtained for eggs next year. Economy, though, should be practised now more than at any time. In many flocks there are old hens, perhaps old males, and a number of surplus or cull cockerels. These should be disposed of at the earliest opportunity. Some try to economize by reducing the ration. This is the height of folly, and decidedly cruel at this time of year.

With good, hard roads and sleighing, the grain situation, in Ontario anyway, should be improved. By all means, keep over this winter, at least, the usual number of laying hens, for either the price of feeding materials must come down or the price of poultry produce go up. These matters are bound to adjust themselves with all concerned in the near future.



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## Should Hold a Conference this Winter

LETTERS on the need for another Dominion Fruit Conference continually are being received by THE CANADIAN HORTICULTURIST. It is the unanimous opinion that another conference should be called for the spring of 1908. Fruit interests in all parts of Canada feel the need.

Mr. Jas. S. Scarff, Woodstock, Ont.: "I am pleased to notice that a move is being made for another Dominion Conference in the near future. I am decidedly in favor of it as I feel assured a vast amount of good resulted from the conference held in March, 1906, at Ottawa. Owing to lack of time at that meeting, a number of important matters that were on the program for consideration were not dealt with and should be placed on the program at the next conference.

"I feel quite assured that it is the wish of the leading fruit growers of the provinces that another conference should be held at an early date, and I have no doubt but that, when the matter is brought before the Hon. Mr. Fisher, he will recall to his mind that he assured the delegates to the last conference that another one would be called within a reasonable time. I would therefore suggest that the executive committees of the various provincial organizations lay the matter before the Minister of Agriculture for the Dominion, urging him again to call the delegates from the various provinces together for another conference. In reference to questions that might be discussed at the next conference, I can fully endorse the suggestions made by the secretary of the Ontario Fruit Growers' Association in the August number of THE CANADIAN HORTICULTURIST."

Prof. H. L. Hutt, O.A.C., Guelph: "I certainly approve of holding another Dominion Fruit Conference, and have no doubt that the

Hon. Sydney Fisher will be as good as his word and call such a conference as soon as he deems wise. This is an age of conferences, and sometimes the thing is overdone. I think at least two years is often enough for the bringing together of delegates from all parts of the Dominion as was done last time. The important work accomplished by the last conference has had its effect upon the fruit interests of the whole Dominion, and there are many questions still to be taken up at the next convention."

Mr. Jas. C. Ford, Oakville, Ont.: "It would be well to have another Dominion Fruit Conference, as the last was very beneficial to all those who attended, and to the industry as a whole. One point that was not touched on, and that should have been, was the sizes of baskets. This is not strictly defined. The manufacturers are making all sizes and shapes. The Marks Act is not being enforced thoroughly. I know that some manufacturers are making the six-quart basket and not stamping them. This arises from the fact that the baskets are not all uniform, and it is very hard to detect the sizes, unless you are thoroughly acquainted with the manufacturing of baskets. I would like to have a uniform size, length, depth and width, of all packages adopted. The government might have forms and sell these, or give them to the manufacturers, so that there would be no trouble then in the different sizes."

Mr. R. J. Graham, Belleville, Ont.: "If it is decided to hold another Dominion Fruit Conference, I think that the shippers and jobbers should have some consideration and be able to vote on questions discussed. We can do much good by getting all sections of the Dominion interested in fruit together, and I cannot see that any harm could come of it. The

package question should be definitely settled, fixing a maximum as well as minimum size for boxes and barrels. The No. 2 grade of apples might be better described. The transportation question needs much attention. Questions regarding the growing of fruit should not take up much time at such gatherings, but the packing, selling, shipping and other commercial matters could be more profitably attended to."

Mr. J. M. Fisk, Abbotsford, Que.: "The conference held in 1906 has resulted in improving conditions along the whole line, but there is yet ample scope for further improvements. Transportation is still a complex problem. The nomenclature of our fruits should be dealt with by a standing committee, as there are too many synonyms, and it frequently occurs that the same variety is grown, sold, and even exported under two or more names. One name for a variety should suffice for the whole Dominion. These are many other live problems that require further legislation to meet the needs of the present age.

"The cooperative scheme of spraying, grading, packing, canning, shipping, and selling our fruits, should be worked for all it is worth in every section of the Dominion where it is practical to do so. It would raise the commercial value of our fruits, and be more remunerative to the growers. Cooperation has done wonders for the dairy interests of the Dominion, and should, when properly managed, produce as good results for the fruit growers.

"It is the custom of the American Pomological Society to meet once in two years, and they find plenty of matter to engage their attention for several days at each session. At our last conference in 1906, the question of forming a Dominion Pomological Society was left in obedience, because of the deep interest and sympathy in our work taken by the Minister of Agriculture, who gave us to under-

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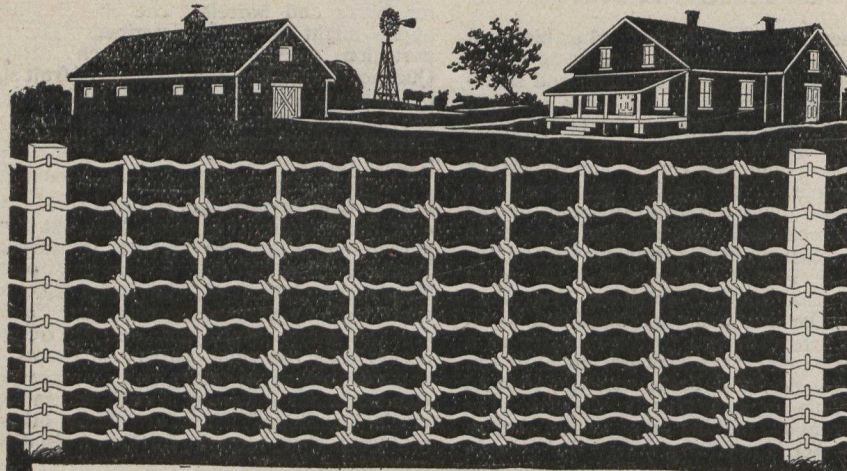
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stand that another conference would be held in the near future. Should such materialize, it would meet all the needs of the fruit interest, as by such means the growers and shippers are brought into closer touch with the government from the fact, that the conference being held at Ottawa during the sitting of the House enables many of its members to attend the conference, who become interested in the work, take part in the discussions, and are prepared to support such resolutions as are adopted by the conference.

"The method of each province being represented by a delegation of prominent fruit growers is more practical, and aids more in developing the spirit of cooperation, than a Dominion society with a government grant and membership would do, particularly if holding its sessions away from the Capital."

## Apple Cold Storage

An investigation of the cold storage of apples was begun in 1906 by the Iowa Agricultural Experiment Station in cooperation with the United States Department of Agriculture. These experiments were largely an application to Iowa fruit and conditions of fundamental principles of apple cold storage determined during the last few years in other sections of the country by the United States Department of Agriculture. As the results of the experiments are in accord with the general principles developed in other sections of the country, a brief summary of the Iowa work is herewith given.

### THE TIME TO PICK APPLES

It has been determined that well-colored, hard-ripe fruit will keep better in cold storage than fruit picked before it is mature or after it has gone beyond full ripeness. Many varieties of apples, when stored immaturity, develop a trouble in storage known as "scald," the skin becoming brown in patches, especially on the green or poorly colored side of the apple, which detracts from the appearance and commercial value of the fruit.

### STORE ONLY THE BEST GRADES

It usually pays to store only the best grades of fruit. The poorer grades of fruit are generally of low commercial value and do not warrant the expense of cold storage except when the apple crop is scarce. Inferior fruit has been found to deteriorate considerably in storage from decay starting in worm holes, around scab spots and in other imperfections. The fruit needs to be picked with extra care. A bruise or cut in the skin made with the finger nails, by dropping apples on each other in picking, by emptying them into the boxes or barrels, and by handling the packages roughly, becomes very conspicuous as the season advances and detracts from the appearance of the fruit, beside making an easy starting place for destructive rots. This is especially true of tender-skinned fall varieties like the Wealthy. Most of the commercial losses in apples from decay are related primarily to the rough mechanical handling of the fruit.

### STORE QUICKLY AFTER PICKING

The best results are secured when the fruit is placed in cold storage quickly after it is picked and packed. A delay of a week in storing the fruit in warm weather, will cause the fruit to begin to deteriorate a month or more earlier than it would if it had been stored quickly after picking. The danger of losses from decay, scald and other troubles is also much less when the fruit is stored quickly.

### STORE AT 32 DEGREES FAHR.

Various temperatures for the storage of fruit have been tested. A temperature of 32° gives the most satisfactory result in commercial practice, but the fruit keeps well for a shorter time in a temperature as high as 36° if stored quickly after picking.

The keeping quality of the apple has been tested when stored in barrels, bushel boxes and



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crates. For tender, quick-ripening fall varieties, a box has given the best results, as the fruit cools more quickly than it does in a barrel. The barrel is satisfactory for the slow-ripening winter varieties, while an open crate is desirable only when the fruit is to be stored for a short time, as it is likely to shrivel when stored in an open package.

The use of paper wrappers preserves the brightness of the fruit, prevents bruising from contact in the packing, and, with some varieties, appears to assist in keeping the fruit in prime

condition a little longer. Unprinted newspaper makes a satisfactory wrapper. It is adapted to the storage of high-priced fancy fruit.

DO NOT STORE TOO LONG

The most satisfactory result is secured when the fruit is withdrawn from cold storage and used while in prime condition. If held beyond this time, it deteriorates rapidly after removal from the low temperature, and, if withdrawn while the fruit is prime, it appears to keep as long as apples in the same condition of ripeness that have not been in cold storage.

Petroleum Emulsion for the San Jose Scale

BULLETIN No. 49, by C. D. Jarvis, of the Storrs Experiment Station, treats of a new remedy for the San Jose scale. The lime-sulphur wash, which for a number of years has been considered the standard remedy, has many undesirable qualities. It is corrosive to man, to horses, and to spraying apparatus; its preparation requires care, time and an elaborate outfit; it must be applied while warm, and if applied in the fall frequently causes injury to the trees.

The various proprietary remedies or so-called "soluble oils" on the market have been thoroughly tested and favorably reported upon by several experiment stations and prominent fruit growers. The cost of these preparations, however, makes their use almost prohibitive for commercial orchardists. These soluble oils are concentrated petroleum emulsions, made by a process known only to the manufacturers, and are the outcome of the strong demand for an efficient scale remedy that may be more conveniently prepared and less offensive to handle.

The Storrs Experiment Station, in the bul-

letin referred to, describes a method of preparing a "soluble oil," which after one year's observation, shows signs of becoming a very efficient and convenient remedy. Messrs. J. H. Hale, of South Glastonbury, and Barnes Brothers, of Yalesville, who tested it in an experimental way last year, report favorable results. The formula, which consists of two parts, follows:

1.—THE EMULSIFIER

- Carbolic acid (crude liquid 100%) . . . . . 2 quarts
  - Fish oil (pure Menhaden or whale oil) 2½ quarts
  - Caustic potash (granulated) . . . . . 1 pound
- Heat to 300° F., remove from the fire and immediately add
- Kerosene . . . . . 3½ quarts
  - Water . . . . . 5½ quarts

Very serious difficulty has been experienced in getting materials of the proper grade. This is especially true with regard to the local dealers who are not familiar with the requirements and who are likely to substitute "something just as good."

The emulsifier may be made up in any quan-

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Advertisements under this heading inserted at rate of one cent a word for each insertion, each figure, sign or single letter to count as one word, minimum cost, 25 cents, strictly cash in advance.

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To Fruit Growers

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tity and kept indefinitely. The cooking is best done in an iron kettle equipped with a cover and so arranged that it can be readily removed from the fire. The mixture being inflammable, it is nnsafe to do the cooking near a building.

2.—THE COMPLETE SOLUBLE OIL

Water.....	1 part
Emulsifier.....	8 parts
Crude petroleum.....	18 parts
Rosin oil.....	4 parts

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This part of the formula may be made up at any time without heat. The materials should be added separately and in the order named.

By securing the materials in large quantities the complete "soluble oil" may be made up for 16 to 18 cents a gallon. If diluted with 15 parts water, as is recommended, the spray mixture costs slightly over one cent a gallon. The lime-sulphur wash costs, including labor and fuel, at least one and one-half cents a gallon and the commercial soluble oils cost, depending upon the amount of dilution, from two and one-half to three and one-half cents a gallon.

DIRECTIONS FOR USE

After a thorough stirring, take one part of the "soluble oil" to 15 parts of water. Before mixing up large quantities, pour a few drops in a glass of water to see if it mixes. If it has been properly made the mixture will form a milky emulsion without any free oil on the surface. When satisfied that it will readily mix or "emulsify," a convenient way is to pour three gallons of the soluble oil into a 50 gallon spray barrel and fill the barrel with water.

Thoroughness of application is of utmost importance. Badly infested orchards should receive two applications, one in the fall and the other in the early spring. As a regular practice, however, one application, just after the leaves drop in the fall, should keep the insect in check.

Where the leaf curl is prevalent in peach orchards the oil spray in the fall may be supplemented by a spring application of lime and sulphur. A finer nozzle should be used for the oil than for the lime-sulphur wash. In this way more thorough and more economical work may be done. Because of its greater spreading action and of its adaptability to a finer nozzle, one gallon of oil emulsion will go as far as one and one-half gallons of the lime-sulphur wash.

Complete information is given in the bulletin regarding the source and cost of materials, the preparation of the "soluble oil," the necessary precautions and the time and method of application. The bulletin will be sent free upon request by addressing the Storrs Experiment Station, Storrs, Connecticut.

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**Western Notes**

By a Staff Representative

The west has many attractions and novelties for the horticulturist. In the fall, the north-shore route of the C.P.R. presents a cold and harsh appearance; the fields of Manitoba appear brown and dry. Like oases in a desert, from the horticulturist's standpoint, are the station grounds at Regina and Calgary. The beautiful flowers and green grass are refreshing to look upon. The landscape part of the work reflects credit upon the designers. They have made good use of the limited amount of space at their disposal.

Upon entering the Rocky Mountains, one does not expect to find such beauty spots as the station grounds at Field and Glacier. Geraniums, nasturtiums, coleus, stocks, snapdragon, and other equally tender plants were in full bloom early in November. Snow-clad mountains enclose each of these beauty spots, and to travellers, after many hours of riding through canyons and around mountains, their appearance is a sight never to be forgotten.

As the coast is approached, the traveller observes that British Columbia flower growers are more favored with mild climate than are those of Ontario. In Vancouver and New Westminster, sweet peas, dahlias, roses, stocks, and many other flowering plants were in full bloom in November. While at the home of Thos. R. Pearson in New Westminster, THE CANADIAN HORTICULTURIST's representative was presented with a large bunch of roses. They were equal to anything grown in Ontario at any season of the year. Dahlias were seen growing as large bushes. As many as 50 or 60 large blooms were counted on a bush at one time, each bloom a perfect flower, and lots of buds showing.

Another novelty is the hollies. These shrubs are now at their best, being loaded with large red berries. Rhododendrons and azaleas are perfectly hardy. Many beautiful specimens are to be seen on the lawns of the residents of the coast cities. Chrysanthemums were seen everywhere, many of them being in flower late in October.

Please send a sample copy of THE CANADIAN HORTICULTURIST. In the past I have been taking United States papers, but in the future I want home publications.—R.W., Newmarket, Ont.

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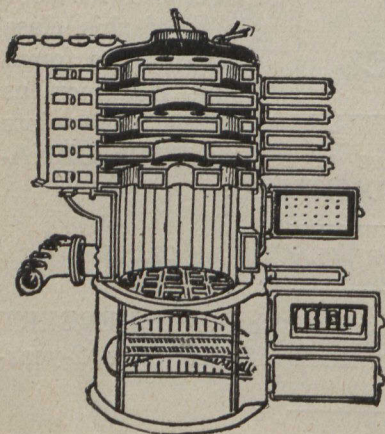
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## Horticultural Progress in Nova Scotia

THE Department of Agriculture of the Government of Nova Scotia is making its influence felt in all lines of agriculture and horticulture in the Maritime Province which it represents. Recently Principal Cumming, Secretary for Agriculture, associated with Mr. F. L. Fuller, Superintendent of Agricultural Societies and Associations, imported from Great Britain a splendid selection of Clydesdale horses, Ayrshire cattle and Highland sheep. They also purchased in Ontario and other parts of Canada some 98 head of pure-bred rams. Almost all of this stock has, during the months of September and October, been disposed of by public auction and the people's own prices, under bond to be kept within the province for breeding purposes.

During his visit to the Old Country, Mr. Cumming arranged with Mr. J. Howard, Agent-General for Nova Scotia, for a large exhibit of Nova Scotia fruit, to be shown at the Royal Horticultural Society Show at the Crystal Palace and at various local shows in England. This matter had been partly taken in hand by Professor Sears before his resignation from the chair of horticulture at the Agricultural College in Truro, and it would have been difficult to have carried out the details had it not been for Mr. G. H. Vroom, of Middleton, N.S., Dominion Fruit Inspector, having received permission from Ottawa to cooperate with the local department to make this exhibit a success.

Through Mr. Vroom's efforts, there have been forwarded to London, England, via boat sailing on October 29, the equivalent to 240 boxes of Nova Scotia's choicest fruit. To be exact, there were 150 boxes and 30 barrels, representing 30 varieties. This consignment of fruit was exhibited at the Royal Horticultural Society Show, held in London on November 28 and 29. It was entered in competition with fruit shown from the various provinces and, in some

cases, colonies of Great Britain. Part of this fruit was bought outright by the government, but the major portion of it was sent forward in consignments of from 5 to 12 boxes from private growers, with the understanding that the fruit will be sold at public auction immediately after the exhibition, and the proceeds go to the growers. Later on another shipment will be made with which to supply the exhibition at the Crystal Palace, London, and also for local shows throughout Great Britain.

For a number of years Nova Scotia has been exhibiting fruit at the above shows, but, for the most part, the exhibit has been limited, especially in quantity. It is expected that the large exhibit sent over this year will form a noteworthy feature of the various shows and will serve to exploit the valuable fruit areas of this province to a greater degree than ever before. Another important aim of this exhibit is to test the possibility of selling choice Nova Scotia fruit, in boxes, in the London markets. At the present time, practically all the fruit from this province is put up in barrels. However, there is a growing feeling that, at least by some fruit growers, an effort should be made to capture a share of the high class "box-fruit" market.

Fruit growers in the Annapolis and Cornwallis Valleys are feeling most optimistic over the outlook for this year. The crop has been considerably above the average, the quality in general superior, and the prices almost record ones. This means a large inflow of money to this part of Nova Scotia and affords a special encouragement to those men who, during the past few years, have been setting out large areas of new orchards.

The Agricultural College at Truro opened its winter session on Tuesday, November 5. This date is much later than the date of opening



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of other institutions of the same kind in Eastern Canada. However, so many of Nova Scotia farmers' sons are required to pick and pack the apples and to gather in the potatoes and root crops that it is impossible for them to leave home until the fall season is about over. The attendance of students is good and everything bids fair for the ultimate success of this useful institution.

Mr. P. J. Shaw, B.A., has been appointed lecturer in horticulture at the college, in succession to Prof. F. C. Sears, who last spring accepted a position on the horticultural staff of the Massachusetts Agricultural College. Mr. Shaw spent last summer studying at Cornell and Amherst, Mass., and also visited various fruit sections in New York state and spent a few days at St. Anne de Bellevue and the Central Experimental Farm, Ottawa. Mr. Shaw was born and brought up on a fruit farm near Berwick, N.S. He is a graduate of Dalhousie College and

was one of the Macdonald-Robertson group of school teachers who took courses in Nature Study at the prominent United States and Canadian institutions and, subsequently, took charge of this work in his own province. His training is excellent and his work has been of a high order, so that we feel sure in predicting that the Nova Scotia college will maintain its standing along horticultural, as well as other lines of work.

The Department of Agriculture will shortly send inspectors into the area which was discovered to have been infested with the brown-tail moth last spring. Their report will be looked forward to with interest and the subsequent procedure of the Department will largely depend upon the standing of affairs as found by these inspectors. In any case, no effort will be spared to try to eradicate if possible, or at any rate keep in control, this most troublesome insect pest.

## Progress at Horticultural Experiment Station

H. S. Peart, B.S.A., Director, Jordan Harbor, Ontario

THE property at Jordan Harbor, Ont., now known as "The Horticultural Experiment Station," was very generously donated to the Ontario Department of Agriculture by Mr. M. F. Rittenhouse last year, and soon afterwards work was commenced in preparing it for experimental work. The farm, which contains about 90 acres, was formerly two small places.

Last year a start was made in removing old buildings, cross fences and dead trees. During the winter, the wood-lot was cleaned up, forest weeds removed and about four acres made ready for reforestation. This spring a number of seedlings were planted and these have made a fair

growth. This work is to be continued next year under the direction of the Forestry Department of the Ontario Agricultural College. Most of the farm was seeded with red clover in oats, so that very little has been done along horticultural lines this season.

Last June, Mr. W. H. Day, of the O.A.C., made a complete survey of the property and prepared a plan for tile draining which was undertaken at once. During the next 10 weeks a number of men and teams were busy at the drainage work and 10½ miles of tile were laid. This outlay at the beginning should very materially increase the value of the farm for the work which is to be done for the horticultural public of Ontario. About half a mile more drain will be laid this fall.

\* A portion of an address delivered at the convention of the Ontario Fruit Growers' Association last month.

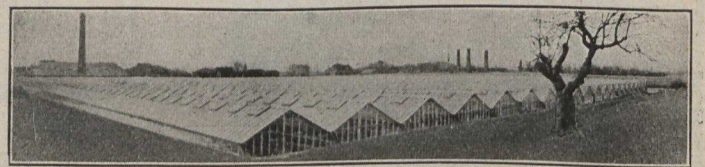
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GOOD QUALITY, FLAT, EVEN  
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Early in the spring, some work was done to hold the lake front from washing and a wall of brush and boulders was built. This has held the bank during the summer, but as we have had no very heavy storms the lasting effects cannot be ascertained with any degree of certainty. In addition to the brush, a concrete pillar has been made to throw out into the lake and several others are contemplated.

A number of service roads have been made at convenient distances through the farm, so that all parts may be easy of access at all times. These have been graded so that they drain readily and may be easily kept in repair. Through the part to be used for ornamental planting has been laid out a curved drive on which the principal buildings will face. Early in the summer the lake road was graded and a part has been gravelled, which adds very much to the appearance of the place.

Last year the apple orchard was in sod. A part was plowed in the autumn, a part in the spring, while the balance has been left in sod. Half of the fall and half of the spring plowed sections were given clean culture all season. The other halves were seeded with a cover crop, but owing to the drought very little of the seed germinated. Very little difference can be noticed in the appearance of the trees on the two tilled sections. On the sod, the trees show the effect of the lack of moisture as indicated by the less vigorous and healthy growth. This experiment should be carried on for several years. This orchard is in good condition and can be used to good advantage in spraying and pruning demonstrations as well as the cultural test which has been undertaken.

Before closing, I desire to draw attention to the road improvements along the town line which are being carried on by Mr. Rittenhouse, according to the plans prepared by the Department of Public Works. This road originally was narrow, crooked and muddy. At present it is being macadamized and drained so that it may be used as an illustration of good road

making. The widening and improving of the road will add greatly to the general appearance of the station and in addition will give a first-class road to connect with the Hamilton, Grimsby and Queenston stone road at Vineland.

The foregoing epitome gives only a general idea of the preparatory work that has been carried on this season. A good foundation is more than half the building, and the work this summer has been of the nature of a foundation.

### Spraying for Potato Blight

Careful potato growers can no longer doubt the advantages of spraying in "blight" years; but some doubt whether the practice is profitable year after year. Tests along this line have been continued for five years by the experiment station at Geneva, N. Y., and the evidence presented in bulletin No. 290, giving details of the fifth year's test and summaries of preceding ones, seems conclusive in favor of the practice. The gain each year has been profitable; and there is already much more than enough excess of gain over cost to pay for spraying five years more.

Similar gains, though not quite so great, were obtained by farmers under tests carefully checked by the station and by much larger numbers of farmers who sprayed independently. If you grow potatoes, it will pay you to get this bulletin from the station—it costs you nothing, not even postage—and study it carefully before your crop management is planned for next year.

I have looked THE CANADIAN HORTICULTURIST over carefully, and find that it is the best paper of its kind now published.—C. M. Conner, Brooks, Oregon.

I am a subscriber for two other papers on horticulture and fruit growing. I find THE CANADIAN HORTICULTURIST by far the best, not only for the amateur, but for the professional as well.—Wm. Beattie Okanagan Lake, B.C.

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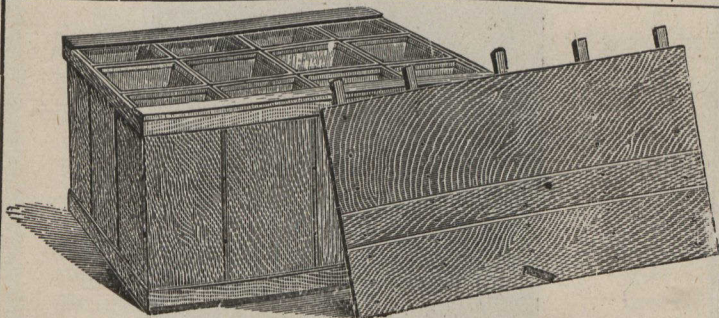
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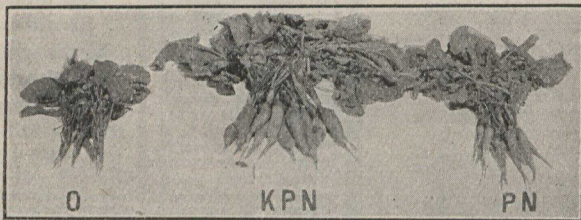
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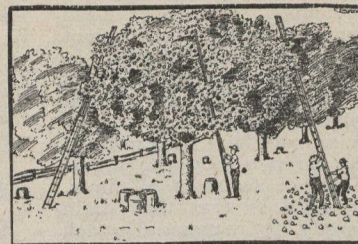
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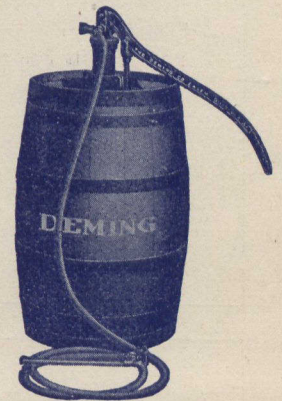
¶ The Deming "Century" Barrel Sprayer became popular years ago; to-day it is more in favor than ever, because more people know about it, and to know its merits is to be its friend.

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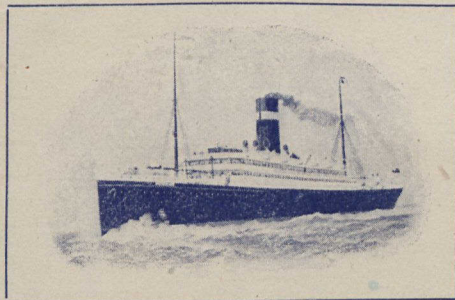
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Friday, Dec. 6	Saturday, Dec. 7	Victorian	" 14	Numidian	
Saturday, Dec. 14		Ionian	" 21	Ontarian	
Friday, Dec. 20	Saturday, Dec. 21	Corsican	" 24	Grampian	
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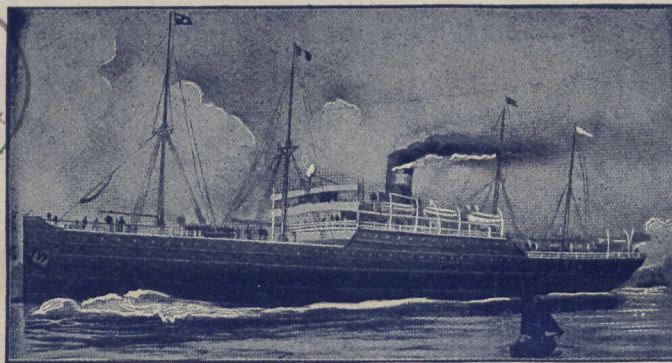
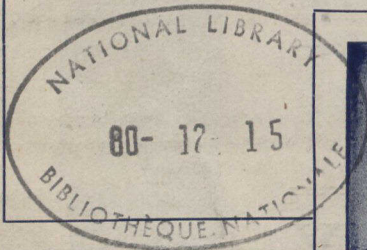
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