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The Canadian Horticulturist

FEBRUARY, 1907

Volume 30, No. 2

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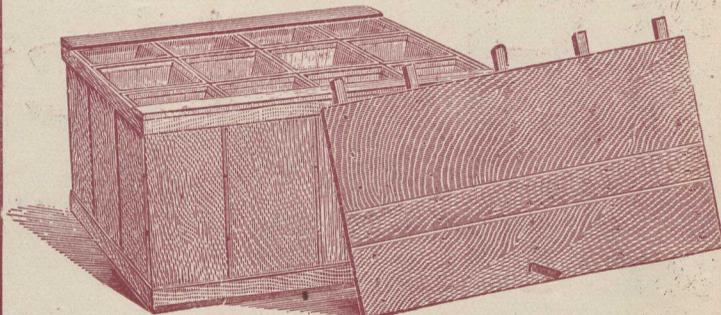
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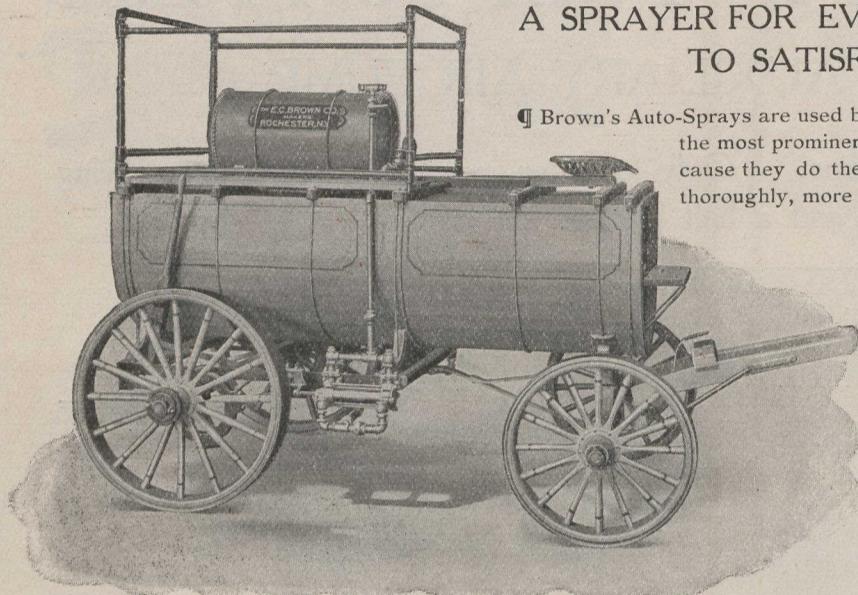
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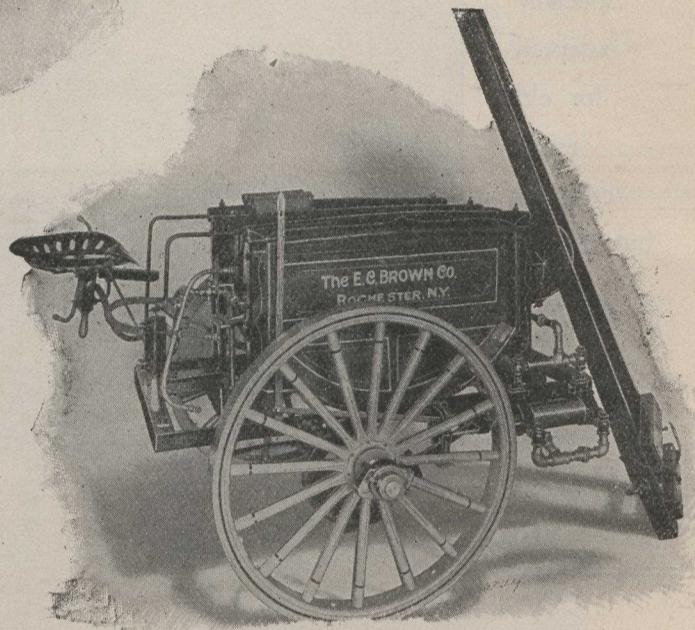
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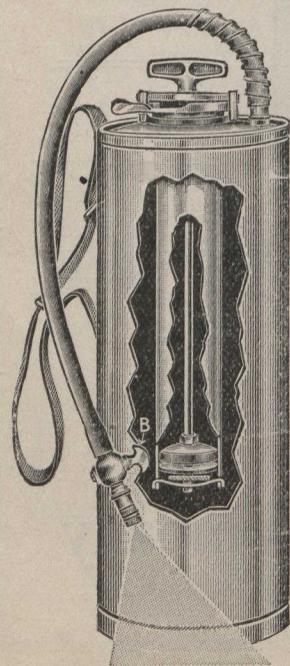


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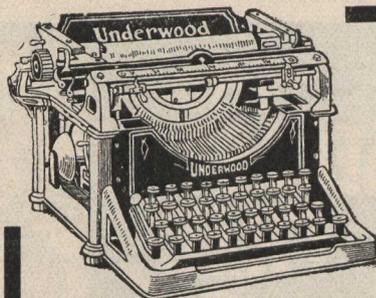
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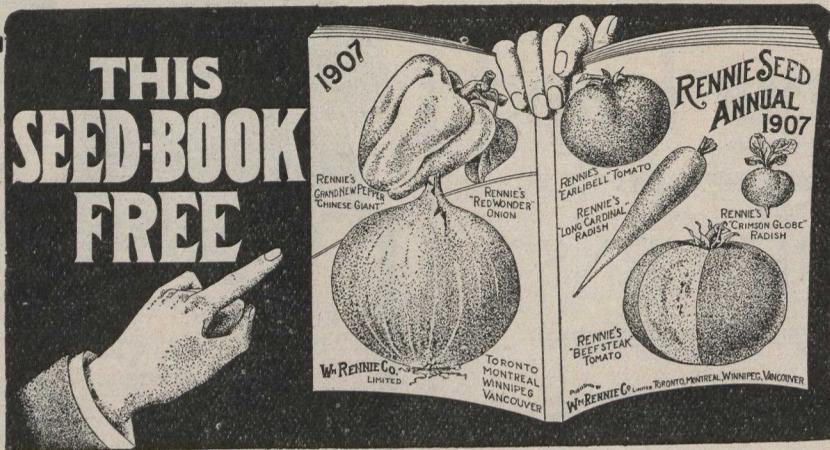
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78 BRANCHES THROUGHOUT CANADA

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The Canadian Horticulturist

Vol. XXX

FEBRUARY, 1907

No. 2

Varieties of Fruits Worth Growing in Ontario Orchards

ONCE more the time has come when the selection of varieties for the next season's planting is among the questions that confront the fruit grower. To choose varieties that will be most successful and a source of profit, the fruit grower should profit by the experiences of his neighbors, he should observe the behavior of varieties growing under conditions similar to his own, and be governed accordingly.

Personal preference for the quality of a particular variety should not be the only consideration when selecting for a commercial plantation. Local conditions of soil and climate must be studied. The demands of the market to be supplied is important. Inter-pollination also must be kept in mind; it is never best to plant an orchard, a vineyard or a small fruit plantation of one variety alone.

Among the men most capable of advising the planter on the choice of varieties are those in charge of the fruit experiment stations of Ontario. A number of letters bearing on the subject from these men and others have been received by THE CANADIAN HORTICULTURIST for the benefit of its readers.

NORTHERN DISTRICTS

The following list is submitted by Mr. J. G. Mitchell, of the Georgian Bay station: "After an extensive trial of 190 varieties of all kinds of plums, I find that there is nothing new that, for profit and general use, can displace many of the well-tried old kinds. The following cover the season: Red June, Washington, Bradshaw, Lombard, Quackenboss or Glass as it is often called, Arch Duke, Yellow Egg, Coe's Golden Drop, Reine Claude and Prune de Agen. German Prune also is a good plum, but rather a poor bearer. Japan plums I condemn on account of their poor quality. In cherries, all leading varieties succeed admirably; still, one year with another, Montmorency and Early Richmond will make most money.

"In apples for profit, cut the list very short: For fall, Gravenstein, a few Wealthy, Blenheim and Ribston; for winter, Spy, King, Baldwin and Mann. Plant all varieties from 3 to 10 feet farther apart than the usual distance for said varieties.

"Cultivate thoroughly; prune systematically; give abundant fertility. If these simple instructions are carried out, the result cannot help but be satisfactory. Acre for acre, for labor and money invested, the orchard will be three or four times more profitable than any other part of the farm."

You Should Have It

THE CANADIAN HORTICULTURIST is a publication which is worthy even a larger circulation than the very wide circle it now reaches. For some time it has been undergoing improvements, till now it can take rank with any monthly illustrated publication as to make-up and quality of paper and press work, while it stands alone in the special field to which it is devoted. Every lover of fruit or plant life will find it not only interesting, but helpful, for it is filled each month with timely articles by the best authorities on each subject, and it very properly is recognized as the official spokesman and intelligence department for the horticultural interests of this and adjoining provinces. We can heartily commend THE HORTICULTURIST to everyone at all interested in that subject.—*Goderich Star*.

THE ESSEX PENINSULA

For the Essex peninsula, Mr. J. L. Hilborn, of Leamington, writes as follows: "The peach is the principal fruit grown here. It would be a very successful and satisfactory crop to grow were it not for the fact that our soil is very dry and that we get very little snow, so that peach trees are liable to severe freezing of the root, causing a serious loss when we get a severe winter. The varieties that have done best are as follows: Dewey, Brigden, Engol Mammoth, New Prolific, Kalamazoo, Crosby, Banner, Golden Drop, Lemon Tree, Elberta, Smock.

"Grapes are grown to a small extent,

but should be more extensively planted. There is a splendid opportunity for grape growing, if properly undertaken, in this district. All the leading varieties succeed; but, as we are a week to 10 days earlier than other parts of the province, would recommend planting early varieties such as Moore's Early and Campbell's Early.

"Plums are but little grown. Some of the Japan varieties, however, do well; of those tested, I prefer Burbank and Satsuma.

"What is most needed in this country, so far as fruit growing is concerned, is live experiments to determine how best to successfully winter the roots of trees and vines in seasons of severe freezing and no snow."

THE NIAGARA DISTRICT

For the Niagara District Mr. Linus Woolverton, of Maplehurst, Grimsby, writes: "The peach is the most profitable fruit to grow in the Niagara district. Many persons who have large bearing apple trees of the very finest variety are taking them out to use the ground for peaches. In some cases as much as \$200 has been taken for the peaches grown on a single acre; so it is not surprising that such land is held at \$1,000 an acre. A large number of varieties are being grown for profit, but the following list has been satisfactory with the writer: Sneed, Alexander, Greensboro, St. John, Early Crawford, New Prolific, Champion, Elberta, Willet and Smock.

"The next fruit in importance is the pear. Of late, however, since bananas have flooded our summer market, the price of pears in Ontario has lowered at least one-half. Still by shipping to the Northwest and to Great Britain, good profit may be made in pear growing. The following list is excellent: Chawbon, Wilder, Gifford, Clapp, Bartlett, Hardy, Box, Howell, Louise, Duchess, Pitmaster, Clairgeau, Anjou and Easter Beurre.

"In cherries, some varieties are being grown on quite a large scale, especially Montmorency and English Morello. The former is in large demand for putting up at the factories, as well as in private families; the latter is later, when cherries are well out of the market. The following is a good list of cherries

for profit: Wood, Knight, Napoleon, Tartarian, Dyehouse, Montmorency, late Duke, Elkhorn, Windsor and English Morello.

"In plums there has been much discouragement, because for two years the crop has been a comparative failure. Last season the Japanese plums, usually noted for their productiveness, failed entirely. But the price of this fruit has been advancing; and the prospect is that the plum crop in the future will be as profitable as formerly, unless good prices should lead to overplanting again. For the Niagara district the following selection is recommended: Red June, Burbank, Bradshaw, Chabot, Gueii, Yellow Egg, Lombard, Quackenboss, Shropshire, Satsuma, Reine Claude.

"Currants, too, of late, are in demand. A few years ago I ploughed up a plantation of two acres of fine Cherry currants; now I am ordering a fresh lot for planting in the early spring. On light soils, the black currant is unprofitable; but on clay loam it is more productive. Even the red currant, the most profitable kind, goes too much to wood growth on rich, sandy loam, and on light sand is very subject to leaf blight. Of the red currant we plant Victoria, Wilder, Cherry and Fay.

"Raspberries also are in demand these days. One new variety is proving itself of great value; viz., the Herbert, which was originated at Ottawa. It is hardy as well as productive, and the berry is large. I would plant Herbert, Marlboro and Cuthbert."

THE BURLINGTON DISTRICT

The following are recommended by Mr. A. W. Peart as desirable varieties for planting in the Burlington district: "Apples, summer, Astrachan and Duch-

ess; fall, Ribston, Blenheim, Pippins and Wealthy; winter, Baldwin, Greening, King and Northern Spy. Pears, summer, Wilder, Clapp and Bartlett; fall, Boussock, Louise, Duchess (dwarf), Anjou and Kieffer; winter, Josephine, Winter Nelis and Easter Beurre. Plums, European, Bradshaw, Niagara, Imperial Gage, Lombard, Yellow Egg, Glass and Reine Claude; Japan, Red June, Abundance, Burbank, Chabot and Satsuma. Peaches, Alexander, Greensboro, St. John, Early Crawford, Champion and Elberta. Cherries, Early Richmond, Montmorency, English Morello, May Duke and Windsor. Grapes, black, Moore's Early, Worden and Concord; red, Delaware, Lindley and Vergennes; white, Niagara and Moore's Diamond. Blackberries, Snyder, Ancient Briton, Western Triumph, Agawam and Taylor. Raspberries, red, Marlboro and Cuthbert; black, Hilborn, Older and Smith's Giant; purple, Shaffer and Columbian; white, Golden Queen. Currants, red, Cherry, Fay, Victoria, Wilder, North Star, and Prince Albert; black, Naples, Lee, Collins' Prolific and Saunders; white, Grape. Gooseberries, Pearl, Downing and Red Jacket.

"The above fruits are grown on gravelly loam and clay loam soils, well drained. All planting is done in the spring. The bruised, torn ends of the roots of young trees are cut away, and the top cut back to balance the root. They are planted deeply enough for the top of the collar of the roots to be three or four inches below the level surface of the ground, a consideration which is too often neglected. Dwarf pear trees are planted deeper by two or three inches in order that the base of the pear stock may throw out roots and thus reinforce the

quince bottom which is rather light. Young orchards are kept cultivated for several years, growing some sort of a crop in them, but always leaving room for horse cultivators on each side of the trees. In planting young bushes, a great deal of labor is saved by ploughing a deep furrow in the proposed row. To accelerate knitting with the soil, the bruised ends of these should also be cut away. At planting time the soil should be in a fine granular, moist, but not wet, condition. In filling in earth around trees and bushes, leave a depression of 2 or 3 inches. The cultivator will soon level it and young weeds will be more easily checked."

The following letter was received from Mr. W. G. Horne, of Clarkson: "Clarkson has become noted for growing fine strawberries. The principal varieties are the Williams, Sample, Bederwood, Glen Mary, Clyde and Warfield. The Sample and Warfield varieties being pistillate, would have to be planted with some of the other varieties. A great many raspberries are also grown. Of the red varieties there has been none on the market as yet to beat the Cuthbert. Clarkson growers almost exclusively grow this variety. In blackberries we find Snider and Western Triumph the best."

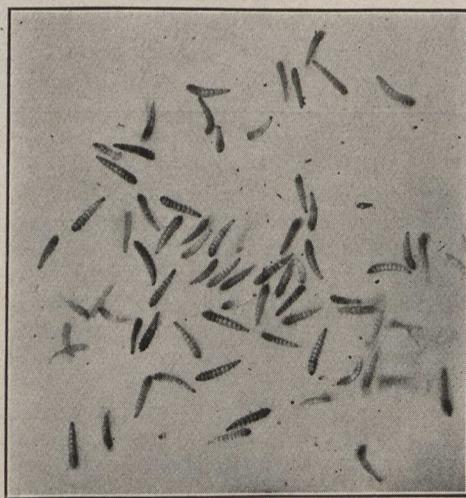
STRAWBERRY VARIETIES

Rev. E. B. Stevenson, Ponsonby: "The best varieties of strawberries after careful trials seem to be the following: New, Cardinal, Mead, Three W.'s, Minute Man, and Wonder; older varieties, Palson's Beauty, Splendid, Ruby, Fountain, Sample, Senator Dunlop, Haverland, and Glen Mary. The past year was one of the best in our experience for prices and yield."

A New Pest of the Apple*

AN insect which up to the present time has not been reported as a serious pest, occurred in such destructive numbers during the past season that it must now be reckoned with by the orchardist. The insect is known as the Apple Leaf-Miner or the Trumpet-Miner of the apple (*Tischeria malifoliella* Clemens). It was first observed in Pennsylvania and described by Dr. Clemens in 1860. Later its occurrence has been recorded in Kentucky, New York, Illinois, Texas, Minnesota, Michigan, New Jersey, Vermont and Ontario.

The injury is caused by the tiny caterpillars mining in the leaves, making large, brownish patches (Fig. 3). If several of these patches are produced on



(1) The Apple Leaf-Miner

a leaf, it rolls up and ceases to perform its functions. The mines fre-

quently become so numerous that they run together and form one large blotch. As many as 68 full-grown caterpillars (Fig. 1) have been taken from a single leaf, indicating that originally there were as many distinct mines. The upper branches of the tree are usually more seriously infested and lose their foliage first (Fig. 2). This loss of foliage results in premature, undersized fruit. By checking its vegetative activity, the vitality of the tree will also be more or less reduced.

LIFE HISTORY

Early in June the egg, which is so small that it cannot be seen with the naked eye, is deposited singly on the upper surface of the leaf. A drop of wax seals it to the leaf. In about six days it hatches and the young caterpillar, without exposing itself to the outside world, bores into the leaf. At

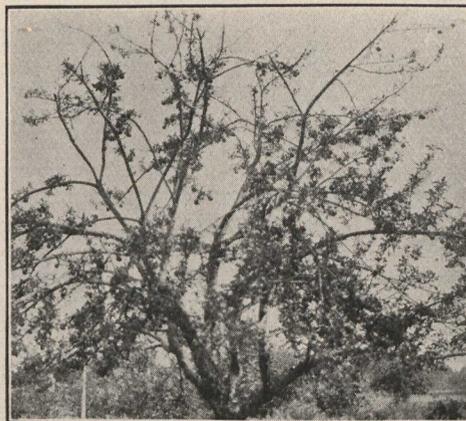
*This warning was sent out recently to Connecticut fruit growers by the Storrs Agricultural Experiment Station. It should be heeded by growers in Canada.

first it makes a narrow channel, but with the increase in the size of the insect and its appetite, the channel becomes wider and a trumpet-shaped mine is the result.

The full-grown caterpillar is not more than a quarter-inch in length. In color it is green with a brown head. It changes to a pupa about the middle of July. After about 10 days in this condition the adult, which is an inconspicuous brown moth, appears.

These moths soon commence depositing the eggs that produce the second brood. The second brood caterpillars are much more destructive than the first. They reach maturity about September 1, when they cease feeding and prepare for winter. After lining the mine with silk they settle down until spring when they change to pupæ. They remain in this condition only a few days when they become moths.

As the caterpillars feed beneath the leaf surface, application of insecticides



(2) A Badly-infested Tree

is useless. The most effective remedy is to gather up and destroy the leaves

in the fall. Where orchards are regularly tilled the early spring plowing will be equally effective.

A fully illustrated bulletin by Mr. C. D. Jarvis, giving the life history of the insect will be issued soon and can be secured by addressing The Storrs Agricultural Experiment Station, Storrs, Connecticut.

Central packing houses should be established in every locality where apples are grown, and all the fruit should be sent there to be graded and packed. In connection with the packing house, some means should be used to manufacture the culls into either evaporated fruit or jam. The apples should be delivered just as taken from the trees, graded into No. 1, No. 2 and culls, and be paid for by the barrel or box, according to grade.—A. E. Sherrington, Walkerton, Ont.

The Apple Industry in Ontario and its Future*

A. McNeill, Chief, Fruit Division, Ottawa

IN addition to the west there is another growing market available for the Ontario grower, namely, the market of Great Britain. It has formerly been an axiom of apple growers that Canadian fruit would be acceptable in Great Britain only when there was a failure of the English and European crop. This conception of the British market is not a true one. For a number of years a large quantity of early fruit has gone from Canada to Great Britain, and prices have always been quite satisfactory, and there appears to be no good reason why this market should not continue and, in all probability, increase even in the face of the competition with the apples of the home market. It is quite true that the Canadian apples will not compete with the best early fruit of Great Britain, but there are certain features of the business that are distinctly in favor of the Canadian growers. First, we have an admirable system of ocean transportation and a fair degree of efficiency in the railway transportation. If the early fruit is cooled properly before being packed and then shipped in a refrigerator car, there is almost an absolute certainty of its reaching Great Britain in the best of order. The question, therefore, of losses in transshipment is reduced to a minimum. During the last two or three seasons the cargo inspectors at Montreal and at ports in Great Britain have very carefully reported upon the condition of the apples at the time of shipment

and upon arrival in Great Britain, and in no case has there been a serious loss where it would be shown that the fruit was properly started from the orchards.

BENEFIT OF BIG SHIPMENTS

In the British markets the Ontario grower has upon his side the large



(3) Infested with Leaf-Miners

An apple leaf with both a trumpet mine and a serpentine mine. The latter is caused by a different species and is not so abundant.

brokers and fruit merchants. The Canadian apples reach the brokers and fruit merchants in uniform packages, uniformly graded, and in large quantities compared with English fruit of one or

two varieties. This element of uniformity in grading packages and variety will, itself, almost offset all the disadvantages that we have in the matter of transportation. It is easier for the fruit merchants to buy and distribute Canadian apples than it is to buy and distribute the home-grown fruit. The English orchards have the disadvantage of being planted with a great many different varieties, and no two portions of England put up their fruit in the same kind of packages. It is very difficult for the dealer in Great Britain to get the same varieties or the same packages of home-grown fruit twice. This makes all transactions in English fruit a retail affair, and naturally the large sales all go to the Canadian or American product. As compared with the American apples, I quote from the latest number of an English market paper, *The English Grocer*, to show that Canadian apples have a preference of two shillings per barrel, which effectually protects them from any serious competition from states to the south of us.

Taking these two markets then, the markets of the western provinces and the British markets, I see no reason why the present stock of apples should not be sold at good prices if proper means are taken to place them upon the markets.

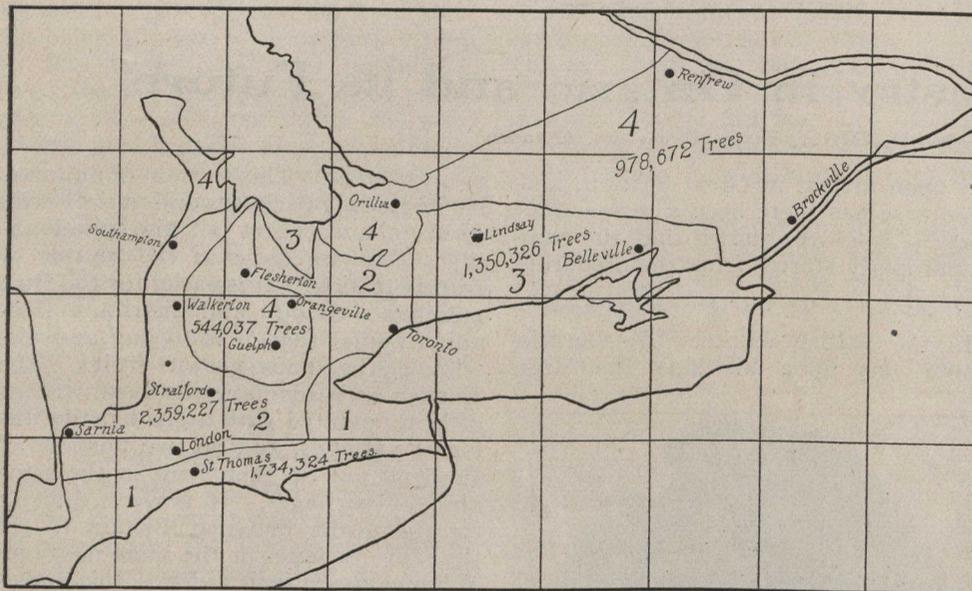
One word more with reference to this southern division, No. 1. If, then, the market for early fruit is to be a growing one, I should strongly recommend that the growers confine themselves very largely to the early varieties. The Red Astrachan can be shipped from the county of Essex the third week in July, the Duchess the last of July and the first of August; the Wealthy, of course,

*The continuation of an address delivered before the recent convention of the Ontario Fruit Growers' Association and published in the last issue of *The Canadian Horticulturist*.

somewhat later. Such varieties as these, therefore, should be selected, and this district should apply itself to supplying not only the western provinces, but our own city population in Toronto, Ottawa, Montreal and Quebec, with all the apples they need after the first of August, when we would entirely exclude the American product that now finds its way to our markets. It is unfortunate that the orchards of this district are devoted so largely to Baldwins, Spys and Russets and other winter varieties, inasmuch as these apples come in in the glut months of October and November. If the orchards were composed of the early varieties that I have mentioned, the prices would be much higher than could be realized for the very best winter fruit in any part of Canada.

TOO MANY VARIETIES

The conditions in district No. 2 are



Map of Ontario, showing Four Divisions for Apple Culture

somewhat peculiar. Of course, there is no sharp line of demarcation between these districts, and the southern portions of Brant, Oxford and Middlesex may in some years be properly classed as part of district No. 1, but the greater portion of district 2, including the counties of Lambton, Middlesex, Huron and Bruce, and part of Grey, has all the advantages for growing the very best winter varieties of apples. The planting, however, was done in the earlier days. In the selection of varieties there was the greatest latitude. No orchard was considered complete without a dozen or more varieties, which was all well enough for home market or for home use, but rendered the conditions very unfavorable for the commercial market. Every farm, too, had an orchard, very few of a large size, and very few making a specialty of apples; in fact, very few counted it more than a pure side line in their general farming operations. The result is that, though the small orchard

predominates, yet the aggregate is a very large number of trees, probably not less than two and a quarter million.

The difficulty comes in in making sales. The large apple operator cannot without extraordinary expense harvest these apples profitably. He cannot send his gangs of men around more than once or twice at most, and yet these orchards would furnish almost continuous picking from the first of September until the close of the season. As a consequence, many of the apples are picked before they are ripe or sometimes after they have reached maturity, and many of them are not picked at all, because they are not in the proper state of maturity at the time the gang visits the orchard. Though the aggregate, of course, is so large, the number of desirable varieties is probably not more than half the aggregate number.

best conditions for apple growing. Flesherton is fifteen hundred feet above the sea level, nearly a thousand feet higher than Lake Huron, and twelve hundred feet higher than Lake Ontario. Nevertheless, there are many sheltered spots where the apples, even of tender varieties, succeed fairly well, so that it is not surprising that in this district there are probably more than half a million trees. One could not recommend though, the planting of early varieties for commercial purposes. These varieties would be three weeks or a month later than those grown in the southern tier of counties and would come in during the glut months, having none of the advantages of the apples of better varieties and better quality grown in the southern tier of counties. I see no hope, therefore, of a profitable apple business being conducted here, except along the general lines that would be recommended for the Ottawa and St. Lawrence Valleys, district 4.

(Concluded in next issue)

Varieties for New Brunswick

J. C. Gilman, Fredericton, N.B.

Many varieties of fruits and seeds are of little use for general planting in our province. While there are favored localities where a fruit may appear satisfactory, it would not be reliable in others. Some kinds, however, give good returns to the careful planter. Among the apples most profitable are: Duchess, Wealthy, Alexander, Fameuse and McIntosh. These varieties give the best average returns with the least loss in trees. Golden Russet has proved very hardy, and is giving good average crops, but not large ones. Ben Davis did well till the freezing winter of '03 and '04, when the trees did. Scott's Winter is hardy, but small. Bethel, Dudley Winter, Shackelford, Baxter, Princess Louise, Bishop Pippin or Yellow Bellfleur, and many others are grown in a small way. In some districts they are giving good returns.

In strawberries, we can grow most kinds with success. The Cuthbert is the best red raspberry. Snyder, Agawam and Taylor among the blacks, give good crops occasionally, but this class is uncertain. The leading varieties of gooseberries and currants also do well.

Grafting should be performed with a keen, sharp-bladed knife, so that the vessels and pores of the wood may be cut smoothly and evenly, and the stock and scion brought into immediate and even contact.

When setting out new orchards number the rows and record in a book the name of the varieties in each, and also the name of the nurseryman from whom the trees were purchased.

NEED OF COOPERATION

The recommendation which I would make for this district is cooperation in marketing and selling. There is no one who can pick these apples so cheaply or so well as the man who grows them, but he cannot pack them nor market them. He has not enough of any one kind to pay him to do this properly. It can be done, however, by uniting into cooperative associations, which would furnish the packers and the facilities for selling. It is notable that two of the most successful societies in cooperative associations are in this district, namely, Walkerton and Forest, and I cannot help thinking that a very slight encouragement would organize several more associations.

THE CENTRAL COUNTIES

The central counties of western Ontario, marked No. 4, call for some special comment. The altitude here and, consequently, the climate, is adverse to the

Fruit Growing in Manitoba

D. W. Buchanan, Director, Buchanan Nursery Co., St. Charles, Manitoba

NOTWITHSTANDING the many failures that resulted from the early attempts to grow fruit in Manitoba, and the general belief which at one time prevailed that fruit growing would never be successful here, it can now be positively stated that considerable progress has been made in the direction of successful fruit culture in the province. Manitoba has been passing through very much the same experience as the border state of Minnesota in the matter of growing fruit. Indeed, the early experiences in Minnesota were perhaps quite as unfavorable as here. The early settlers in that state, who came mainly from the eastern states, brought with them the same varieties of fruits that they had been used to cultivating in their eastern home. Failure resulted from the fact that these fruits were not adapted to the northwestern state in which they had located. Manitoba's early settlers came also from the east, and they made the same mistake of trying to grow the same varieties, with the same treatment and cultivation as they had followed in the east. Minnesota now produces large quantities of fruits, including apples and plums, as well as small fruits, but in tree fruits at least, the varieties now largely grown have been originated in that state. They are home born and bred varieties. The same course will have to be worked out in Manitoba before the best results are attained.

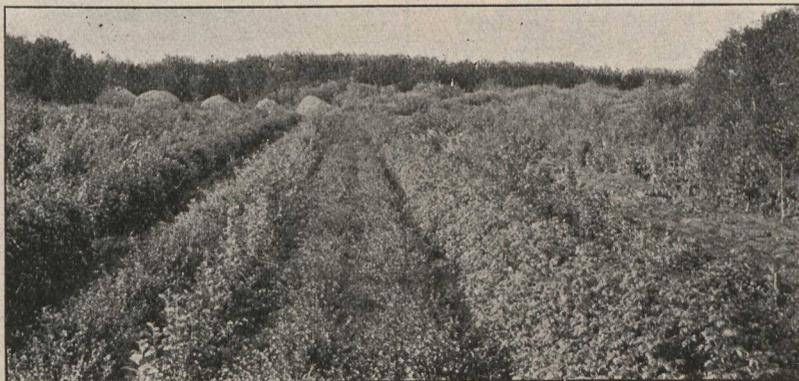
In small fruits, a large measure of success has been already attained in Manitoba. In fact, we may safely say that we have passed the experimental stage in growing many varieties and species of small fruits. It has now been clearly demonstrated that there is nothing to hinder any person from growing all the fruit in currants, gooseberries, raspberries, strawberries, and so on, that will be required for home use. A few large commercial fruit farms, also, have been successfully carried on, but the great scarcity of help and high wages makes it a difficult matter to conduct a small fruit farm on a commercial scale. Help such as is required for this class of work is practically unobtainable. Only adult male help can be had and that in limited supply. Indeed this scarcity of help curtails the growing of fruit even for home use on the farm, as the overworked farmer will not undertake anything that is likely to add to his burden, if it can be avoided.

In currants, gooseberries, raspberries and strawberries, success may be readily attained. All that is necessary is to find out what are the varieties best adapted to the country, and the mode of

cultivation best suited to the requirements. It will not do now, any more than it would have worked in the early years, to select at random the varieties grown in the east. Neither will it do to follow the same mode of cultivation as is practised in the east. The necessary knowledge, as to varieties and cultivation, however, is now within the reach of any one who wishes to learn. This knowledge has been acquired and worked out by the untiring efforts of our foremost horticulturists, and has been disseminated by our horticultural societies and in other ways, so that it is not now necessary to start blindly when beginning the work. The knowledge which has been gained as to varieties and best mode of cultivation, constitutes perhaps the bulk of the progress that has been made in fruit growing in Manitoba.

to this region, also is a useful fruit, though not as valuable as the true cranberry. It does well under cultivation, and we have occasionally seen these bushes growing in the settler's garden. The bush cherry is also very productive under cultivation, and is promising.

In tree fruits, the work is still in a more or less experimental state. Experimental work has been confined mostly to apples and plums. A few cherries have been produced and one pear tree reached the fruiting stage, but these have only been as novelties and not with really any hope of making them a profitable feature. The only plums that are of any value are a few of the very earliest ripening Americanas. Some success has been had with plums of this class. The future of plum growing lies in the direction of improv-



Young Stock on Grounds of Buchanan Nursery Co.

When the country becomes more thickly settled, the supply of help will increase, and the farmers will be in a position to give more attention to matters of this nature. Then fruit growing will be more largely indulged in.

There are many varieties of wild fruits, native to various sections of Manitoba, that produce large crops. These include the plum, raspberry, strawberry, red and black currants, Viburnum or high bush cranberry, Juneberry, cranberries (different forms of the low or vine species), cherries, and so forth. Several of these are undoubtedly useful for cultivation, and being native to the country are, of course, perfectly hardy. Some of the wild plums are of good quality, and no doubt in time this native fruit will be greatly improved. The presence of cranberry marshes of wild fruit would also indicate that the growing of this fruit may become an important industry in time. Some of these wild cranberries are of extremely fine quality. So far, we know of no attempt to cultivate the cranberry. The Viburnum, or so-called "bush cranberry," which is indigenous

ing our native stock, which combines hardiness with the early ripening habit. Most of the named varieties of the Americana class of plum do not ripen early enough to make them safe here, even if they possessed the necessary hardiness.

Apples have been experimented with largely and, considering the class of stock with which it has been necessary to carry on the work, we have no reason to feel disappointed with the measure of success attained. In fact, when an occasional tree proved fairly hardy from among the large number of trees brought in from the east or the United States, it made the outlook hopeful for a time when home-grown trees, propagated from these few hardy specimens, could be obtained. Plants and trees, like persons or animals, certainly show special characteristics. It is true that an occasional tree will show a hardiness and vigor of constitution quite in advance of others of the same variety. The hope of the future, therefore, lies in propagating from these exceptionally hardy specimens. We will undoubtedly produce new varieties of apples and hybrids, just as they have in Minnesota,

that will be hardier than anything we now have, and be well worthy of cultivation. A few of these new seedlings have already been produced. In the meantime, we have a number of trees in bearing scattered throughout the province, of the varieties which have proved the most successful in Minnesota. There are orchards varying from a dozen to

over 100 trees which have fruited in a single year. Propagation from the hardiest specimens may now be carried on both by grafting and by growing seedlings. We now have, therefore, a solid basis upon which to work. Progress will be more rapid than in the early days, when all stock was brought in.

In 1901, an exhibition of tree fruits

was held in Winnipeg, at which there were 47 exhibits of standard apples, eight of hybrids and 18 crabs, besides a number of seedlings, grown in the province. The named varieties, also, were grown in Manitoba. Since that date, considerable progress has been made and an exhibition now would certainly show a vast increase in the entries.

Commercial Varieties of Fruits for Nova Scotia

Prof. F. C. Sears, Truro, Nova Scotia

THE question of varieties is so much a personal matter that it is difficult to map out a list of varieties which shall represent everyone's preferences. Still, the bulk of Nova Scotia plantings are confined within comparatively narrow limits as to varieties and if there can be said to be a well-defined "tendency" of late years, I believe it is in the direction of sticking to the old sorts and being more chary of the new and untried.

The list of apples which most often appears as the "best 10 varieties for commercial planting," is probably the following: Gravenstein, Ribston, Blenheim, King, Baldwin, Spy, Golden Russet, Stark, Fallawater, and Nonpareil. But, in the newly set orchards Gravenstein does not often appear, partly because most growers feel they already have enough of this variety and partly because a good many trees of this sort have gone out with collar rot, or kindred diseases. The writer believes this latter reason need have but little force if orchards are carefully and consistently managed; if they are carried along systematically from year to year as regards culture, not overstimulated, and if a good corn crop is sown each year to check the trees up for winter.

There is no question that of the varieties mentioned above the Blenheim is just now by far the most popular. Its sturdy growth and freedom from black spot in both leaf and fruit, and the fact that there is so little waste in packing the fruit have combined to bring it to the front.

Comparatively few early apples, ripening before the Gravenstein, are grown; not enough in the writer's opinion. The most popular would be Yellow Transparent, Duchess of Oldenburg, Red Astrachan and Williams Favorite. Other autumn sorts that are quite largely grown are Alexander, Wolf River, and Wealthy. Wagener and Ontario are *par excellence* the popular sorts as fillers, though Ben Davis is also set for this purpose, while McIntosh, Hubbardston and Rhode Island Greening all have their friends and *ought* to have more.

Coming to pears, practically the only varieties grown commercially are Clapp's

Favorite and Bartlett. The liability of the former, as grown here, to rot at the core makes the profit from it somewhat problematical, though it succeeds more generally than even the Bartlett.



Burbank Plum Tree Headed-in
Hillcrest Orchards, Kentville, N.S.

Nova Scotia can grow excellent Louise Bonne, Beurre d'Anjou, Beurre Hardy, Sheldon, Boussock, Flemish, and Vermont Beautys. On the whole, commercial pear growing is but little practised, partly because pears do not, as a rule, succeed so well here as they do in Ontario and parts of the United States, and largely because apple culture is found so much more profitable.

The list of first-class market plums is a long one, but is confined largely to the *Prunus domestica* class. Burbank and Red June among the Japanese have proved very satisfactory with some growers. Shiro and Apple are promising, especially the former. But for the most part it is the European varieties that are grown. The best 10 commercial sorts would probably range about as follows: Washington, Bradshaw,

Grand Duke, Reine Claude, Yellow Egg, Monarch, Lombard, German Prune, Imperial Gage, and Shropshire Damson.

Spring planting is followed almost altogether, as our winter conditions are too variable to make fall planting very sure of success. From my experience in the government model orchards, I would never use manure in the hole at planting time. During the first year or two we sometimes put a small quantity of manure in the hole after the tree had been set and the roots covered, in cases where the soil did not seem to be rich enough. But we found that this comparatively large quantity of fertilizer (and that too in a form which would only become gradually available) tended to induce too much and too late a growth, which often resulted in winter-killing. Since then we have usually been careful to use the surface soil about the roots and occasionally to scatter some manure over the surface about the tree.

In all cases we have reserved a strip along the tree rows, beginning at eight feet in width and increasing year by year, for the exclusive use of the trees. I am strongly of the opinion that the growing of a crop right up to the trees (particularly a potato crop, which requires late culture and the digging of which amounts to another later cultivation) is to be condemned as too likely to induce late growth in the trees. This strip we cultivate every week or 10 days till July 1, and then sow a leguminous cover crop, usually crimson clover. With these two—good culture and a cover crop of this kind—we can usually get all the growth necessary with but little manure while the trees are young.

The operation of grafting should be so contrived that a permanent and considerable pressure be applied to keep the surface of the cut places closely together.

Varieties of fruits recommended for planting in Prince Edward Island and British Columbia are mentioned elsewhere in this issue in letters from the regular correspondents of THE CANADIAN HORTICULTURIST.

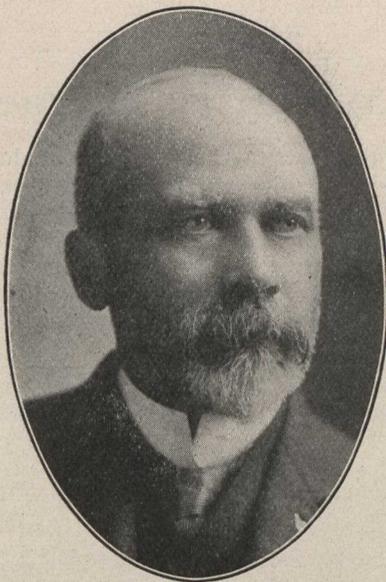
The Western Horticultural Society

George Batho, Secretary, Winnipeg

THE genesis of organized horticulture upon the Canadian prairies has not, so far as I am aware, been carefully recorded and preserved as a matter of accurate history. Enough is known, however, to warrant the statement that it is upwards of 25 years since the earliest beginnings were made. A society was then formed in Winnipeg that was to devote itself especially to the encouragement of tree planting. The life of this organization was brief; but it was followed in 1884 by a new society, which in turn was succeeded by two or three later associations that, one after the other, came into and went out of existence.

In 1895, the market gardeners of the Winnipeg district, to the number of 17, met and formed what has since grown into the Western Horticultural Society. At first, this organization was purely professional; but, later, provision was made for the admission of amateurs. Gradually the conclusion was reached that the society would be more widely useful if it held fewer meetings. Instead, it sought to gather the experience of horticulturists scattered farther afield, and then to present this to the public in printed form. In pursuance of this policy, the papers read before the society, since the year 1896, have

been published in the form of reports and given wide distribution.



Mr. W. G. Scott

President Western Horticultural Society.

On account of the scattered membership, the meetings for some years past have been held but once a year, an attempt being made to hold a good convention at a time when people living at

a distance would be able to reach Winnipeg on a reduced railway fare. The advantage of this will be evident to anyone who observes that the membership of the society is scattered over Manitoba, Saskatchewan and Alberta, that quite a number of the most enthusiastic members have to travel some hundreds of miles if they wish to attend these gatherings.

For a number of years an annual free distribution of plant premiums has been made to the members, an attempt being made to constantly introduce to the general public a few reliable and desirable plants that have not become as widely known as they should.

Much good has also been accomplished by the careful compilation and periodical revision of a list of trees, shrubs, and so forth, to be recommended for planting in the prairie provinces. Those who remember that the horticulture of the Canadian west is entirely different from that of the eastern provinces, or from that of British Columbia, will understand how valuable to the settler have been these lists, which have been published as widely as possible in the agricultural and general newspapers of the country, as well as sent out to members in pamphlet form.

The present membership of the soci-



A View of the Carnation Exhibition in Toronto

The American Carnation Society held its Annual Convention and Exhibition in Toronto on January 23 and 24. The Exhibition was the finest ever seen in this country. Thousands of blooms of high-grade carnations were shown. One firm alone sent 8000 blooms.

ety is nearly 200, but as it has only been within the past few years that the public of the west has been turning its attention to the subject of gardening and home adornment, and as the interest in horticulture is bound to develop as better and more comfortable homes are evolved, it is safe to predict a

much larger membership in the near future.

A brief reference to the horticultural possibilities of the prairies may interest. While we are debarred from growing many species that thrive in more humid and warmer climates, we are still permitted to enjoy some of the most beautiful

of the shade trees and shrubs that are grown in eastern Canada; many of the small fruits are reliable and yield abundantly; some success has been reached with hardy apples and other tree fruits; and we enjoy a succession of radiant bloom in the flower garden from May to October.

The Amateur's Greenhouse

DAFFODILS that were planted late in the fall outside, should now be brought inside. To have them in flower for March, the pans or pots should be placed under the benches. Leave them there until the third week in February, then place them on the bench, partially shading the place where they stand; this will give better stems. A little later, move them to the light and keep in a temperature of about 55 degrees. After that, less heat is required to bring them into bloom. Do not give any bottom heat, and keep the plants in a night temperature of not over 50 degrees. Give plenty of sunlight and ventilation.

HYDRANGEAS

It is time to start forcing hydrangeas. Hydrangeas that were grown in pots last summer ripen their wood sooner than field-grown ones. All unshapely plants should be straightened and put into acceptable form before growth starts, by staking and tying where needed. Do the work neatly. When starting to force hydrangeas, place them in a temperature of 45 or 50 degrees. Do not give too much water at first, but sprinkle frequently. After the new growth breaks, increase the temperature gradually until 65 degrees is reached, in which the plants should be kept until flowers commence to show color. Then place the plants in cooler quarters.

MISCELLANEOUS

If you wish good cuttings, your stock plants must have proper attention. Supply plenty of sun and light. A low temperature and wet soil will kill heliotropes and salvias, and the mealy bug will destroy the coleus stock plants if kept in moist atmosphere. Pruning is often necessary to regulate the growth. In propagating, either by seed or cuttings, the best habited specimens should be selected. To materially aid the development of young plants, keep everything clean on the propagating bench.

Azaleas should be given the greatest care. Free the plant of all refuse and dead matter. If they are starting to grow, keep them in a temperature of 60 degrees at night and spray daily. To insure a uniform growth, pinch back the more vigorous shoots.

Fall propagated geraniums should now be shifted into three-inch or three and a half-inch pots and potted firmly in rather heavy soil. Cuttings may be removed from these plants in from three to five weeks. If branches are desired, pinch out the tops of the young plants.

plants should be fixed either by tying or bending the canes around stakes.

Palms should be kept dry, especially when the thermometer is down.

EASTER LILIES

Lilies intended for Easter should be on the bench. As is usually the case,



Last Season's Border of Old-fashioned Perennials at Ontario Agricultural College

The early date of Easter this year necessitates a longer period under glass for our early flowered hardy shrubs, hybrid perpetual and Rambler roses, in order to have them ready for this most important floral festival. Bring in your hybrid perpetual roses at once and stand them in a cool house. There is no possibility of immediate root action; and, as the roots and top will start together, it is advisable to wait a week before pruning the tops, so that the work can be more carefully done and the proper number and kind of eyes left on the stem.

Rambler roses require very little pruning. When there are plenty of strong canes, all that is necessary is to cut away the wood that flowered last spring and the unripened tips of shoots. If a mulch of cow manure is intended, wait for two weeks until the roots are active. Before starting to leaf, the

they will vary in the headway made. By assorting them into two or three grades, better results will be had from now on. When they are first brought to the bench, they should be partially shaded until the leaves have turned from white to green. At first, they may be kept in a temperature of about 50 degrees. In the course of 10 days, more heat must be afforded, but give it gradually. Probably 60 degrees is best. Great heat will bring the most backward into shape, provided they are furnished with an abundance of active roots. Should you have planted diseased or immature bulbs, it is beyond your power to produce satisfactory results in forcing. Fumigation for aphids should not be neglected, but do not wait until the centres of the plants are overrun with them. As soon as the lilies are brought into the house, fumigate regularly once a week.

Timely Topics for Amateur Plant Lovers

THE month of February is the month of seed and plant catalogs. Most of them this year are well prepared and illustrated. They are interesting not only for the lists of varieties that they chronicle, but also for the many excellent cultural directions that they contain. The amateur should not make the mistake of discarding old reliable varieties for new ones of unknown merit. The professional gardener chooses standard varieties, usually those with

in spring is the pretty little dwarf-growing, white-flowering *Arabis alpina*. It has a bright and effective appearance when flowers are scarce in the garden. No garden should be without one or two plants of *Dielytra spectabilis*, bleeding heart. It is one of the most useful early-flowering summer plants that we have. The German and Siberian species of iris are a splendid class of plants for planting in the garden. They are of particular value in the lazy man's gar-

flowered, and easy to succeed with. *Gaillardia grandiflora* has a free, continuous habit of flowering that makes it valuable. A plant or two of *Rudbeckia* or golden glow always have a place on the lawn or in the flower border. They make either splendid backgrounds or centre plants.

ANNUALS

One of the prettiest of the countless annuals that are mentioned in the seed



A Border of Poppies, Sweet Peas and Perennials Worth Imitating

Grown on the beautiful grounds of R. B. Whyte, Ottawa

the shortest descriptions in the catalogs. The novice selects the novelties.

PLANTS FOR THE BORDER

A list of common border plants for the amateur garden may be of value to our readers. Permanent border plants, spoken of in the catalogs as hardy herbaceous perennials, are a class of plants particularly suited for busy people and their gardens. It is better to purchase plants than to rely on seed, as it takes a long time with many varieties to secure flowering results from seedling plants. When once well established, herbaceous perennials will continue to give splendid results for several years. They require little care and attention. About every second year, some classes may need dividing and transplanting.

One of the first border plants to flower

den. They succeed well in almost any kind of soil if not too moist, and can be had in a great variety of colors. They do not require much attention. Japanese varieties require proper care and attention for best results.

Herbaceous peonies should be included in the list that may be selected. They are almost indispensable for summer decorative purposes. A few plants of the perennial phlox will be useful both for garden decoration and to furnish a supply of cut flowers during the hot summer months.

The old-fashioned columbine cannot be left out. The fact that they are old-fashioned makes them attractive. *Coreopsis grandiflora* gives a bountiful supply of yellow, daisy-like flowers in early summer. *Campanula persicifolia*, Canterbury bells, is hardy, showy, blue-

catalogs is the well-known larkspur. It has a place in the mixed border. Among plants of the aster family a packet of mixed colors of Semple's branching aster will give the best results. A good sized border or bed of annuals may be made of a packet each of zinnias, marigold, candytuft, Phlox drummondii, sweet alyssum, scabiosa, salpiglossis, balsam, mignonette, antirrhinum, cosmos, ten weeks' stock, cornflower, sweet peas, nasturtium and a few castor oil beans.

THE WINDOW GARDEN

Plants in the window will feel the increased heat of the sun. This will necessitate a close watch being kept for insect pests. The best way to avoid trouble is to try and prevent the pests from making their appearance. Keep all growing plants, such as fuchsias,

geraniums, calla lilies and so on, well moistened at the roots. Syringe or sprinkle the foliage two or three times a week with lukewarm water. It is well to place some weak tobacco water once a week in the solution the plants are syringed with.

Watch for sudden frosts. The hot sun of some winter days often lures the amateur into a feeling of false security and induces him to neglect taking proper precautions against extreme cold weather at night. Should your plants become frozen, place them at once in a corner of the room where the temperature is a few degrees above freezing. Cover them carefully, and keep them in the dark for 24 hours, or until the frost is out of them. If not frozen too severely, they may be saved in this way. Avoid bringing plants that have been frozen into a high temperature. Keep them away from bright sunlight for a week or two after they have been frozen. They will also require less water for a time until root action and growth have commenced.

It soon will be time to start fuchsias into growth that have been resting during the winter. Bring the plants to the light and prune back the tips of last year's growth so as to make a shapely plant. Give the plants more water than they had whilst resting, and place them in a warm position. As soon as the small leaves begin to appear, shake the plants out fairly well from the soil they are in. Repot into the same sized pots, using soil composed of two parts of rich light loam, and one part each of sand and leaf soil, mixed well together. Give the plants plenty of drainage. Water well when potted and not again until the soil shows signs of dryness. Syringe the top of the plants daily. This will help them to break into growth strongly. It also keeps down the red spider, which is the worst insect pest that the fuchsia has.

Plants breathe through their leaves, and consequently require fresh air every day. Keep the leaves free from dust. Wipe them off with a wet sponge once a week. Open a window or door on warm, sunny days, but see that direct drafts do not strike the plants.

SEEDS FOR FEBRUARY SOWING

Seeds of verbenas, lobelias, cockscombs, double petunias and the Vernon begonia may be sown in pots or boxes in the window towards the end of the month, so as to secure large plants for window boxes or hanging baskets. Sowings for bedding-out may be made about the first of March. Seeds of schizanthus and mignonette may be sown for pot culture.

Would you not like to have sweet peas next spring earlier than you had last season? Why not sow a few seeds now in pots or boxes for planting out-

side when the time comes? Put six seeds in each six-inch pot. By the time you usually sow seeds outside, you will have strong plants three or four inches high. When safe to plant outside,

make a trench two or three inches deep, and in it place the plants ten inches apart. When planting, knock the ball of earth out of the pot carefully, and do not disturb the roots.

Pandanus Sanderi

Fred. J. Goode, Toronto

THE plant shown in the accompanying illustration is one of the most recent introductions into the already large family of Pandanus. It is a splendid addition to the list of plants both for table and other decorations where bright and showy foliage is essential. In habit it resembles *Pandanus Veitchii*, with the difference of color in variegation. In *Pandanus Sanderi* the markings are rich golden yellow. In some instances, the centre of the plant will be yellow, which makes it very



Pandanus Sanderi

effective. As a large specimen plant it is probably the best Pandanus grown. Unlike *P. Veitchii*, no starving is necessary to ensure a good variegation. It is a good grower. If kept in a warm and protected part of the greenhouse with ordinary treatment, good results can be expected.

With one or two plants to start, a stock of this very desirable plant can be worked up. The offshoots that grow from the stem of the plant furnish us with the best means of reproduction. These should be cut off close to the stem with a sharp knife. The offshoots should then be potted in two and a half or three-inch pots, using as a compost equal parts of peat loam and sand. After potting, plunge in sand in propagating frame with bottom heat about 70 degrees. In a few weeks they will have rooted sufficiently to be repotted in three or four-inch pots, after which, a shady bench will be the most suitable place to grow them till thoroughly established, when they can be given

as much sun as possible. A much heavier compost is better for repotting than the one recommended for striking the cuttings—two parts good loam, one part leafsoil and a little sharp sand.

These operations can be carried on at any time during the year. Overpotting should be avoided, as it has a tendency to coarseness of growth and absence of coloring. The large plant in the illustration is in a 10-inch pot.

Fruit Growing on City Lots

Amateur fruit growers in cities should look to quality rather than to quantity. The best tasting fruit is not always the most marketable. A strawberry of the finest eating qualities cannot be shipped long distances. At home, one can select the varieties that stand for quality, not those that are grown for their ability to keep or to ship.

Even small lots can be used for growing some kinds of fruit. Along the walls fruit trees can be trained and grown so that they will take up but little room. For small areas intensive methods of culture and care must be employed. One method of pruning trees for small lots is the fan system. By this method, the trees are kept low and the branches are trained to grow in opposite directions, all others at right angles to be cut off. This system admits of more trees on a given area and at the same time allows inter-cropping one way between the trees. It also tends to produce better quality and color in the fruit, as the sun has a better chance to do its work. Peaches also can be grown successfully in tubs of 15 inches in diameter. These tubs can be removed to the cellar in late fall where they will be safe during the winter. In cold districts, grapes and other tender fruits may be grown under glass-covered sheds. Glass sheds cost very little and can be used for a variety of tender fruits. City amateurs can afford these things for the pleasure there is in it, to say nothing of the benefit derived from having fresh fruits grown at home.

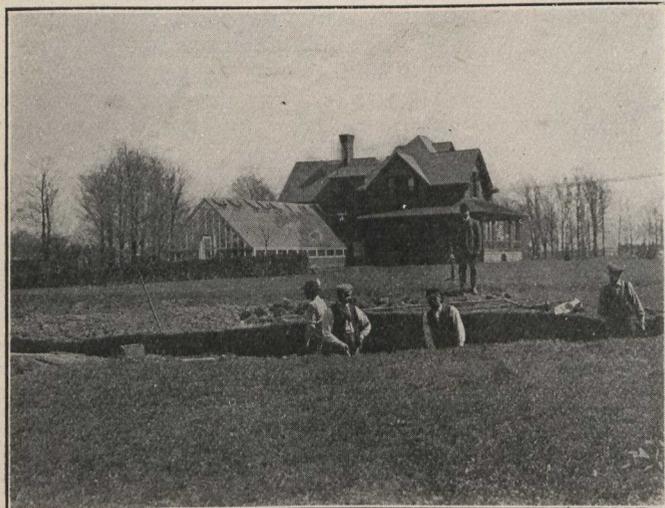
When building a conservatory, do not allow a carpenter to construct it without consulting an experienced florist.

Cut off all flowers from house plants as soon as they begin to fade.

How to Make a Water Garden

A. H. Ewing, Woodstock, Ontario

LAST winter it was decided that there should be a lily pond. Accordingly a suitable place was chosen on the south side of a clump of trees.



The Beginning of a Water Garden

Adjacent grounds gradually sloped down to it. The form of the pond was laid out in what might be described as a long oval, bent in the middle to the shape of the clump of trees and a little smaller at one end than the other. The total length was about 150 feet and the average breadth about 20 feet. Digging was commenced on April 23, and continued in the spare time that could be taken from the usual spring garden work, with some hours overtime also put in. As the ground was uneven, it was necessary to dig three feet in some places and not more than two feet in others; and the soil taken out was used to fill up the surrounding depressions. The digging was finished on May 14, the labor costing about \$60, paying \$1.50 a day, and 20c. an hour for overtime.

The city cement sidewalk gang were then called in, and two and a half inch drain tile was laid around the bottom, outside edge, with several lines across all grading to one outlet. About 10 to 12 inches of coarse gravel, unscreened, from the pit was then spread over the whole bottom. Concrete sides were built up and the floor laid, a flange for outlet and overflow being let in at the same time at the lowest point. A three inch pipe, the height of the water level wanted, is screwed into this flange so that it can be taken out when the pond is to be emptied. When finished, the depth of the pond was 18 ins. in the shallowest place and 21 ins. at the deepest. Tiles, gravel, concreting, etc., cost about \$500.

The land around the pond was then graded to the top of the concrete walls

so that the grass would grow right down to the water's edge. This has a much more natural appearance than if the walls were raised above the land level. Later, some rock work was built along part of the north side and clumps of *Eulalia* planted, considerably adding to the beauty of the pond.

Fourteen *Nymphæas*, water lily, four *Nelumbium lotus*, and six other aquatics were ordered from Dreer's, Philadelphia. These arrived in due time and were planted in boxes four feet square and ten inches high, early in June. They were very small plants and not much was expected from them; but contrary to expectations, all; but one grew rapidly, flowered well and were a great source of interest and admiration until the beginning of October.

The tender lilies, after having been touched by frost, were taken into the greenhouse with a good ball of mud adhering to them, gradually dried, the earth cleaned off by strong hosing and the tubers stored in moist sand. The *Nelumbium* were similarly treated.

places, however, where there is sufficient depth of water, the hardy lilies may be left in their places all winter. It is only necessary that their crowns be below the ice.

There is no reason why aquatics should not be more grown by all lovers of horticultural pursuits, even by those who have only small gardens. A small pond can easily be dug, and the bottom and sides made water-tight with puddled clay. Concrete is better, of course, but more expensive and not essential. No continuous supply of water is necessary; merely filling up the evaporation is all that is wanted. A good syringing of the plants every evening will do that and be beneficial at the same time.

Lilies will not grow well where a fountain is kept playing or where there is a continual influx of cold water. Some of the *Nymphæas* and *Nelumbium* can be grown even in half barrels, and will do well too, though, of course, they will not have the natural look about them that the pond-grown plants have. There are many varieties of *Nymphæa*, both hardy and tender, some of them—one might say all of them—are very beautiful; many shades of red, from the palest pink to dark crimson, several shades of blue, some yellows and many whites of various forms. *Nelumbium speciosum*, the best, has large, round leaves standing out of



Drainage is an Important Part of the Work

The hardy lilies in their boxes were later on pulled to the small end of the pond, and the water drawn off. Stout sticks were put across the pond from side to side, corn stalks were crossed on these again, and leaves were piled on to the depth of two or three ft. This, it is hoped, will keep out the frost. In

the water with very large, pink flowers and curiously formed seed pods. It is a luxuriant grower and, if the roots are not confined, will take possession of the whole pond. *Cyperus alternifolius*, Cypress grass or umbrella plant, grows well in the pond, partially submerged. *Papyrus antiquorum*, some-

what similar but prettier and taller, is also of easy growth. Some of the wild aquatics and swamp plants are very pretty and well worth growing at the edge

from April to September, the best time being early in May. Tender Nymphœas should not be planted until the weather has become warm and settled,

Vegetable Tuberculosis

Frances Wayland Glen, Brooklyn, New York

Fifty years ago, Dr. Edward Mott Moore, of Rochester, N.Y., a nephew of the great surgeon, Valentine Mott, said to me: "Frank, I wish I had 100 families who would retain me to keep them in health at \$50 a year, or a total of \$5,000. I would devote myself to them alone. I would endeavor to keep them in health. I would watch their diet, their teeth, their mastication, their liquid foods, their baths, the drainage of their houses, the exercise they enjoyed, their habits as to narcotics and stimulants and their mental and moral conditions. I would see them when in trouble or sorrow, as well as in sickness. I would tell them not to get angry or vexed. I would advise them to be charitable, kind to the poor. In short, to live in harmony with their Creator in heart, mind, soul and body."

His remarks are as applicable to the stock raiser, dairyman or shepherd as they are to the medical adviser of the human being. They are as good also for the fruit, flower and vegetable grower as for any other class. In one respect, fruit growers are in advance of the medical advisers. From my standpoint of observation, I consider that the black spots on our fruit is vegetable tuberculosis. The fruit grower endeavors to prevent the disease rather than cure it. Bordeaux mixture does for the fruit tree what Dr. Moore wanted to do for his patients. Bordeaux mixture



The Water Garden in the Making—The Gang at Work

of the pond, either in or out of the water.

A water garden will become most fascinating, and will well repay the first outlay, needing very little attention when in going order. Many people have natural facilities at hand, the only conditions necessary being sunshine, still, warm water, and plenty of rich soil. Further, where there are stagnant pools of water, it is a hygienic necessity to stock them with plants and fish in order that malaria and the mosquito may be brought to nought.

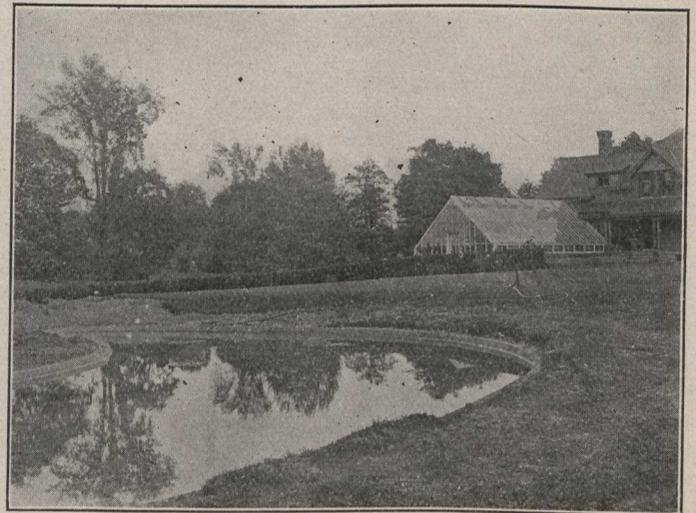
The best soil for aquatics is rotted vegetable matter from ponds or swamps, or if this is unprocurable, good heavy loam with one-third its bulk of well rotted cow manure. The following are a few hints taken from Dreer's aquatic circular, and they may be thoroughly relied on: The depth of water may vary from a few inches to four feet; all hardy Nymphœas will give better results if only covered by 12 inches of water during summer months. For growing in water two feet or more deep, only the strongest sorts should be chosen. If the water is too deep, construct boxes four feet or more square, 18 inches deep, and place 12 inches below surface. Tender Nymphœas and Nelumbiums should not have more than 12 inches of water above the crowns. When planting dormant rhizomes, they should only be covered with two or three inches of water until they have made their first floating leaf; then gradually increase the depth. By covering with water too deep at first, many failures have resulted. In planting it is merely necessary to push the rhizomes into the soft mud so that they will be just covered.

Hardy Nymphœas may be planted

the warmer and more sheltered the place the better. In tanks or ponds they may be planted singly 6 to 10 feet apart; in large ponds or lakes better effects are produced by planting in groups of three or more, 18 inches between each plant. All Nymphœas and other aquatics should be exposed to full sunlight.

The writer firmly believes that there are sheltered spots in Canada, especially in the Niagara peninsular, where the magnificent *Victoria regia*, or Amazon lily, could be grown if good sized plants were put in, say, about the middle of June. There is a variety now named *Victoria Tricken*, which is much hardier, of more rapid growth, and which flowers earlier than the original. These can be grown from seed sown very early in spring in a temperature of about 80°, which may be reduced when the leaves appear; or the plants may be bought at planting time. When planted in the pond they require more soil than the Nymphœas, and a larger surface of water for the development of the leaves. The crowns should have about 18 inches of water over them.

The pond described maintained a temperature during the summer of 70° to 80°, and at times ascended to 85°, the sun being the only source of heat. There is no doubt in some favored spots higher temperatures would be attained.



In June the Work was Completed

kills the germs of the disease before they inoculate the fruit or the leaves which are the lungs of the tree.

Tuberculosis is transmitted to children by drinking the milk of infected animals. Where do the cows get the germs? Not from the fresh air of the fields, not from the sunshine, not from the rain that falls upon their backs, not from the dew distilled in the air above them; but, from the grasses, leaves, fruits and vegetables that they eat and

digest. This converts vegetable tuberculosis into animal tuberculosis, then it passes from the animal into the human lungs and blood.

In plants, it first attacks the leaves or lungs, then the fruit, then the body; last of all, the circulation of the plant is destroyed. The plant dies from heart failure.

To cure tuberculosis in the vegetable world would mean drainage of swamp soils, dykage of marsh lands, irrigation of all lands by canals, reservoirs, artesian wells, windmills, or by electrical engines with water as the motive power. With well-drained land, well-plowed, subject to a constant supply of water, and with the judicious use of artificial fertilizers, we can quadruple our crops. We can also get rid of tuberculosis and other diseases that now interfere with success on the farm.

Making and Storing Cuttings

I wish to propagate some of the shrubs on my lawn. Can I do so by means of "slips" or cuttings? If so, how should they be made and treated?—W. M., Ottawa, Ont.

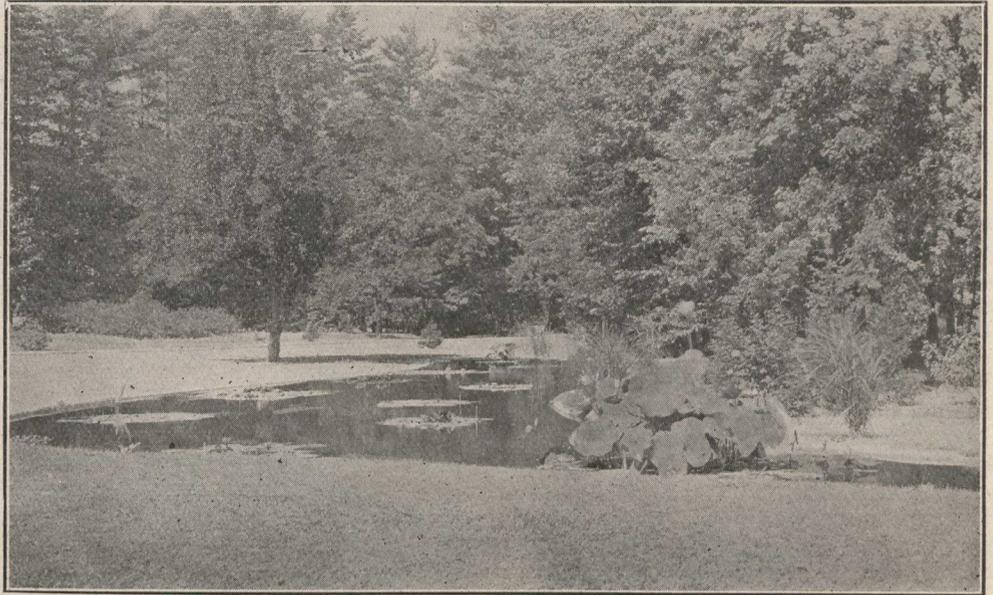
Most of the hardy shrubs may be propagated by the use of cuttings. The length of the cutting is governed by the distance apart of the buds, as two buds at least are required. Six to 10 inches is the regular length. When plants are "short-jointed," more than two buds are preferred. When making the cuttings, cut off the lower end close to the bud, and leave the exposed surface smooth and clean. The upper cut may be half an inch or more above the bud. Store them in moss, sand or sawdust over winter and plant in the spring. When planting some kinds of shrub cuttings, or even currant or gooseberry cuttings when the tree form of bush is desired, it is necessary to remove all buds except the upper one so as to prevent the formation of underground shoots.

Proper Time to Sow Seeds

What is the best time to sow seeds in spring, and how deep should they be planted?—W.R., Varennes, Que.

Hardy seeds, such as onion, spinach and lettuce, may be sown as soon as the ground can be worked. Seeds of corn, cucumber and squash cannot be sown until the ground becomes warm. Much depends on the kind of seed and on the physical condition of the soil. Seeds always should be sown in freshly-stirred soil, as they then will be placed in direct contact with moisture. On heavy soils, sow after a rain rather than before it. In soils where a crust forms over very fine seeds, it is advisable to keep the surface moist until the seedlings have pushed through.

One cannot state the proper depth to plant without knowing the kind of seed that is to be sown. Small seeds are



Two Months Late!—August—the Water Garden Appeared Like This

usually sown about one inch deep, although celery and some others cannot be planted so deeply. Plant peas, beans

and corn from two to four inches deep. Seeds may be sown somewhat deeper in sandy soils than in heavy clays.

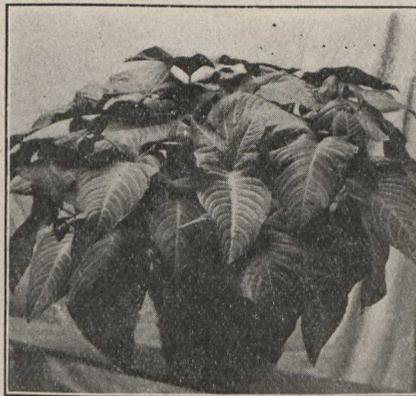
Phyllotænum Lindeni

Fred. J. Goode, Toronto

A PLANT of exceptional merit and one deserving of a place in every collection of ornamental plants is *Phyllotænum Lindeni* (*Xanthosoma Lindeni*). It has all the qualities that go to make a good decorative plant. The leaves are dark green, about one foot long, with well-defined midrib and

but do not give too much water. When plants are large enough for repotting, a four-inch pot will be the most serviceable. From this on, a warm greenhouse will be the best place to grow them. Well-grown plants in six-inch pots are excellent for table decoration, but as specimen plants in 14 or 16-inch pans they are most effective and very showy. The plant in the illustration is grown in a 16-inch pan, and is considerably over four feet through. Owing to the very porous nature of the material used for potting, it is necessary to feed the plants during their growing season, the spring and summer. Liquid cow manure with a little soot added is the most beneficial fertilizer.

During winter, heavy syringing overhead and not too much water at the roots will allow the plants to rest. This treatment will ensure good strong growth the following season and will more than compensate for the extra care and attention.



Phyllotænum Lindeni

numerous veins of ivory white. Leaf stems in large plants often measure two feet long. It is a rhizome tuberose, and its native habitat is New Grenada. It is easily propagated by cutting the root stocks into small pieces. These root readily in a good peat loam and leaf-soil with a little sharp sand and broken charcoal.

Use two and a half-inch pots. Plunge in bottom heat to ensure success. A little care is necessary at this stage. A dry atmosphere is fatal to the young growth,

Azaleas Bloom Often

Do azaleas bloom more than once, and what age must they attain before blooming?

Azaleas will grow and flower for years if plants are taken care of during summer. Stand azaleas out of doors in summer in the pots on some coal ashes in partial shade. Sprinkle foliage every day with clear water in summer. Azaleas are mostly imported from Holland ready for flowering. It takes several years to grow flowering plants of azaleas.—Answered by Wm. Hunt, O.A.C., Guelph.

Profitable Varieties of Vegetables for Market

ONE of the most important factors connected with the management of a market garden is the selection of varieties. It is a local matter. Varieties that are meritorious in one district may be useless in another. In choosing, the gardener should know what kind of a variety is wanted and what it is wanted for, and then select a variety that approaches the ideal. Old, well-tried varieties are the most reliable. New varieties, or novelties, should be tested but not grown extensively until proved of value.

List of varieties recommended for the various districts have been prepared for the readers of THE CANADIAN HORTICULTURIST. The selections of Mr. Fred Collins, of Chatham, Ont., for his district is as follows: "In choosing varieties of vegetables we must bear in mind two things; first, the requirements of our market, and second, the varieties adapted to our soil. Some of us in this vicinity neglected the first of these precepts last season and grew some red celery. We knew its superior quality, but the public did not like the color. Anyway, we shall not grow red celery next season. A variety of celery better than White Plum for early market is Livingstone's Snow-White; it is a more attractive celery and of better flavor, Golden Yellow, however, is easily the best of all.

"In tomatoes we grow principally Earliana for early, but for late I would head the list with Matchless. The best general purpose cucumber is the Arlington White Spine; especially is this an attractive table variety, but it answers well for pickles. In all vegetables we have our individual preferences; I would say that the following are the most popular here: Cauliflower, Snowball and Erfurt; cabbage, Charleston Wakefield for early and one of the various Drumheads for late; carrots, Chantenay; onions, Prizetaker, Yellow Globe Danvers, Red Wethersfield; lettuce, Grand Rapids; corn, Premo for early, Evergreen for late; beets, Crosby, Egyptian and Eclipse; muskmelons, Montreal Nutmeg and Osage.

"When planting seed in greenhouse or hotbed, the soil should be well-rotted turf and stable manure, with an addition of, say, four quarts of sharp sand to a bushel of soil. This should be well mixed and sifted. Small seed, as celery, should be sown on the surface and covered either with dried, sifted moss or with a piece of coarse sacking. When germination takes place, the cover should be removed and a partial shade afforded by laying strips of lath at intervals across the bed. Great care should be exercised in watering; for if the soil becomes too dry or too wet during the process of germination,

the delicate germ will be injured and perhaps destroyed. Avoid excessive changes of temperature at all stages of growth."

NIAGARA FALLS DISTRICT

The following remarks were received from Mr. Thos. R. Stokes, Niagara Falls South, Ont.: "This is stock-taking time for the manufacturer, merchant and farmer. The successful business truck-grower should possess a record book in which dates of planting



Flat Cabbages

and marketing, amounts sold, prices realized, and so on, are correctly kept. With such a record, it is possible to purchase seeds both economically and intelligently. To avoid previous mistakes, discard unprofitable varieties and eliminate the disappointment of over-production, with its subsequent glut of the market by this or that vegetable. It is the haphazard growers



Savoy Cabbages

who are responsible for glutted markets, and they say that gardening does not pay. The annual seed catalogs of reliable seed merchants should be carefully read, and new varieties given a fair trial.

"Starting with asparagus, Colossal is the local standard with Columbian on trial in new beds. Brussels sprouts should be grown only in a limited way, as demand is small compared with cabbage; Dalkeith is the variety grown. The same may be said of Kale.

"Wax beans—The round, brittle pad-

ded varieties are the only kind to grow here, such as Burpee's Saddle-back. Green beans—Refugee gives best satisfaction. Beets—For extra early, Egyptian; for main crop and pickling, Improved Eclipse. Cabbage—First crop, Early Express, Wakefield; second early, Early Summer and Vandergaw; late crop and sour-kraut, Winningstadt, Danish Ball, Chester King, Galt Dutch Savoy, Chester Savoy and Vertus; red, Red Rock. Carrots—Early, Oxheart; general crop, Chantenay, Nantes and Scarlet Intermediate. Celery—Early, White Plume; second early, Golden Paris; late, Triumph and Pascal. Celery—Prague.

"In cauliflowers, the best seed and varieties should be grown; cheap seed and late sorts waste money. Plant Erfurt, Whitehead, Snowball, Gilt Edge and Danish Summer. Cress—Extra Curled. Cucumbers—Hothouse, Rollison's Telegraph, Duke of Edinburgh; outdoors, Early White Spine; late and pickling, Evergreen White Spine and Arlington. Corn—Extra early, Peep O'-Day and White Cory; second early, Early Giant; late, Country Gentleman and Stowell's Evergreen. Lettuce—Forcing, Grand Rapids; garden crop, Non-Pareil leads in popularity; Big Boston, Californian Cream and Trianon Cos. Muskmelon—Emerald Gem is the local favorite, followed by Rocky Ford, Osage and Cantaloupe. Watermelons—Cuban Queen and Plunney's Early. Citron—Colorado Mammoth. Leek—Dunand Limited and Musselburgh. Onions—For bunching, White Southport; pickling, Silverskin and Barletta; transplanting, Prizetaker; main crop, Yellow Danvers. Peppers—Hot, Cayenne; sweet, Ruby King. The new Neapolitan established itself as an extra early sweet variety last season. Parsnip—Hollow Crown, Gursney and Elcomb's Giant. Peas—Earliest of All, American Wonder and Gradus lead for extra early varieties, and Telephone, Advances, Hero and Marrowfats for main crop. Parsley—Triple Moss Curled.

"In potatoes Early Ohio is still the leading early variety, although Nought-Six and Michigan are extensively grown; main crop, Uncle Sam, Carmen, Rural New Yorker, Hebron. Pumpkin—For cooking, Sugar; field, Connecticut. Radish—Rosy Gem and Scarlet Turnip for forcing; French Breakfast and Charters for summer; White and Red China and Black Spanish for winter. Spinach—Victoria, Bloomsdale, Viroplay. Salsify—Sandwich Island. Rhubarb—Victoria and Johnston's St. Martin. Squash—Boston is the main summer and fall, and Warded Hubbard the leading winter. Vegetable Marrow—Turban and Marblehead. Tomato—For

(Concluded on page 40)

Growing Tomatoes for the Canning Factory

T. B. Rivett, B.S.A., Department of Agriculture, Toronto

TOMATO growing in Ontario is becoming more and more extensive, and has proven so far to be one of the most profitable crops of the farm. Although we have no definite figures to date, yet one cannot fail to see that this industry is on the increase. In 1904, over 1,500,000 bushels were consumed by the canning factories alone, representing a sum farm-value of \$326,486. As the consumption increases, together with improvements in canning methods and machinery, the supply naturally will increase also.

There are distributed throughout eastern, western and southern Ontario some 50 canning factories. Of this number 40 make tomatoes one of their specialties, and offer every inducement for farmers to grow them. Of late, however, there is a feeling of dissatisfaction with the price per bushel, which is 25 cents, the farmer on the one hand claiming that 30 cents should be, and is, a moderate price, especially where dangers of early frosts are prevalent; while, on the other hand, the canners claim that 25 cents is not only legitimate, but insures the farmer a fair margin of profit. It might be said, however, that where the farmer meets with exceptional conditions, 25 cents would seem sufficient, but in normal conditions, 30 cents is hardly too much in consideration for the risk which the

average grower has to encounter in the general run of seasons in this province.

SOIL THAT IS SUITABLE

The tomato will grow and succeed in a great variety of soils, and in different districts will give different results, on the same kinds of soil. The best results, therefore, will be obtained only by a close study of the soil and its treatment under the prevailing conditions.

The best soil is a clayey loam. Although it is not as early as others, yet it produces a firmer and thicker tomato with a smaller percentage of water, which to the canner is of great importance; for, the larger the percentage of moisture, the greater will be the lack of solidity and the smaller the number of cans to the bushel. The waste in pulp and juice at present commands little value on the market.

The land should be well drained, either artificially or naturally, and if possible, the location should be an elevated one so as to insure atmospheric drainage, thereby lessening the probable damage by light frost. Under no conditions should one try to grow tomatoes in a low, damp locality. Not only do they suffer for lack of drainage there, but early and late frosts will, in all probability, damage

them, and fungous diseases, such as wilt and blight, are more likely to be prevalent.

PREPARING THE LAND

It is always best to grow crops in rotation, and this applies equally well to tomatoes. The tomato should be preceded by a hoed crop, and preferably a deep-rooted one. In the fall, after the land has been plowed, a good dressing of well-rotted manure should be applied to the soil and ribbed up. In the spring, this should be thoroughly incorporated with the soil, and a suitable seed-bed prepared for the time of planting.

WHAT IS THE BEST VARIETY?

The question of variety is of great importance, and can be solved only by continued experiment. No variety will give the same results, on different soils and in different localities. Season, climate, treatment and source of seed, all have a prevailing influence on development, product on and time of ripening. One must observe his neighbor's methods and experiment for himself, before he will eventually find the most profitable tomato for his district. The following are those grown in the different sections of Ontario with apparent success: Early—Earlianna, Chalk's Early Jewel, Moore's Early Marvel, Atlantic Prize. Late—Stone, Igotum, Living-



Field of Beans in the Essex Peninsula of Ontario

The growing of beans is carried on extensively in the Essex peninsula of Ontario, particularly in the counties of Huron, Kent and Essex. This year the industry increased wonderfully. Whole farms were devoted to the growing of this crop. Most of the beans are grown for winter use and are consumed in Canada.

ston's Perfection, Favorite, Matchless, Success, Ruby, the New Queen, Royal Red Wonder, and Marvel.

The great essentials to be looked for in a variety are earliness, size, color, solidity and smoothness, and regularity. The Stone and Ignatum possess to a marked degree all these qualities, except earliness; they are too late, and throughout Ontario are invariably injured by the early frosts. The Earlianna is the best of the earlies, but it is not a good canner, as it lacks smoothness, regularity, solidity, and contains too great a percentage of water.

GOOD SEED ESSENTIAL

In a measure the future of the tomato plant depends upon the kind of seed. Poor seeds will produce poor plants, and naturally a poor crop. Good seed is essential to success. The managements of canning factories and associations have realized this, and in most cases import or buy their seed from reliable firms, retailing them to the farmer at cost price. This insures the vitality and pureness of seed, but most of these seeds are grown in southern latitudes, the fruits of which are said to require a longer season to mature than those grown at more northerly ones.

Where shortness of season has such a prevailing influence as in Ontario, earliness becomes an essential rather than a factor. It has been suggested that this difficulty may be overcome by the growers growing their own seed. Although this is a good solution of the problem, yet few growers have been able so far to make a success of it. In Prince Edward County, where perhaps the finest tomatoes are grown, this practice is prevalent. The chief failures lie in the mixing of varieties and their choice of fruit for seed.

The farmer who raises his own seed must keep his varieties distinctly apart in order to prevent interpollination or cross fertilization, and this naturally increases the cost of production. Again, and perhaps the most important, is his choice of seed. Too often he selects promiscuously the choice individual fruits and expects his seed to produce the same. He must remember that prepotency does not lie in the individual fruit, but rather in the vine, and that seeds from those that produce the greatest number of uniform and good fruit are more likely to inherit the potent qualities of the parent than seeds saved from plants that here and there produce one or two excellent fruits. If the grower bears these factors in mind, there is no reason why he should not produce and save his own seed to great benefit.

GROWING PLANTS

Every farmer can, and should, grow his own plants. Excellent results may

be obtained at a low cost when care and perseverance are practised. The seeds may be germinated in a flat, 18 by 12 inches and three inches deep. The soil should be a light loam. When the seedlings are from two to three inches high, they may be put into another flat, and finally, after they are from four to five inches they may be again transplanted into another flat, this time three or four inches apart. A preferable way is to plant two or three in a strawberry box. In this way they are easily handled and the roots are less liable to be broken.

These operations have to be started in the latter part of February, and artificial heat is necessary. A small number of plants may be grown in the house, but the most convenient method is to use a hotbed. The expense incurred is very slight, and if good manure is used the heat will be found to be ample. Strong, bulky plants are required. Factors, such as crowding, too much heat, and lack of ventilation should be avoided, or spindly plants may result.

HARDENING THE PLANTS

It is a universal practice to harden the plants prior to setting them permanently in the field. This is done in order to moderate the great change from artificial heat to the cold nights and mornings of the spring. All that is necessary for this process is a cold frame in which the plants should be placed for at least a fortnight before planting.

SETTING THE PLANTS OUT

The land should be thoroughly stirred and a good seed bed prepared to receive the plants, which may be planted three by four feet or four by four feet. An ordinary marker, such as for corn, may be used, the plants being inserted at the intersections. Choose a cool day and cloudy if possible. Plant in the afternoon, as this lessens the injuries of drying out of plants and ensures a better catch. In planting, great care should be taken not to injure the roots or break the plants, and the earth should be firmly pressed around base of each.

Cultivation should be started immediately and kept up so as to conserve moisture and to keep down the weeds. It should be stopped when the plants have covered the ground, and render cultivation impossible without injury to the vines.

MARKETING THE FRUIT

Good strong bushel boxes with the grower's name or initials printed on the side should be used, the fruit being picked and placed in these and taken straight to the factory. Although the grower of tomatoes for the factory is not catering to a fancy market, yet he should not for one moment lose sight

of honesty. Too often blighted and worthless fruit is packed away out of sight in order to deceive the factory. This method may be beneficial for a short time, but in the long run it is found out and the grower gets in the bad graces of the manager, who will inspect his fruit thoroughly, and will await a chance for retaliation. Honesty is the best policy. If the farmer were to practise this policy and have nothing to do with petty deceptions, he would not only benefit himself but all others with whom he comes in contact. He would aid in placing the tomato-growing industry on a more satisfactory basis.

Starting Early Celery

The seed for early celery should be sown in the hotbed in February. See that the sun does not strike the seed either before or after sowing as it retards growth. Seedlings that have been set back seldom develop properly.

A hotbed for celery should have at least 2½ feet of manure with four to six inches of good garden soil on top. A surface hotbed is better than one in which the manure is placed below ground. If a hole is dug, do not make it more than six inches deep. Water gathers in and destroys the heating power of the manure.

A surface hotbed should be made so that the manure extends one foot each way beyond the frame. The latter being placed in the centre, is filled with six inches of soil, and is made high enough to admit of a six-inch space between the soil and the glass. As growth of plants develops the frame may be raised accordingly. Plants in a hotbed so prepared and well covered at night will stand a heavy frost without injury.

Varieties of Vegetables

(Concluded from Page 38)

extra early, Earliana; second early, Chalk's Jewel; late, Ignatum, Dwarf Stone, Royal Red; New Success gave much satisfaction last year, also the Enormous; for pinks, Plentiful surpasses everything in quality, color and yield. In turnips, Snowball, Orange Jelly, Swede, Hall's Westbury, Sutton's Champion and Elephant are most generally grown."

Do not start the hotbed too soon.

Select and buy your seeds early.

Do not buy seeds because they happen to be cheap; get the best.

Careful attention to ventilation of hotbeds is one of the important means of making plants stocky.

OUR QUESTION AND ANSWER DEPARTMENT

Readers of *The Horticulturist* are invited to submit Questions on any phase of Horticultural work

Oyster-Shell Bark-Louse

Would Gillett's Lye be of value in treating the Oyster-shell Bark-louse?—F.F., Brighton, Ont.

We do not recommend Gillett's Lye as a remedy for the Oyster-shell Bark-louse. As far as we know, it is a soda lye, and we do not think that it would be at all effective. There are two very satisfactory remedies for this insect. The best is the lime-sulphur wash to be applied about the beginning of April. The wash must be properly made and boiled for at least two hours before being applied to the tree. It will usually clear the tree completely of this scale and of any other that may be upon it.

The other remedy is an application of ordinary whitewash. This should be applied in the fall and repeated a second time. The effect of it is that when it scales off in the winter it carries the insect with it. I am not at all sure that it will destroy the eggs of the bark louse, but there is no doubt that the lime-sulphur treatment, if applied in such a way as to completely reach all the interstices of the bark, will kill both scales and eggs. We are intending to carry a further series of experiments with the lime-sulphur wash, and other insecticides in the early spring, and hope to have more information to impart later on.—Answered by Dr. Charles J. S. Bethune, O.A.C., Guelph.

Propagating Apple Trees

Will you please give detailed instructions for the propagation of apple trees by root grafting?—C.M.H., Bridgetown, N.S.

Standard apple stocks are grown from seeds, and dwarf apple stocks from mound layers of the Paradise apple. Seeds for standard trees are either imported from France or obtained from the pomace of cider mills. As a rule, fruit growers or nurserymen do not grow stocks, the raising of which is a business in itself. The seeds are removed from the pomace by washing. They are then dried and stored in sand in a cool, dry place until spring. Fall sowing may be advisable in loose, well-drained soils. Spring planting is better adapted to our conditions. The seed should be sown as soon as the ground is in fit condition to receive them in rows three feet apart for horse cultivation, or in drills 5 to 10 inches wide for hand labor. Sow two or three inches deep. Cultivate well, and thin if necessary. The seedlings should grow 8 to 12 inches that season.

In the fall they are sold to nurserymen, who root graft them during the winter. The roots are cut into sections four or five inches long. The lower pieces are discarded. The best ones are selected and whip-grafted with scions of about three buds that have been taken from trees of the desired variety the previous fall and stored. After the union is made, the parts are wrapped with waxed bands to exclude the air. Bands or string should be used that is strong enough to hold the parts for the time being, but, at the same time, weak enough to break when pressed by the growth of the graft. Pack the grafts in sand and store until spring in a cool cellar. Should the cellar be close and warm, the grafts are apt to start into growth, and subsequently rot. In the spring, when the ground can be worked, plant the grafts in the nursery and care for them until two years old, when they may be sold or transplanted to the orchard.

Varieties of Peaches

Kindly name the best early, medium and late peaches for market purposes that may be grown on sandy soil.—F. H., Sarnia, Ont.

Most peaches do best on sandy land. For your section the following varieties probably will give good results: Early St. John, Early Crawford, Fitzgerald, New Prolific, Engol, Elberta, Golden Drop, Kalamazoo and Smock. These are mentioned in their order of ripening, and are yellow fleshed free-stones.

Selecting Nursery Stock

As I intend to buy some trees for planting, I desire some information regarding nursery stock. Will you tell me the points that should be observed when purchasing.—I.R., Burlington, Ont.

When buying nursery stock secure trees of the desired varieties that will give the best possible results. The trees must be true to variety and of a proper age for planting—apples, pears and quinces, from two to three years; peaches, not more than one year from the bud; and so on. Large trees are not always the best. Medium-sized ones are usually more satisfactory. Whether large or small, they should be healthy, thrifty, smooth and well grown, but not spindly. They should possess good roots, and be free of fungi and injurious insects. It is best to avoid trees grown in districts subject to tree troubles, such as peaches from a district where leaf-curl is prevalent or pears from a section where blight is known to exist.

To secure these desirable features in

the trees, it is advisable to have a written agreement with the nurseryman to that effect. Allow no substitution of varieties and reject all inferior stock. When convenient to nursery, it is well to inspect the stock and buy directly from the nursery rows.

Treating Freesias

When my freesias are finished flowering what shall I do with them? Can the bulbs be kept and planted next fall?—C.D., Annapolis, N.S.

Give freesias less frequent waterings after flowering, withholding water gradually until the foliage turns yellow. Give no more water. Place pots away just as they are in a dry room or cellar. About the end of August or early in September shake the bulbs from the soil and re-pot them in fresh, rich, loamy soil. Use some drainage in pots. Water sparingly until growth has well commenced. Place in window when potted. Freesia bulbs treated in this way can be kept for years. Plant only large bulbs for flowering.—Answered by Wm. Hunt, O.A.C., Guelph.

Winter Care of Hibiscus

How shall I treat a hibiscus that bloomed freely last fall? Does it need a rest?—B.T., Bracebridge, Ont.

Keep the hibiscus partially dormant in winter. This is done by giving sufficient water to keep the soil barely moist, and by keeping the plant in a cool room or basement in a temperature of 45 to 50 degrees. The pot or Japanese hibiscus likes partial rest during winter as described to flower well in summer and autumn.—Answered by Wm. Hunt, O.A.C., Guelph.

Heating a Forcing House

What is the best system of heating a forcing house for the growing of vegetables?—R.N., Hamilton, Ont.

Forcing houses may be heated by hot water, steam, or, in cases where the house is small, a smoke flue. The two former are the most satisfactory, although much more expensive. Steam averages higher in temperature than the hot water. The heat from steam is distributed more regularly than that from hot water. It heats longer runs, and is better for crooked circuits. It is probable that steam is the most economical source of heat for a large forcing house.

If the reader of *THE CANADIAN HORTICULTURIST* who asked a question regarding weeds in lawns, will send his name and address, the desired information will be furnished by letter

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THE TARIFF QUESTION

The hot discussion of the tariff question as it
relates to fruit, that has been precipitated by
the action of the directors of the Ontario Fruit
Growers' Association, in agreeing to confer with
a committee from the Michigan Horticultural
Society on this subject, may result in good.
It serves to illustrate how careful the directors
of the association must be in dealing with matters
of this kind. This, unfortunately, now, is
largely a political question concerning which
there is a clear-cut difference of opinion among
growers all over the country. Any action that
the association may take, therefore, on the sub-
ject is certain to bring it into open conflict with
a large number of growers and to accomplish but
little if any good. The outcome, probably,
would be that both political parties would en-
deavor to gain control of the association, and
that would be disastrous.

This whole tariff question, when boiled down,
resolves itself into this: Were the United States
markets to be thrown open to our Canadian
growers, it would enable us, at certain seasons,
to dispose of much of our fruit to better advan-
tage than is now possible. On the other hand,
were our markets thrown open to the United
States growers, it would mean that Canadian
growers, particularly those who produce peaches
and small fruits, would be at the mercy each
year of the growers in any section of the United
States where there might happen to be a glut.

This would make the position of the Canadian
growers very precarious.

While there are advantages in favor of a tariff
on fruits, we feel that it is absolute folly for a
small number of growers to attempt to have
a tariff imposed that would shut southern fruit
out of our markets, and particularly our western
markets, at seasons of the year when such fruit
cannot be produced in sufficient quantities in
Canada. The best suggestion we have seen so
far is that made by Mr. W. Maclean, M.P.,
who advocates the establishment of a tariff on
fruits and vegetables during only those seasons
of the year when they will be of benefit to our
growers. This suggestion has much to recom-
mend it. It is reasonable, and a little time spent
looking into it more thoroughly than has yet
been done would be of advantage.

As regards the directors of the Ontario Fruit
Growers' Association, the discussion that has
taken place has made it clear that they will need
to deal with this subject with the greatest care.
They are handling an explosive substance
which, if it goes off, may have disastrous
results.

THE COLD STORAGE ACT

The cold storage act introduced into the Do-
minion Parliament by Hon. Sydney Fisher is
not drafted in a manner that will tend to encour-
age the erection of cooperative fruit packing
houses by fruit growers and, therefore, is dis-
appointing. It may encourage the construction
of such plants by private individuals and thus
assist growers indirectly. The benefits likely
to be derived, even in this way, however, we
fear are not great.

The act provides that only ten per cent.
of the cost of the warehouses will be advanced
by the government upon their completion.
The remaining twenty per cent., to be paid by
the government, will be distributed in four
annual instalments of five per cent. each. This
means that the persons interested in the erection
of these warehouses will not receive their final
share of the government's assistance until four
years after the buildings have been completed.

The object the government has in view, in
distributing its assistance in the manner pro-
posed, is commendable, but we fear it will defeat
the objects aimed at, at least as far as fruit
growers are concerned. What the fruit industry
needs is assistance that will offer a strong induc-
ement to growers—who are proverbially slow to
move in matters of this kind—to undertake the
erection of simple warehouses, provided with
ice cold storage for use during only a limited
period each year, that will enable them to
handle their fruit on the cooperative basis.
Unless the assistance thus given upon the com-
pletion of the warehouse is equal to at least
twenty per cent. of the cost of construction not
many growers are likely to take advantage of
it. The remaining ten per cent. could be dis-
tributed in two instalments of five per cent. each
during a period extending over two years. This
is a most important matter. Fruit growers
will do well to draw it to the attention of their
members in the House of Commons.

FUMIGATION METHODS

There is need for a more vigorous enforce-
ment in Ontario of the law respecting the fumi-
gation of nursery stock. The semi-annual in-
spection by officers of Department of Agriculture
is beneficial as far as it goes. It is not enough.
Besides the visits of the general inspector, some-
thing should be done to ensure fumigation being
done when the inspector is not on hand. Many
of our leading nurseries can be depended upon
to carry out the provisions of the law without
government supervision, but there are others
who consider the matter one of much trouble
and useless—and there are a few nurserymen
who boast of their ability to fool the inspectors.
To prevent the work being slighted in any

nursery, it would be well for the government
to appoint a man at each of them to superin-
tend the work during the shipping seasons.
This would incur some expense, but nothing to
compare with the advantage gained in lessening
the spread of San Jose scale and other injurious
orchard pests.

A feature of our fumigation laws that is sub-
ject to adverse criticism is compulsory fumi-
gation of stock at the border from states that
enforce laws at home. It would seem that
something could be done to remedy this matter.
It is claimed that, while one fumigation may
not injure nursery stock, a second one (as is now
required at the border) is oftentimes disastrous.
Until this is done, however, the condition of
affairs at the border could be mitigated by
passing a regulation compelling firms on the
other side, who desire to do business in Canada,
to pack in a separate package those classes of
stock that the law require shall be fumigated.
As it is now, nursery stock of all kinds is
placed in the same package, thus necessitating
considerable labor and time in removing the
contents and sorting them. A simpler remedy still,
but one not so efficient, would be to compel
foreign nurseries to write distinctly on the out-
side of the package the classes of stock that are
contained therein. This would facilitate work
that is important when one considers that at
Niagara Falls, last spring, there entered Canada
504 consignments, comprising 7 full carloads,
besides 632 boxes and bales—to say nothing of
the quantities that entered the country at other
points.

It has been suggested that dipping nursery
trees in a lime-sulphur wash be substituted for
fumigation with hydro-cyanic acid gas. This
has much to commend it. Experiments should
be conducted at the Ontario Agricultural College
or elsewhere to determine its worth.

THE HORT'L SOCIETIES' ACT

On the first of this month the new act govern-
ing the horticultural societies of Ontario came
into effect. Hereafter, the horticultural soci-
eties of the province will work on an entirely
new basis. The provisions of this act have been
referred to before in these columns but further
reference at this time may be in order.

Exception, so far as we know, has been taken
to only two of the main clauses. In the past
some half-dozen societies have devoted most
of their funds to the holding of exhibitions
of fruit and flowers at the time of their local
agricultural exhibitions and in conjunction
therewith. Under the new act this will not be
permissible, and a few of the societies are com-
plaining on that account. We still hold that
this provision of the new act is sound. Agri-
cultural and horticultural societies were estab-
lished for two radically different purposes.
When, therefore, a horticultural society turns over
most if not all of its funds to the holding of an
exhibition in conjunction with an agricultural
society, it becomes, to all intents and purposes,
a branch of the agricultural society. A govern-
ment grant to horticultural societies would
never have been made had it been thought that
their funds would revert back to agricultural
societies that, also, were receiving government
aid. The new act, therefore, does well to lay
down the principle that horticultural societies,
hereafter, must work along the lines for which
they were intended.

The second clause to which exception has
been taken is the one that stipulates that a
society shall not expend more than one-third
of its funds in any one line of work. The wis-
dom of this clause will depend largely upon the
manner in which it is enforced by the Depart-
ment of Agriculture. It may be taken for
granted, at the outset, that the Department
will not be arbitrary in this matter. Where a
society is accomplishing good work, even were
its expenditures in one line to exceed the legal
limit, the department can be depended on not

to interfere. On the other hand, experience has shown that in some cases cliques obtain control of a society and manipulate its funds largely to their own benefit. This may be done in various ways such, for instance, where the membership is small, by devoting most of the money of the society to the purchase of seeds, bulbs and plants for the members. In other cases, practically all of the money may be diverted to the holding of one large exhibition annually, which often is but slimly attended and at which the prize money is divided among about a dozen exhibitors. There are so many excellent lines of work that societies can undertake, it is desirable that there shall be provision in the act which will prevent any one line being followed to the extreme. We feel that the new act should be given a trial as it is. It will be time enough to demand a change when it has been shown that its various provisions are likely to result in more harm than good to the societies as a whole.

The best features of the act are that it provides for an increase in the grant to horticultural societies, that it abolishes all cause for friction between agricultural and horticultural societies in regard to their grants, and that hereafter the grants to societies instead of being practically uniform from year to year, as in the past, will depend as to their amount, upon the work done by the societies. During the next few years there promises to be a marked increase in the number of these societies in Ontario and in the value of their work.

Along the line of the Michigan Central R.R. in southern Ontario the company has planted catalpa trees. Work of this kind is to be commended. While it is done by the company with a business view it tends to beautify that portion of the country. As it will ultimately furnish posts and ties for the railway, it will help to check the rapid deforestation of southern Ontario and other parts of the province that now is going on and is to be regretted. Although the planting of these trees is in only an experimental stage, there are many districts where it would be advisable for the C.P.R. and the G.T.R. to do likewise.

Fruit Growers See Minister

Objection was urged to the action of the Ont. Fruit Grs. Assn. by a deputation on Jan. 24 before the Minister of Agriculture in Toronto. The action was also resented of the assn. in appearing before the tariff commission last summer without the authority of the fruit growers of the country.

The delegation claimed that the provincial assn. did not properly represent the fruit interests, also that they have not authority to act in the matter, as their powers are educative and not legislative. The minister promised to look into the matter.

There were present A. H. Pettit, H. L. Roberts, N. Cossitt, J. A. Livingston, Fred Henry and J. E. Henry, of Grimsby; W. B. Bridgeman, T. H. P. Carpenter, J. Thompson, E. M. Smith, W. M. Orr, I. Vanduzer, Winona; T. Lewis, Bartonville; J. Webster, Stony Creek.

At a meeting of the directors of the Hort'l Pub. Co., Ltd., held in the offices of the company, Toronto, Jan. 23, reports were presented that showed that the company has been making satisfactory progress. Great growth was shown in the case of both THE CANADIAN HORTICULTURIST and *The Canadian Florist*, the 2 publications owned by the company. The following board of directors was elected: Messrs. W. H. Bunting, St. Catharines; J. H. Dunlop, Toronto; A. W. Peart, Burlington; H. Jones, Maitland; Elmer Lick, Oshawa; Hermann Simmers, Toronto; and H. B. Cowan, Toronto. At a subsequent meeting of the directors, Mr. Bunting was elected president, Mr. Dunlop, vice-president, and Mr. Cowan, sec.-treas.

Prince Edward Island Letter

Rev. Father Burke, Alberton

THE great question of varieties of apple trees comes up at every convention. Some hold to its paramount importance for successful orcharding, with tyros in the business, at least; others make the broad and proud boast that Prince Edward Island can grow well all the apples which flourish in the northern temperate zone. Senator Ferguson, who *does* as well as *says*, is now ready to get up and make this latter assertion. Still it is just possible that some varieties do better here than others, generally speaking. In special situations and when well fertilized and handled, most apples, we believe, can be grown successfully.

Take the early varieties. No place can grow the Yellow Transparent to greater perfection. They are hardy and fruitful and of the best quality for an early apple. Then, following them, the Red Astrachan and Duchess grow and bear profusely. Alexander and Wolf River, its close parent, cannot be grown better anywhere; and we grow Fameuse, McIntosh Red, Canada Red and Baxter, just as well. We like to believe, too, that we can outdo Nova Scotia in its favorite Gravenstein. Certainly ours are delicious apples—large, luscious, well-colored and longer keeping than the Annapolis Valley fruit.

In winter sorts we can succeed in Spys, Kings, Russets, Ribstons, Starks and Ben Davis. Some think the Baldwin is not among our successes; others say we can grow excellent Baldwins. One thing sure, we have had considerable winter-killing of this stock. But a few winters ago, when Nova Scotia suffered severely in its Gravensteins and Baldwins too, if I mistake not, peculiar weather conditions obtained which may not recur in a lifetime.

We have Robertson's "Inkerman," too, which will do well and is a much better keeper and finer apple than it gets credit for being in some quarters. It is a root growth from a standard tree planted by Mr. Robertson when he started out orcharding away back in the fifties; whilst it must have had a place in the extensive nomenclature of the past, it cannot be placed by our present day pomologists, all of whom have been asked in vain to identify it. Now it carries the name of Mr. Robertson's farm and nurseries, "Inkerman." He has propagated great numbers of them and his heart is more completely in it than in any other island apple.

We have another species here which Mr. McRae, of Pownall, has brought before the association and country, and which was produced much after the way of the Inkerman. It is called "Dodd," because it was an old English gardener of that name that originated it. It is a pretty apple, and of fairly good quality; it will not keep like the Inkerman, however. These two apples are all that we can call peculiarly "Island apples." We have the old French Pippin—a link binding us to Acadian days.

The whole nursery question came up at our late meeting as vital to the fruit industry. As, however, the representative of the Ontario firms could not get over, we did not take any decided action. That something must be done to secure us against nursery frauds, all believe; and even if we admit poor planting and handling in many cases, there is still ground enough to educate offhand many sellers of stock from without who have victimized the people awfully. I will return to this matter in my next.

Important Meeting of Fruit Growers

AMONG the questions discussed at a meeting of the directors of the Ont. Fruit Growers' Assn. held in Toronto, Jan. 8, were the tariff on fruits, substitution of nursery stock by nurserymen, and the cooperative movement among fruit growers. A resolution was passed appointing a committee to confer with the Michigan Hortl. Soc'y, should they ask for it, regarding the recent resolution of the Michigan Soc'y advocating a reciprocal interchange of fruit products between Canada and the U.S. The personnel of the committee is: Robt. Thompson, St. Catharines; J. L. Hilborn, Leamington; and Elmer Lick, Oshawa. When the resolution was passed, the Board had not received any direct communication from the Michigan Soc'y asking for an expression of opinion regarding the matter. The feeling of the Michigan Soc'y became known to the Ont. Assn. through the press. The committee was instructed, therefore, not to act until a definite request had been received.

The resolution and discussion that followed was the result of a motion that had been drafted by W. L. Smith, of Toronto. Not being able to be present, Mr. Smith had asked Alex. McNeill, chief of the fruit division, to present the motion. Mr. McNeill, in the discussion, favored free trade. He said that such was not likely to be for many years yet, but that the idea was good. He pointed out that the U.S. fruit exports amounted to less than 1% of the production. In the near future, he said, the U.S. is going to be an importing country. When that time comes, free trade in fruits will be of value to Canadian growers. Mr. McNeill mentioned in particular the value of free trade to the growers in the counties bordering Lake Erie. Should the tariff be removed on both sides of the line, the future would see steamer loads of

fruit leaving Canadian ports every night, and landing their cargoes the following morning at U.S. ports. The geographical features of the U.S. immediately south of Lake Ontario are not conducive to successful fruit culture near large cities that are located on and near the lake shore. The fruit area of that section of the U.S. lies some distance from those markets. For this reason, in the event of free trade, growers in southwestern Ont. would have the control of that market. This eventually would transform that portion of Ont. into one large fruit and truck garden.

The other side of the question was discussed in a practical manner by A. W. Peart, of Burlington, who contended that free trade would be an injury to the industry in this country. The balance of trade between the two countries is against Canada. In the U.S. there are approximately 10 acres of fruit to our one. There the cost of production is less. Were the tariff doors open, American growers could, and would, flood our markets. He took the view, also, that the directors of the assn. did not have the right to discuss such a subject. Other views of Mr. Peart's may be found in another column of this issue.

An opposite view was taken by A. A. Wright, M.P. for S. Renfrew, who said that Canada wants cheaper fruit and fruit for a longer period in the year. The market of the west is great and it, in particular, wants cheap fruit. By having cheaper fruit, more people can be educated into the habit of eating fruit; and when they acquire the habit, three times the present quantity will be consumed. Geo. A. Robertson, of St. Catharines, said that Canada is big enough to take care of itself, and that Canadians should have the Canadian market.

It was finally decided that the resolution should not actually approve of the stand that

was taken in Michigan. It simply appointed a committee to confer with the growers there in regard to the matter. Incidentally, it pointed out that Canadians are anxious to participate in the good feeling suggested by the Michigan resolution, and that such should exist between growers in both countries.

SUBSTITUTION OF NURSERY STOCK

An animated discussion took place on the substitution of varieties by nurserymen. It was thought that nursery stock should be guaranteed true to name by law. A committee was appointed to draft a scheme regarding the matter, the personnel being Geo. A. Robertson, Robt. Thompson, and W. H. Bunting, all of St. Catharines. Nurseries should be held responsible for guaranteed stock, and the grower should be protected by a written agreement that would bind the nurseryman and hold him liable for losses through negligence.

A committee composed of A. A. Wright, M.P., and Alex. McNeill, was appointed to interview the postmaster-general regarding the establishment of a parcel post for fruit and other produce, somewhat similar to that in G. Britain. There, it is satisfactory to the growers of fruit and vegetables. It makes the handling of small consignments convenient. It has the effect of causing railway companies to compete with the government in collecting, carrying and delivering parcels. It enables the producer to deal direct with the consumer.

THE COOPERATIVE MOVEMENT

Considerable discussion took place regarding the organization throughout the province of additional cooperative fruit growers' assns. The value and progress of the cooperative movement to date was referred to briefly by A. E. Sherrington, of Walkerton, and others. A committee was appointed to wait upon the Minister of Agriculture at Ottawa in the interests of the cooperative assns.: Harold Jones, Maitland; Elmer Lick, Oshawa; A. A. Wright, M.P., South Renfrew; E. D. Smith, M.P., South Wentworth; J. E. Armstrong, M.P., Lambton; and Peter McKenzie. The general cooperative committee for the year consists of 5 members: A. E. Sherrington, Walkerton; D. Johnson, Forest; Robt. Thompson, St. Catharines; W. H. Dempsey, Trenton; and J. E. Johnson, Simcoe.

The Ont. Hort'l Exhibition was the subject for some discussion, as one of the directors felt that the paying of \$2,000 for the Black Dike Band had not proven to be a good business proposition. With this one exception, the consensus of opinion was in favor of the band. It increased the educational advantages of the show. Through its presence, the exhibition has taken a forward step. Although \$2,000 was paid for the engagement, the band actually did not cost the show anything. It practically paid for itself. The deficit last year was not so large as the one the year before.

OFFICERS AND COMMITTEES

Officers for the ensuing year were elected as follows: Pres., Harold Jones, Maitland; v.-pres, Elmer Lick, Oshawa; sec.-treas., P. W. Hodgetts, Toronto; executive, the foregoing, W. H. Bunting, St. Catharines, and A. E. Sherrington, Walkerton. Transportation committee: W. H. Bunting and Robt. Thompson, St. Catharines; W. L. Smith, Toronto; D. Johnson, Forest; H. W. Dawson, Toronto; R. J. Graham, Belleville. Show committee: W. H. Bunting, Elmer Lick, A. W. Peart, P. W. Hodgetts. Directors on Board of Control of Fruit Expt. Stas.: A. M. Smith and Geo. A. Robertson, St. Catharines; W. T. Macoun, Ottawa. Director on Board of the Hort'l Pub. Co., Elmer Lick. Representatives on Fair Boards: London—A. O. Telfer, Ivan, and J. S. Scarfe, Woodstock; Ottawa—R. B. Whyte and A. A. Wright, M.P.; Toronto—W. H. Bunting and P. W. Hodgetts. No changes were made in the other committees.

Fruit Growers Divided

Emphatic protests against any semblance of a reciprocal tariff in fruits between Canada and the U. S. were made at a meeting of the fruit growers of the Grimsby-Winona district, on Jan. 18. The following resolution was presented and carried: "That this meeting of the fruit growers of the Niagara district desire to express our disapproval of the action of the directors of the Ont. Fruit Grs. Assn. in appointing a committee to confer with a committee of Michigan State fruit growers, with a view to arrange a reciprocal tariff on fruits and fruit products. The present tariff on fruits is too low when we consider the increasing expense in fighting the many insect enemies and diseases, the very high price of labor, the scarcity and high prices of fruit packages and the enormous cost of and loss in transportation. We can produce all the domestic fruits required for home consumption, and the home market should be protected for Canadian growers."

A largely attended meeting of the Niagara Peninsula Fruit Grs. Assn., held in St. Catharines on Jan. 19, showed that the fruit growers of the Niagara district are not all so opposed to the action of the Ont. Fruit Grs. Assn. in appointing a committee to confer with the growers of Mich., as are those of the Grimsby district. It was unanimously resolved: "That this association wishes to place itself on record as being in harmony with the Ont. Assn. in regard to meeting the Michigan growers. We, however, feel that this association of fruit growers can hold out no hope of any reciprocity in the matter of fruits between the two countries."

Officers were elected as follows: Pres., W. H. Bunting; v.-pres., F. A. Goring and W. C. McCalla; sec.-treas., C. E. Fisher; executive committee: R. Thompson, J. H. Brodrick, W. O. Burgess, Geo. A. Robertson, C. B. Hare, Alex. Muir, C. Lowery, F. Blaikie, Wm. Armstrong, C. Pettit, D. Pew, Wm. Henderson, S. H. Rittenhouse, George F. Stewart, Major Hiscott, Isaac Wismer, Carl Munro, F. Berriman, Wm. Gallagher, C. M. Honsberger, S. M. Culp, R. W. J. Andrews, R. F. Robinson, Geo. Brown, J. Carpenter and W. A. Emery.

Ontario Fruit Stations

The following letter was received recently from P. W. Hodgetts, sec., O.F.G.A., a member of the Board of Control of the Fruit Expt. Sta. of Ontario: "The names of the experimenters in New Ontario are S. B. Bisbee, New Liskeard, and R. Chapman, Judge. Neither of these men have been officially appointed experimenters; but some material was sent them last year, and I believe some more will be sent them this year, for them to test. The soil was so much in pockets in that country and seemed to be so much influenced by lakes and rivers, that the Board decided it was hardly wise as yet to settle anything definitely.

"The Minister of Agriculture has started a pioneer farm in Temiscamingue similar to the one started by Mr. Dryden at Dryden, Ont. It is likely that we will set out some hardy fruits there as soon as the place is properly cleared and the man appointed to look after it.

"The Board met on Jan. 7 and confirmed the appointment of J. L. Hilborn as fruit experimenter at Leamington, and of E. E. Adams as vegetable experimenter at the same place, subject to the approval of the Lieut.-Governor in Council. These gentlemen have already been conducting some work along this line, and have sent in reports for our report of 1906. It was decided to have Mr. Hilborn carry on some tests next year as to the protection of roots from winter-killing and the use of hardy plum roots for peach stock; Mr. Adams will be asked for certain suggestions along his special line of work. A special committee was appointed to outline work for, not only the new stations, but the older stations that had been testing varieties for the last ten years. The policy of the Board

will be not to give very much new work to those stations in the Niagara district, namely those of Messrs. Peart, Woolverton and Pettit, nor to the stations of Sherrington, Jones and Mitchell, until the Niagara District Station of Jordan Harbor is in running order and some idea of the scope of the work to be undertaken there is definitely settled. The strawberry station, as conducted by Mr. Stevenson, will be closed."

TO EXTEND AREA OF PEACH CULTURE

The secretary of Ont. Fruit Expt. Sta., Linus Woolverton, kindly furnished the following: "One of the topics discussed at the meeting of the Board of Control Ont. Fruit Exp. Sta., on Jan. 7, was the best method of withstanding the loss of peach trees from winter-killing of the roots, such as occurred in Essex in 1899 when tens of thousands of trees were destroyed. It was decided to have a quantity of peach trees budded upon hardy plum roots, on purpose for this experiment; and then to have these distributed for a thorough test. No doubt these would be much hardier than on peach roots, and also would succeed on clay soils where the peach root proves too tender. The secretary was ordered to make arrangements for the special propagation and distribution of such trees."

The Cooperative Associat'ns

The directors of the Ont. Cooperative Fruit Grs. Assn. met in Toronto on Jan. 8, and discussed matters that will tend to promote the interests of the cooperative movement in the province. The directors were unanimous in expressing the opinion that the organization of a provincial association last summer had been a good move. It was pointed out that the fruit trade in Europe can be increased to the advantage of the associations by getting into close touch with the retail merchants. The associations should have a man there to canvass the retail trade and all merchants who buy direct. It is probable that such a representative will be appointed before long. Mr. McNeill, Chief, Fruit Division, was present, and intimated that it would be well to induce the English buyers to place representatives in this country. Some members of the board concurred with this view.

Among the resolutions passed at the meeting was one dealing with the control of the San Jose scale, as follows: "That the Government be asked to aid in the suppression of the San Jose scale, in Kent county and in the other districts to which the scale is spreading, by holding meetings for the purpose of educating the growers on the nature of the pest and on the best methods of spraying for its control, by having the question of parasites taken up by the authorities at the O.A.C., and, further, to be more vigorous in enforcing the law respecting the fumigation of nursery stock; and that any work that is to be done this year should be done early and thoroughly, and that a copy of this resolution be forwarded to the Min. of Agri. for Ont."

A resolution was carried respecting the substitution of varieties by nurserymen, as follows: "That it is the opinion of this association that legislation should be enacted to require nursery firms to produce nursery stock that will be true to name, that the nurseries be held responsible for such stock, that a law be made to protect the grower by binding the nurseryman to give a written guarantee that will hold him liable for losses to growers, on account of negligence on the part of the nursery, and that a copy of this resolution be forwarded to the directors of the Ont. Fruit Grs. Assn. as a means of strengthening the action taken by them on this question at recent meetings."

It is just a year since I became a subscriber to THE HORTICULTURIST for the first time. In the future, I should not like to do without the magazine.—L. C. Clarke, Morden Man.

What Ontario Horticultural Societies are Doing

THAT the Toronto Hort'l Society is alive and intends to devote more energy and attention to matters pertaining to the interests of the society, was manifest at the annual meeting, held in St. George's Hall, Toronto, Jan. 9. A large attendance was present, and everyone was filled with ambition and enthusiasm to bring the name of the society more prominently before the public this year than ever before.

President H. R. Frankland was re-elected; George Muston was elected 1st v.-pres., and W. G. Rook, 2nd v.-pres. As the president expressed a strong desire that half of the board of directors be ladies, the following board was elected by ballot: Col. Delamere, John Chambers, Wm. Jay, R. J. Score and G. H. Mills, and Mrs. Abbott, Miss Blacklock, Miss Morse and Mrs. Kingdon.

PROGRESS IN PETERBORO

At the annual meeting of the Peterboro Hort'l Society, held in January, 1905, it was decided to discontinue the annual "Horticultural Show," which involved much labor and expense. The annual prizes called for an expenditure of about \$150, besides other considerable expenses for hall, music, attendance, cartage, etc. The entrance fees were trifling, and year after year the bulk of the prizes were taken by the same people. To take the place of the show, and to encourage and cultivate a taste for horticulture, we are now giving shrubs and bulbs, also a year's subscription to some good horticultural paper and prizes for the best kept lawns and gardens.

In 1905 we distributed to our members for the spring 600 tuberous begonias and 1,700 gladioli; and in the fall 5,000 tulips and 700 hyacinths, which, with the subscription to the paper, cost us about \$135. We also gave \$31 for lawn prizes. We found that the members were much better satisfied, and that our membership increased from about 90 to 115.

This year we have given to our members 500 peonies, 1,000 hyacinths and 1,300 daffodils, also the subscription to the paper, at a cost of about \$210, and lawn prizes amounting to \$31. Our membership has increased to 175. Quite a number of the names were sent in without solicitation. Our lawn prizes are divided into three classes: First, for grounds kept wholly by paid labor; second, for grounds kept partly by paid labor and partly by owner; and third, for grounds where owners do all the work themselves.

The prizes are the same in all classes, viz., first prize, \$5; second prize, \$3; third prize, \$2. We might say that in the last case we do not give the prizes to the finest places, but to the ones that we consider have accomplished the best results with the means at their disposal; for example, this year the first prize was given for a back yard, which the year before was nothing but a bed of tan bark. It had been transformed into a very pretty flower garden. The second prize was given to a lady who had changed a gravel bank outside her door into a beauty spot admired by all who passed her home. We feel that next year will see quite a number of little plots of ground improved and made attractive.

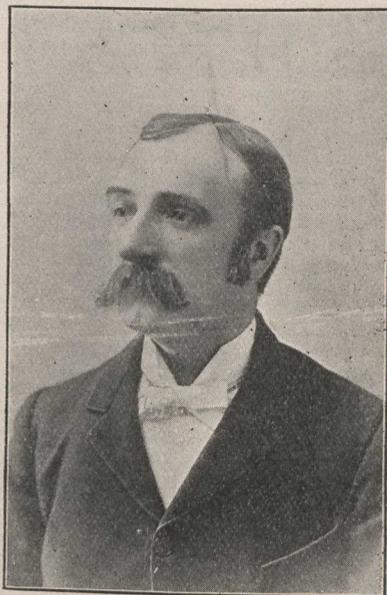
Our society also takes charge of the two small parks in the centre of the city. We receive a grant from the county council and one from the city. We have a park committee whose duty it is to meet in the spring and decide on what class of flowers shall be planted in the different beds, and also as to the improvements to be made during the year. The committee calls for tenders from the local florists, the contract being let to the lowest tenderer. The florist securing the contract has to supply the plants and set them out, and they remain his property, he being allowed to take them up on or about the first of October. In this

way the florist secures many valuable plants for cutting purposes and the society secures much better price.—W. L. Beal, Sec.

THE SOCIETY IN BOWMANVILLE

The annual meeting was held on Jan. 9, with President Jarvis in the chair. In the absence of Secretary Barber, Jas. Gale was appointed to act pro tem. The auditor's report showed the total receipts for the year \$232.50, and the expenditure \$220.24, leaving a balance on hand of \$12.32. The report was received and adopted.

As according to the new act relating to horticultural societies, one-third of the money must be spent in disseminating literature, it was



Mr. Jas. Gale

An active member of the Bowmanville Horticultural Society is Mr. Jas. Gale, editor of the *Bowmanville News*. He was secretary for five years and now is one of the directors. Although a man of business with many duties to perform, he takes great interest in horticulture and in the Bowmanville society.

decided to procure a copy of *THE CANADIAN HORTICULTURIST* for each member for 1907.

The election of officers resulted as follows: pres., R. Jarvis; 1st v.-pres., L. A. W. Tole; 2nd v.-pres., Jas. McLean; sec., A. Barber; treas., J. H. Jury; directors, F. Couch, Jas. Gale, J. Hellyar, J. Jeffery, S. Jackman, M. A. James, J. S. Moorcraft, A. Tait, A. S. Tilley; auditors, J. S. Moorcraft and J. A. McClellan.

British Columbia Letter

C. P. Metcalf, Hammond

The weather conditions this month are somewhat different from other years. The mercury has been down close to zero for 2 or 3 weeks; but, with considerable snow on the ground as at present, trees, plants, etc., will come through with very little injury. With regard to the planting of fruit trees, it would be difficult to recommend many varieties for planting in all parts of the province. The following, however, are being grown successfully in almost all the fruit growing sections: Apples—Yellow Transparent, Duchess, Gravenstein, Wealthy, King, Jonathan, Blenheim Orange, Grime's Golden, and Spy. King David and Delicious have been introduced from the American side and are highly recommended, but as yet nothing definite can be said about them. Yellow Newton Pippin and Spitzenburg are likely to be largely planted in some sections of the upper part of the province. Plums—English Damson, Bradshaw, Green

Gage, Grand Duke, Englebert and Yellow Egg. Of the prunes, the Italian, or Fellenberg, is the most popular, because of its productiveness and shipping qualities. Pears—Bartlett, Beurre Clairgeau, Beurre d'Anjou, Howell, Winter Nellis and Seckle. Sweet cherries—Royal Anne, Windsor, Bing, Lambert, Black Tartarian. Sour cherries—English Morello, Early Richmond, May Duke, Montmorency, Olivet. Peaches are being grown extensively in the upper part of the province, but the best varieties are not very well known yet.

These are a few of the varieties of fruits that can be grown successfully, but legion is the number that are being grown all over the province. This is one of the serious drawbacks to many of the older orchards. The newer orchards are being planted to only 5 or 6 commercial varieties that are known to succeed in their locality.

Of the raspberries, Cuthbert, Marlboro and Northumberland Filbasket yield very well; but Cuthbert gives the best satisfaction through the province. The yellow varieties are not planted except as novelties. The varieties of blackberries cultivated vary greatly in the different districts, and almost all succeed well. Snider, Kittatinny, Erie, Eldorado, Taylor, Lawton, and the Evergreen, or trailer, are among the best. In Strawberries, Excelsior for early crop, Magoon, Paxton and Splendid for local market and Wilson and Warfield for shipping have given the best satisfaction; but there are many new varieties being tried, some of which are very promising.

Apples for Quebec

At the winter meeting of the Que. Pomological Society, held at Knowlton, on Dec. 19 and 20, 1906, the following resolution was passed: "That, in view of the annoyance, disappointment, discouragement and great loss which the fruit growers of the province of Que. have experienced through the planting of trees untrue to name and unsuitable to the province, on account of the tenderness of the tree, the Quebec Pomological Society, which has for its object the advancement of the best interests of the fruit growers of this province, shall publish and have distributed to as many persons as possible a circular containing lists of varieties of fruits approved and recommended by this society; and, furthermore, that the provincial government be asked to bear the expense of such a publication and assist in the distribution of the same."

Apples recommended by the Que. Pomological Society for planting in the province of Que. are: For the district bounded on the east by Three Rivers and Sorel, and from these points west and south throughout the province—Summer, Yellow Transparent, Lowland Raspberry, Duchess; autumn, Langford Beauty, St. Lawrence, Wealthy, Alexander; winter, Fameuse, McIntosh, Wolf River; late winter, Canada Red, Scott Winter, Golden Russet, Baxter and Milwaukee.

For the district from Three Rivers and Sorel to L'Islet east and south—Summer, Yellow Transparent, Lowland Raspberry, Duchess; autumn, Peach of Montreal, St. Lawrence, Wealthy, Alexander; early winter, Fameuse, McIntosh, Wolf River; late winter, Scott's Winter, Canada Baldwin, Milwaukee, Baxter.

For the extreme north and for counties of Rimouski and Charlevoix, north and east—Summer, Yellow Transparent, Duchess, Charlamoff; autumn and winter, Wealthy, Patten, Greening, Hibernial and Longfield; crabapples.—Whitney, Marilton, Transcendent, Hyslop.

The large stock of peach trees recently advertised in *THE CANADIAN HORTICULTURIST* by Stone & Wellington, Toronto, is being disposed of rapidly. Growers should order now.

Nurserymen and Fruit Growers on Fumigation

THE question of fumigating nursery stock is one of increasing importance. San Jose scale is spreading in the province of Ontario. It will extend the area of its depredations if adequate steps are not taken to control it. The value of fumigation as a means of doing this is a point upon which there is a diversity of opinion. To learn the conclusions of practical men regarding the matter, THE CANADIAN HORTICULTURIST submitted the following list of questions to leading nurserymen and fruit growers: "Do you consider fumigation of nursery stock to be a necessity? Does it kill all the insects and scale that it is claimed to do? Can you cite instances where it has injured the trees? What do you think of dipping the trees in a lime-sulphur wash as a substitute for fumigation?" Here are some of the replies:

OPINIONS OF NURSERYMEN

"Do I consider fumigation of nursery stock a necessity?" writes E. D. Smith, M.P., Winona, Ont. "If it were not for the excessive cost of an absolutely thorough inspection, I should say the inspection, accompanied by the destruction of all trees on which scales were found, would be more satisfactory to the nurserymen. At any rate, it would to me, as our losses under that system would be nothing. The objection to depending upon that system, however, entirely, is that no inspection can be thorough, no matter what the cost. Inspectors have told me that no matter how often they may go over a block of trees, whether it is fruit trees or nursery stock, if scale is there at all they are never sure they have found the last one, and I can well believe this, as it is such an infinitesimally small thing it may be so easily hidden. The objection to fumigation lies chiefly in the delay that it causes in the handling of the trees, making it necessary that they shall be out of the ground greater lengths of time than they would be without it. An exhaustive experiment, conducted on my grounds by W. N. Hutt, formerly of the Dept. of Agric., Toronto, convinced me that there is no damage done by fumigation. Mr. Hutt was furnished by me with a large quantity of nursery stock of almost every variety of fruit trees and bushes. Some of these were not fumigated at all. Some were fumigated with the ordinary strength, some with double strength, and some with treble strength. Others were fumigated wet, as it was supposed that the damage was caused by fumigating the stock wet. These trees were planted in a row on my grounds, and the growth watched during the season. In the fall a certain synopsis was made of the results, and it showed that there were no greater losses in one lot than in another. The trees that were fumigated even with treble strength, and those that were fumigated wet showed no greater percentage of loss than those that were not fumigated at all. Consequently, although I was a firm believer up to that time that fumigation was disastrous, I could not but conclude that fumigation did no damage to the trees of itself. Nevertheless, we have had very much greater losses since fumigation started than before, and I can only account for it on the assumption that the trees were damaged by the greater length of time they are obliged to be out of the ground."

"As to dipping the trees in lime and sulphur wash," continued Mr. Smith, "it would be out of the question. The quantities that are handled and the disagreeable nature of the operation would make it impossible. I have often thought that something of that nature might be done, dipping in whale-oil soap, for instance. I am not sure whether this would damage the roots or not. If it would not damage the roots, a whole load of trees might in some mechanical

manner be lowered into a large vat, and, after becoming saturated, lifted and allowed to drain. Experiments would first have to be made as to whether these solutions would damage the roots or not. If so, then this method would be impracticable, and every tree would have to be taken by the roots and dipped individually, which would be too expensive and too nasty an operation."

C. W. F. Carpenter, Winona, Ont.: "The fumigation of nursery stock is a decided benefit to the trees in the eradication of the San Jose Scale or other scales. I cannot say definitely that it will kill every single scale, as I have not personally made any tests along this line. I do not think it necessary where there is not any scale in a radius of several miles of nursery stock, to have same fumigated, especially when inspectors have gone over the stock and pronounced it free from scale. There is no doubt, however, that fumigation is a thorough insecticide. The only stock that fumigation will injure are peaches and cherries, which in the last few years, since fumigation has been in force, have been injured from said procedure. It is almost impossible, especially in the case of sweet cherries, to get them fumigated in the spring in a perfectly dormant condition, as the buds of this stock swell very early. This is where the danger lies in fumigation. If trees are in a proper condition and perfectly dormant, there is not the slightest injury done to them, but a decided benefit, as it frees the tree from insects. Dipping trees in sulphur solution is almost out of the question from a nurseryman's standpoint. It would be possible for the planter to do this; but where we handle tens of thousands of trees yearly it would be impossible."

Joseph Tweedle, Fruitland, Ont.: "Fumigation does pretty thorough work, but the fumigated trees make a very feeble start into growth. I planted fumigated peach trees last spring, and they did not start to bud for 6 weeks to 3 months, although they were in an excellent condition when planted. I pointed this out to the nurseryman who paid me a visit in midsummer and examined my trees. He said he was very dissatisfied, as it was the general complaint; and he thought with myself that dipping with lime and sulphur is much better for the health of the trees, as this treatment has been so effectual in the orchard. It would be a wise move if the Government would legislate to make the change, or at least give us an option to use either method we might choose. I much prefer to use the lime and sulphur as a substitute for fumigation, it being just as effectual and much safer for the trees."

A. G. Hull & Son, St. Catharines, Ont.: "Fumigation of nursery stock is a wise precaution. It is effective when thoroughly done. No injury is done to apple, pear or plum trees, but cherry, peach and ornamentals are more or less injured when so treated. There is a difference of opinion, however, regarding the question. Some planters prefer stock that has not been fumigated. Dipping the trees in the lime-sulphur wash would be the surest and safest method. It would cover every doubt."

Morris & Wellington, Fonthill, Ont.: "Dipping trees in lime and sulphur wash would not be practicable for large nurserymen, as the short season for handling large quantities of stock would not give them time to perform the work thoroughly. Fumigating would, perhaps, injure peaches and other stock with tender roots, if applied full strength. To avoid this, we fumigate such stock in our frost-proof cellars during the winter, while the roots of the trees are heeled in the soil. In this way we have not noticed any injurious effects from fumigating."

Brown Brothers Company, Ltd., Browns' Nurseries, Ont.: "There can be no doubt as to

the necessity for fumigation where scale or other pests actually exist; but there is a great amount of work done in this line where there was not even a suspicion of a scale. There is no way of determining absolutely beforehand whether or not the work is necessary. Fumigation of stock coming from the States, which has already been fumigated and is so certified by certificate on the package or car, should be prevented. Could not provision be made for the acceptance of authentic foreign certificates of fumigation?"

"Certain classes of stock are much more susceptible to injury by fumigation than others; but it is difficult to see how the dose can be adjusted to suit certain stocks. Dipping trees in lime-sulphur wash seems to be an entirely impracticable process, especially where many thousands of trees are handled. It would be extremely disagreeable and dirty, on account of the nature of the mixture, and it would be difficult to procure men for such work, even if it were practicable. The present process, aside from possible damage to stock, is the most thorough, effective and expeditious."

WHAT FRUIT GROWERS SAY

A. O. Telfer, Ilderton, Ont.: "Fumigation of nursery stock should be certain death to all insects. The lime-sulphur wash might be safer but not as sure a remedy."

W. H. MacNeil, Oakville, Ont.: "I am of the opinion that dipping trees in the lime-sulphur wash to kill insects would also kill the buds."

Milton Backus, Chatham, Ont.: "For several years I have imported young stock from New Jersey, and its vitality has been badly injured by fumigation. Coming from there it gets fumigated twice. By the best American authorities the practice is considered injurious to young stock in particular. Dipping the trees in the lime-sulphur is preferable."

C. M. Honsberger, Jordan Station, Ont.: "Fumigation does not do all that is claimed for it, except at the risk of killing the trees or plants so treated. My opinion is that dipping in lime and sulphur before the trees are prepared for planting is preferable to fumigation."

F. S. Wallbridge, Belleville, Ont.: "The fumigation of nursery stock is more a question for chemical experts than for fruit growers. Fumigation can be, and sometimes is, overdone, the stock being subjected to a longer fumigation, with probably a greater quantity of fumigating material than should be the case. There would be no bad results from fumigation if it were done carefully and properly, but the danger is that it may not be attended to in that way. Fortunately we are not troubled with the San Jose Scale in this locality, and we do not know what effect fumigation has upon the scale. Dipping the trees in a lime and sulphur mixture is, I believe, far preferable to fumigation. The danger from the lime and sulphur is practically nil, and it certainly has a cleansing effect upon the trees. If the experts at the Experimental Farm consider it just as effective for the scale, it should be adopted without hesitation in lieu of the fumigation."

Geo. E. Fisher, Burlington, Ont.: "Fumigation is more reliable for destroying insect life than any other treatment. While it is not an absolute necessity, except with the San Jose Scale, it is always desirable if carefully conducted. No animal life can resist an exposure of 40 minutes in a gas-proof compartment containing gas from one-quarter of a gramme of cyanide of potash to each cubic foot enclosed, at which strength it is used in fumigating nursery stock. It is questionable, however, if the gas has any effect upon eggs. The proportions and quality of chemicals recommended by the Dept. of Agric. will give satisfactory

results if properly used. I have handled and planted trees which appeared to have been injured by fumigation. I have observed plum trees of bearing size in the orchard which were infested and fumigated during the fall, leafing out a week or ten days later than similar trees standing in the same orchard which were not so treated; but there was no permanent injury. All trees resist treatment better in the spring than in the fall. I think, however, that in nursery stock fumigation much of the injury attributed to the gas belongs to unnecessary

delay in getting the roots under cover. No pains are taken to hasten the work, and the tender rootlets are left exposed to the sun and wind until there is little chance for recovery. As the San Jose Scale is frequently found on the base of the trunk and larger roots, it would not be practicable to destroy it by immersion without putting the whole tree, roots and top, into the lime and sulphur mixture. This would be more trying to the fibrous roots than exposure to gas."

This did not meet with the approval of Prof. Hutt, who claimed that they had no ground work on which to base such experiments. He claimed that it would take 3 or 4 years' experimental work at Guelph to gain the necessary information. The vegetable men were of the opinion that if variety tests are of any value, practical growers could easily give the information regarding standard commercial varieties that could be tested against the novelties that are disseminated by reliable dealers.

"The question was raised by Mr. Holterman as to whether or not the vegetable men would be dealt with as an association or as individuals in the event of the union taking up cooperative experiments. Prof. Hutt replied that the only way he could treat with the vegetable growers would be as individuals. He said that when the experiments were decided upon, (which might or might not be those suggested by the growers), they could, if they wished, take part as experimenters, with the understanding that they should report results to the experimental union. It appeared to the delegates that the experiments would not be conducted with a view to their usefulness to the growers, and that those in charge of their directions do not appear to have any practical knowledge of the needs of the commercial vegetable grower. They felt, also, that were experiments conducted by the growers on lines suitable to the union, it would simply place the O.V.G.A. in the position of a feeder for the union. Experiments sent out, as intimated by the union committee, would be of no material benefit to practical growers. The delegates, therefore, told the committee that they thought that the commercial grower would take very little interest in the experiments."

A PLAN OF WORK

The report, in conclusion, suggested that the O.V.G.A. outline and conduct a series of ex-

Cooperative Experiments in Vegetables

THE following is a portion of the report of the committee appointed by the Ont. Veg. Grs. Assn., at the request of the Ont. Agric'l and Exp'l Union, to attend the meeting of the union held last Dec. in Guelph. This report will be presented to the bd. of directors of the O.V.G.A. It is published to give members of the assn. an opportunity to consider the suggestions made. The report, in part, is as follows:

"At a meeting of the Ont. Veg. Grs. Assn., held in Toronto previous to the convention in Nov., a communication was read from Geo. A. Robertson, pres. of the Ont. Agric'l and Exp'l Union, asking that some of our members attend the annual meeting at Guelph with a view to possible cooperation. At the convention, the directors appointed a committee for the purpose composed of Pres. F. F. Reeves, Humber Bay, W. A. McCalla, St. Catharines, T. Delworth, Weston, and J. Lewis, Hamilton. Messrs. Reeves and Delworth attended the experimental union meeting on Dec. 10 and 11; the other members

of the committee were unable to be present. During the sessions of the union, there appeared to be a misapprehension regarding the position of the delegates from the O.V.G.A. Some members, apparently, wished to give the impression that the O.V.G.A. had applied to the union to assist the vegetable growers in experimental work. This was not so.

The union appointed a committee to meet with Messrs. Reeves and Delworth with a view to considering what could be done. The committee comprised Prof. Hutt, and Messrs. Holterman and McMeans. This committee asked the vegetable men to suggest lines of work that could be carried on. The delegates told them that their visit was only in response to the invitation of the president of the union and that they had no instructions from the directors of the O.V.G.A. regarding the lines of work that the association would like to have undertaken. The delegates suggested, however, that it would be profitable to take up variety tests with the following vegetables: Carrots, beets and beans.



Carolina Poplar

☞ This tree can be recommended for growing in city or country; it thrives equally well on sandy or heavy soils, and it is a vigorous grower under conditions which would kill most trees. For shade, windbreaks, or ornamental uses it is unsurpassed. Send for our illustrated pamphlet, giving full information of this useful tree. We are now booking orders for sizes 6 to 8 feet.

E. D. SMITH

The Helderleigh Nurseries

Winona, Ontario

WE HAVE A FEW VACANCIES ON OUR STAFF FOR AGENTS
OF UNQUESTIONABLE ABILITY AND HONESTY

Mention The Canadian Horticulturist when writing

periments by itself. Its recommendations are as follows: "That, inasmuch as no way seems to be open to make the work of the experimental union of more value to vegetable growers, that this ass'n. take such steps as may be necessary to conduct a series of experiments in vegetable growing among its own members, and that the direction of such shall be under the management and supervision of the board of directors."

The following resolution is submitted in the report to serve as a basis upon which to outline the work: "That each local branch be requested to appoint from among its members one or more persons—the number to depend upon the membership—to conduct experiments for that district. Each experimenter to be supplied by the assn. with the necessary seed or fertilizers, or both as the case may be, and paid a sum, to be decided upon, for conducting the experiments and for sending a written report of same to the sec. of the assn." The report suggests also that about 15 experimenters would cover the field for the 10 local branches of the assn., to be distributed as follows: Ottawa, Kingston, Toronto, Hamilton, St. Catharines, Brantford, Chatham, Sarnia, Tecumseh, and Scotland. It is suggested, also, that, if funds will permit, some competent person should be appointed to visit these experimental plots at some time during the season to inspect them and to send in a written report of their condition."

An excellent little book entitled "Spraying for Profit," by Howard Evarts Weed, is offered for sale by the Horticultural Publishing Co., for the small sum of 15 cents. It should be in the hands of all fruit growers and gardeners. Practical information is given regarding fungous diseases and insects. The materials used in spraying, as well as spray pumps and outfits, are dealt with in a manner that will be welcomed by practical men. A large part of the book is devoted to a summary of the leading pests of fruit trees, vegetables and ornamental plants

with directions for combatting them. Send for a copy of this interesting book.—Address Manager Book Dept., THE CANADIAN HORTICULTURIST, Toronto.

The successful grower is he who is continually looking forward. Are you contemplating purchasing new supplies this year? Don't forget

to first get the large, liberal catalogs our advertisers are so glad to send you. The difference in the price of the articles advertised in this paper, and what you will buy from your local dealers, will save you, often, a tidy little sum. Be sure and mention THE HORTICULTURIST, as this insures the protection of our Protective Policy, as outlined on the editorial page.

SEND FOR OUR CATALOGUE

It contains everything of the newest and best for the *Farmer*, the *Market Gardener* and the *Amateur*

GRAHAM BROTHERS

53 & 55 Sparks Street
OTTAWA

*High-Grade
Seeds,
Plants,
Tools,
Poultry
Supplies,
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Work*

*The Latest
Novelties in
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EWING'S RELIABLE SEEDS

And Everything for

GARDEN, GREENHOUSE,
FARM AND LAWN

One cannot tell much about seeds' reliability by their appearance.

"The Harvest Test is the Only Test."

EWING'S SUPERIOR SEEDS

Are the result of many years of careful selection, and in the ground they can be relied upon to produce bigger and better crops. Thousands of planters all over Canada can vouch for this fact. Our 1907 Catalogue is more complete than ever and we want to mail you one. Send along your address.

WILLIAM EWING & CO

SEEDSMEN

142-146 McGill Street, Montreal

Mention The Canadian Horticulturist when writing

Opinions on the Tariff

The following letters on the new tariff were received by THE CANADIAN HORTICULTURIST too late for publication in the last issue. A. W. Peart, of Burlington, Ont., wrote as follows:

"In 1904, the value of fresh fruits such as are grown in Canada, imported from the U.S., was \$446,474. For the same year the value of fresh fruits exported from Canada to the States was \$171,368. In other words the balance of trade in fresh fruits was against Canada, \$275,106. The new tariff in fruits is practically the same as the old. Pears, instead of an ad val. duty of 20%, are now 1/2 ct. a lb. Plums are now 20c. a bu. instead of 25% ad val. I think that these changes will be to the advantage of the fruit grower here, as they do away with any temptation to undervalue.

"So far as competition in our early markets is concerned, we are in no better position. The later grown American strawberries, for example, will meet and displace our early berries in our own markets until the export margin of profit is wiped out by a failing market.

"In 1904 we also imported 816,000 bunches of bananas, valued at \$809,084. This fruit must in a measure displace the consumption of our native fruits, especially our early pears. It is a question whether the time has not come to place a duty, say, of 10c. a bunch, on bananas."

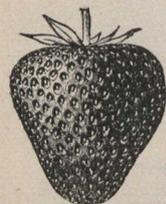
E. D. Smith, M.P., Winona, Ont.: "The

duties are practically the same as before, with 1 or 2 exceptions. Pears, instead of an ad valorem duty of 20%, are now covered by a specific duty of 1/2 ct. a lb. Plums, which were formerly brought in under an ad valorem duty of 25%, are now changed to 30 cts. a bu. Both of these changes are a serious blow to the fruit growing industry of Ont., and will no doubt stimulate trade with California fruits, particularly with plums. The fruit growers ask for a specific duty of 1c. a lb., which is low enough."

This letter was received recently from Robt. Thompson, St. Catharines: "In reply to your question as to what the fruit growers in this section thought of the action of the Michigan Hort'l Society, asking for a committee of growers to meet them and talk over reciprocity in fruit, I would say that while the general tariff policy of Canada is as it appears now to be, fixed for some years to come, the fruit growers would be very foolish to go into reciprocity with the U.S., unless they received advantages that do not now appear to be forthcoming, or unless other lines of industry would be included. At present baskets are protected to the extent of 25%, basket fasteners the same, and, in almost every line, their raw material is taxed. At the same

time, they believe that the Ont. Fruit Growers' Assn. acted wisely in agreeing to meet their advances in a friendly spirit, and in appointing a committee to meet and discuss the situation. This was the only dignified and courteous course to pursue. The growers around St. Catharines were surprised to see the attitude and action taken by the Grimsby growers in discussing and taking action on a matter on which they only had an incorrect report taken from the newspapers. Had they waited and enquired from the proper official source, they would have found the motion to have been passed unanimously and perfectly justifiable too in the mind of every reasonable grower."

The following letter was recently received by W. H. Brand of Jordan Station, Ont., who advertises on another page, Wallace sprayers. "Target Brand" scale destroyer and Keewane water systems: "I purchased a Wallace Power Sprayer last spring for the Lincoln Co. Industrial Home. It works perfectly on trees, grape vines, potatoes and so on. I consider it the best all-round sprayer on the market to-day."—A. N. Zimmerman, Inspector, Industrial Home, Jordan, Ont.



38 Leading Varieties

of STRAWBERRY and CANE BERRY PLANTS

7 Varieties SEED POTATOES

Illustrated Catalogue Free

JOHN DOWNHAM, Strathroy

THE WILLIAMS STRAWBERRY

The Great Commercial Strawberry of the Niagara District

It is quite safe to say that more Williams Strawberries are grown in the Niagara District than all other varieties combined. It is certainly the kind for best results over a wide range of territory and adapts itself to a variety of soils. Be sure and get plants of strong vitality and true to name. I am now booking orders for Spring shipment at \$4.00 per 1,000, 50c. per 100. Can also supply limited quantities of other standard sorts at reasonable rates.

THE CARLETON FRUIT FARM

WM. H. BUNTING

ST. CATHARINES, ONT.

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EXPERIMENT



Get the habit of ordering
**Trees, Ornamentals
Shrubs, Roses
Small Fruit Plants**
etc.

Direct from the Central Nursery

We have been shipping our goods to satisfied customers for 26 years, and why? Because they get good thrifty well-grown stock that grows true to name and O.K. Cut out the middle men's profit. Mail your next order, or write for prices direct to us for profit and satisfaction.

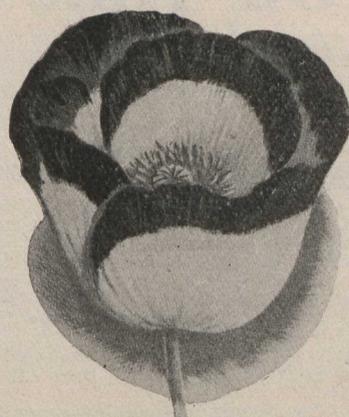
P.S.—I might say that those 1,450 trees I got from you last spring did EXTRA well.—D. T. White

A. G. Hull & Son

ST. CATHARINES, ONTARIO



Mention The Canadian Horticulturist when writing



Admiral Poppy

**Bruce's Regal
Seeds and Plants**

RENOWNED FOR THEIR RELIABILITY SINCE THE ESTABLISHMENT OF THIS BUSINESS IN 1850

ADMIRAL POPPY

(Papaver Paeoniflorum)

This new single paeony-flowered Poppy is of surprising beauty. It is characterized by large round smooth-edged flowers of glistening pure white, with a broad band of brilliant scarlet around the top, occupying a full quarter of the corolla. These two colors form an extremely telling contrast, similar to that seen in the variety Danebrog. Planted in groups my new Admiral Poppy, which comes nearly true from seed, produces a magnificent effect. Packet, 15c.

ASTER, QUEEN OF SPAIN

This new variety of Giant Comet Aster is a beautiful primrose, turning to blush color, and quite equal to the Victoria Aster, Miss Roosevelt, which caused such a sensation in the floral world by its unique and delicate color. The Queen of Spain is most valuable on account of its color and for cutting purposes. Packet, 20c.

NOW READY, OUR HANDSOME 96 PAGE CATALOGUE OF SEEDS, PLANTS, BULBS, POULTRY SUPPLIES, GARDEN IMPLEMENTS, ETC. SEND FOR IT. FREE.

John A. Bruce & Co., Hamilton, Ont.

SEED MERCHANTS

ESTABLISHED 1850

Mention The Canadian Horticulturist when writing

POULTRY DEPT.

Conducted by
S. Short, Ottawa

While, perhaps, rather early to begin hatching operations, it is not too soon to think over and plan the methods to be used in breeding in the coming spring. The hatching season is the most important time of the year to all interested in poultry. The veteran fancier has his pens mated up, and is looking forward to hatching and rearing stock that will win the highest honors in the show-room and thereby prove the owner's skill and judgment as a breeder. The beginner also looks around with a view to starting into the poultry business, his main idea being to hatch a large number of chickens. In fact, in a month or two, all of us will want lots of chicks, and the problem is how to get them with the least trouble and expense. The solution of that problem is this: Get an incubator.

INCUBATION

Up to last year experts agreed that if over 100 chicks were to be hatched an incubator should be used; if under that number, hens would be the most satisfactory. I have now no hesitation in saying that if 50 chicks are to be hatched, the incubator is the better

method for many reasons. Incubators are now made so perfectly that eggs that will hatch under a hen will hatch in the incubator. The machine can be kept in the basement or in an unused attic, or in any room free from draughts and excessive cold. Of course, the colder the room, the more oil will be used to keep the temperature up. With all machines, the fullest and most complete directions are sent; and it is not unusual for beginners to have larger hatches than others, simply from the fact that they follow the printed directions more carefully than those who, by having experience, feel that they fully understand the care of the machine.

There is one point that I have heard several experts agree upon: on the last day of hatching the temperature should be 104, or even 105 degrees, rather than 103, which is the temperature recommended by most manufacturers. The chief complaint against the incubator is that too great a percentage of chicks die in the shell the last day. By raising the temperature to 104 better hatches have resulted. The only smell from the machine is from the lamp, which can be almost entirely overcome by trimming frequently and using the best oil.

THE SITTING HEN

The most aggravating and sometimes one of the dirtiest of creatures is the sitting hen. When hens are used for hatching they need a pen all to themselves. They have to be coaxed to sit in any place but that to which they are

accustomed. If they do not break an egg or foul their nests, it is the exception, not the rule; and there is no more disagreeable or disgusting work than to have to wash the eggs and prepare a clean nest. After the chicks are hatched, the mother frequently kills from one to three by stepping on them in the nest. If vermin destroyer has not been used freely during the time of sitting, the chicks are infested with lice from the mother and have to be carefully treated for that pest or they will not thrive. Some hens sit on their eggs for 10 days or so and then desert them. All this can be avoided by using an incubator.

Perhaps a word of advice as to where to buy the machine may not be out of place. Of course there are a great many incubators of different makes on the market, both Canadian and American, and all claiming special merits. There may be poultry keepers in your neighborhood who are using incubators, and it might be best to profit by their advice; but I know quite a number that have ordered machines from American firms, direct from the makers, and invariably they (the buyers) have had to wait an unnecessarily long time before getting their machine, especially if ordered during the hatching season. The machine is usually shipped by freight, so that time will be saved by buying in Canada and near home, where you can reach the makers by mail in a day and get just as good an article. You also have the satisfaction of patronizing home industry.

Just a word to intending purchasers. Breeders at this season are glad to dispose of their surplus stock at fair prices, which means that good birds can be bought now for about half the price of what they will cost next March.

Books that Interest

It is interesting to note the manner in which the readers of THE CANADIAN HORTICULTURIST take advantage of our book department. Subscribers who want to establish a small, but practical, library for themselves are securing complete sets of books on their particular hobby.

Many of our readers, however, already possess comfortable libraries. These are adding complete departments to their library by securing books on horticultural subjects listed in our catalog.

If you are a member of a horticultural society it is to your advantage that you have books on your reading table that treat gardening and floral matters in a sound, practical manner. Such books as "Hedges, Windbreaks, Shelters and Live Fences," 50 cents; "Home Floriculture," \$1.00; "Garden Making," \$1.00; "Plant Culture," \$1.00; "The Window Flower Garden," 50 cents, and similar works should be in the homes of every gardener and flower lover.

Fruit growers would find the following books indispensable if once they obtained them: "Fruit Harvesting, Storing, Marketing, etc.," \$1.00; "Principles of Fruit Growing," \$1.25; "Successful Fruit Culture," \$1.00. These are but a few of the valuable books we have listed in our free catalog. Send for it. We will send any of the above books on receipt of price.

Creighton Poultry Yards

High Grade Stock possessing utility and exhibition qualities

Barred Plymouth Rocks and White Wyandottes

Cockerels of either breed, \$2.00 each

S. SHORT, PROP. OTTAWA, ONT.

Mention The Canadian Horticulturist when writing

Let Me Sell You a Chatham Incubator — On Time

Do you know there is big money in raising poultry? Do you know there is more money in running a good incubator than in almost anything else you can do for the amount of time and trouble it takes? Do you know my incubator will pay you a bigger profit than any other thing you can have on your place?

Well, all these things are true, and I can prove it. Thousands of people all over Canada have proved it every year for the last five years.

I want to quote you a price on my Chatham Incubator, —sold ON TIME. I want to send you my Chatham book. This incubator book is free— I'll send it to you for just a postal card. It tells you a lot you ought to know about the Poultry business—it tells you how to make money out of chickens—it tells you how my Chatham Incubator will make you more money than you can make with hens—far more, and with less trouble.

This book tells you how my Incubators are made—why they are the best ever invented—and why I sell them ON TIME and on a 5-Year Guarantee.

My Company has been in business in Canada for over 50 years. We are one of the largest wood-working factories in the country. We also operate a large factory at Detroit, Mich. We have the Incubator and Brooder business down to a science.

Chatham Incubators and Brooders will make you money, for a Chatham Incubator will hatch a live, healthy chicken out of every fertile egg put into it, in 21 days.

Will you write for my book today? Do it now while you think of it. Just say on a postal "Please send me your Incubator Book"—that's all. Address me personally.

Manson Campbell

President

The Manson Campbell Co., Ltd.
Dept. F59, Chatham, Ont.

NOTE— I carry large stocks and ship promptly from branch houses at Calgary, Alta., Montreal, Que.; Brandon, Man.; Halifax, N. S.; Victoria, B. C., and factory at Chatham.



Guaranteed Five Years



John B. Smith & Sons

Limited

Cor. Strachan and Wellington Aves.

TORONTO



Manufacturers
.. of ..

LUMBER

LATH

SHINGLES

DOORS

SASH

BLINDS

SILOS, ETC.

Clear Cypress for Greenhouse Work
Mention The Canadian Horticulturist when writing

New Catalogs

The new catalog and circulars for 1907 being sent out by Wm. Rennie Co., Ltd., Toronto, give evidence that this enterprising firm still keeps up to its high standard of excellence. This company now has branches in Montreal, Winnipeg, and Vancouver, and so is in a position to fill, quickly and satisfactorily, orders from all over the Dominion. The catalog contains a complete list, with illustrations, of seeds, plants, bulbs, shrubs, etc., for the farmer, gardener and florist, besides tools and poultry supplies. The safe arrival of all packages ordered is guaranteed. A list of gardeners seeking positions is kept, enabling this firm to fill many vacant situations. This catalog should be secured.

The catalog recently published by John A. Bruce & Co., Toronto, should be in the hands of every agriculturist in Canada. It contains nearly everything of value to those engaged in agricultural and horticultural pursuits. New varieties and novelties are treated of conservatively. Connection is held with the best growers and the greatest ease is exercised in the selection of stock. This company has been in existence over 50 years, and it has acquired a reputation for honesty and reliability that deserves well of the public.

The well-known stock handled by the Steele, Briggs Seed Co., Toronto, is fully described and illustrated in their new catalog. Seeds, plants, bulbs, everything grown from the soil, are enumerated for the benefit of the grower. At the recent Ont. Hort'1 Exhibition in 52 classes of vegetables, 143 prizes went to the products of Steele, Briggs' seeds. This is a noteworthy victory in an open competition. The public are cordially invited to visit their establishment and make a personal inspection of the care taken to maintain the highest standard of quality. A special western edition of their catalog has been published giving much information regarding garden crops in the prairie west.

FOR SALE AND WANT ADVERTISEMENTS

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.

LANDSCAPE GARDENING—Plans drawn to scale for laying out and planting parks, cemeteries, public or private grounds. Work supervised. C. Ernest Woolverton, landscape architect, Grimsby.

BE INDEPENDENT—We have a proposition that will appeal to all men interested in horticulture and who wish to be their own employees. Write immediately.—THE CANADIAN HORTICULTURIST, 506-7-8 Manning Chambers, Toronto.

NO MORE BLIND HORSES For Specific Ophthalmia, Sore Eyes, BARRY CO., Iowa City, Iowa, have a cure. Moon Blindness and other

IF YOU HAVE APPLES OR POULTRY TO CONSIGN

we can handle them for you to advantage. If apples are in car lots, write us and we can sell them for you f.o.b. your station

THE DAWSON COMMISSION CO. Limited
Cor. West Market and Colborne St.
TORONTO ONTARIO

Wouldn't You Like to Grow Some of the Old English Flowers in your Canadian Garden

IF SO

SUTTON & SONS

READING - ENGLAND

can supply you with varieties that are easily raised from seed, viz.—

SUTTON'S

- Asters \$2.50
Collection of 11 varieties
- Stocks, Ten-week . . . 1.00
Collection of 5 varieties
- Primulas 2.50
Collection of 6 varieties
- Pansies75
Collection of 6 varieties
- Nasturtium, tall or dwarf .50
Collection of 6 varieties
- Balsams 1.00
Collection of 6 varieties
- Zinnias75
Collection of 6 varieties
- Poppies, annual 1.50
Collection of 12 varieties
- Sunflowers50
Collection of 6 varieties
- Marigolds75
Collection of 6 varieties
- Godetias75
Collection of 6 varieties
- Clarkias50
Collection of 8 varieties
- Chrysanthemums, annual .75
Collection of 9 varieties

FLOWER SEEDS VALUE \$2.50 MAILED FREE TO CANADA

Sutton & Sons
Reading, England

Mention The Horticulturist when writing

More Than a Salary

To increase our circulation we will allow a commission on all new subscriptions obtained to The Canadian Horticulturist which in the aggregate will average up to a very comfortable sum. The work is pleasant because you are your own employee, have your own hours, and in fact are in business for yourself. To such as become connected with us we have an exceptionally good offer to make. Write for particulars now.

CIRCULATION MANAGER

The Canadian Horticulturist

506-7-8 Manning Chambers
TORONTO

Windsor Salt

The Salt-Royal of all Saltdom.

Each tiny crystal perfect—all its natural strength retained.

For cooking—for the table—for butter and cheese. Pure — dry — delicious—evenly dissolving. At all grocers'—bags or barrels.



117

Gladiolus Bulbs

Groff's World's Fair Collection
Groff's Pan-Am. Ex. Collection
Groff's New Named Varieties

Also America, Princesps and others
CANNAS, a large stock of the best varieties
DAHLIAS, many kinds. Write for Catalogue.

John A. Campbell, Simcoe, Ont.

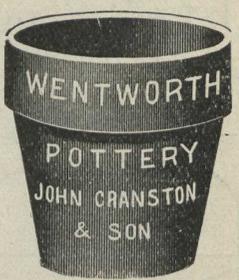
One of the neatest and best prepared catalogs that reaches our office each year is that of Stone & Wellington, Fonthill Nurseries. The one for 1907 is now being published and will be replete with lists and descriptions of varieties of fruit trees, shrubs and ornamental plants. Of particular interest will be the extensive descriptions of varieties and the directions for planting and cultivation. The Fonthill Nurseries are well known and reliable. Readers of THE CANADIAN HORTICULTURIST should have copies of their catalog.

The catalog that is issued by the Helderleigh Nurseries is always well gotten up. It contains descriptive lists of all the varieties of fruits that are worth growing in this country. As a large commercial fruit plantation is operated in connection with the nurseries, an excellent opportunity is afforded for testing the worth of new varieties before they are offered for general distribution. In the ornamental department of the catalog are listed the leading species and varieties of deciduous trees, evergreens, deciduous, climbing and evergreen shrubs, roses and hedge plants.

The Central Nurseries of A. G. Hull & Son, St. Catharines, Ont., have issued their annual catalog, presenting and describing their stock of trees, shrubs, roses, vines, etc. Situated where they are, these nurseries have all natural advantages in the growing of choice stock. Special attention is given to the supplying of hardy trees and plants that grow and do well in the west. Those interested should at once secure a catalog.

The catalog of the Buchanan Nursery Co., St. Charles, Man., has arrived at our office. It contains a comprehensive list of fruit, forest and ornamental trees, small fruits, shrubs, roses, perennial flowers and so forth. This company has proven that nursery stock can be grown

Wentworth Pottery



Standard Flower Pots, Fern Pans, Hanging Baskets, Cut Flower Jars and all Florists' Supplies.

Mail orders given prompt attention.

JOHN CRANSTON & SON, Hamilton, Can.

Mention The Canadian Horticulturist.

DOMINION NURSERIES

ESTABLISHED 1860

Fruit and Ornamental Trees
Shrubs and Vines

**WE HAVE NO AGENTS!
WE SELL DIRECT!**

Catalogue for 1907, just out, mailed on application

The Smith & Reed Co.,
ST. CATHARINES - ONTARIO

You Want First-Class Peach Trees

~~~~~

CANADIAN GROWN  
AT REASONABLE PRICES

WE HAVE THEM—WRITE FOR CATALOGUE AND PRICE LIST

We grow a general line of fruit and ornamental stock and guarantee delivery in first-class condition.

~~~~~

Pelham Nursery Company

Nurseries—Pelham Township

Offices—49 Wellington Street East, Toronto, Ontario

Please Address all Correspondence to Our Offices

Mention The Canadian Horticulturist when writing

SEEDS

Producing the most satisfactory results in the harvest
ARE WHAT WE SELL

Our Vegetable Seeds are grown from selected stocks and are used by the most critical Gardeners and Truckers in this Country.

Our Flower Seeds are noted for their striking colors and large bloom.

Sutton's Specialties Always on hand.

Descriptive Illustrated Catalogue
Mailed Free on Application

DUPUY & FERGUSON

38 Jacques Cartier Sq., Montreal

Mention The Canadian Horticulturist when writing

GREGORY'S SEEDS

FREE Our catalog is rich with information for the guidance of farmers and gardeners. It has been a great help to thousands—has been the means of turning many a failure into success. The great variety of vegetable and flower seeds include the best of the old standard and such new kinds as have proved of value by actual test.

J. J. H. GREGORY & SON,
Marblehead, Mass.

GREGORY'S SEED CATALOGUE FOR 1907

USE FOSTER'S POTS

STRONG DURABLE LIGHT

THE BEST MADE FOSTER'S STANDARD POT

POROUS AND SMOOTH

Drop us a post card for Catalogue and Price List.
The Foster Pottery Co., Limited
HAMILTON - ONTARIO

KIL=⊙=SCALE

The original, most popular and most effective SCALE DESTROYER on the market. KIL-O-SCALE combines the two infallible remedies—SULPHUR AND PETROLEUM. Beware of Oil Solutions that will SEPARATE, endangering the life of the tree. Do not be persuaded to buy inferior imitations. Write for circular, telling what users have to say about KIL-O-SCALE. Our 1907 Seed and Implement Catalogue free. Write for it.
GRIFFITH & TURNER CO., 207 N. Paca Street, Baltimore, Md.

successfully in the west. Many difficulties had to be overcome in getting a fair start in that section of Canada, but now the nursery is capable and ready to supply the western populace with their wants. The growth of the business is evidence of the worth of stock and fairness of price.

The nursery stock of J. W. Wismer, Port Elgin, Ontario, is set forth with descriptions in his new catalog. It includes all the tested and well-known varieties, besides such new ones as prove acquisitions. The climate of Port Elgin is very rigorous, and trees grown there become well hardened and able to stand and thrive in the coldest part of the country. The numerous testimonials printed prove the satisfaction felt by the buying public.

The catalog for 1907 of D. M. Ferry & Co., Windsor, Ont., is well arranged and contains a complete list of the various varieties of seed, plants, bulbs, etc. Their large extent of warehouses and fields are entirely modern in their equipment, so that the best and most up-to-date stock can be supplied.

One of the prettiest and most tasty catalogs that has come to our office this year is the spring issue of Arthur T. Boddington, seedsman, New York City. The illustrations are especially nice. All kinds of root, vegetable and flower seeds, bulbs, plants, etc., are described and offered at reasonable prices.

The vegetable and flower seed catalog of Jas. J. H. Gregory & Son, Marblehead, Mass., contains a full enumeration of these commodities. There is a large experimental department in connection with the establishment where new varieties are grown and tested, so that only the most worthy are listed in the catalog.

The fruit book and catalog of Chas. A. Green's Nursery Co., Rochester, N.Y., presents a complete list of trees, vines and plants. This company endeavors to maintain a high standard of excellence in its stock.

"Great Crops of Strawberries and How to

Profit Producing Fertilizers

DO YOU KNOW

THAT WORN-OUT LANDS MAY BE MADE PRODUCTIVE AND PROFITABLE BY THE JUDICIOUS USE OF THE RIGHT KIND OF FERTILIZER?

NOW IF YOU HAVE A PIECE OF LAND THAT WONT GROW ANYTHING BUT WEEDS, TALK WITH US ABOUT IT AND LET US SUGGEST THE RIGHT FERTILIZER

WE FEEL VERY SURE THAT WE CAN SHOW YOU HOW TO USE FERTILIZERS WITHOUT GREAT EXPENSE, SO YOUR LAND WILL PAY

CONSULT US FREELY IT IS OUR BUSINESS TO KNOW ENQUIRIES FREELY ANSWERED AGENTS WANTED FOR TERRITORY NOT TAKEN UP

THE W.A. FREEMAN CO. LIMITED
HAMILTON ONTARIO

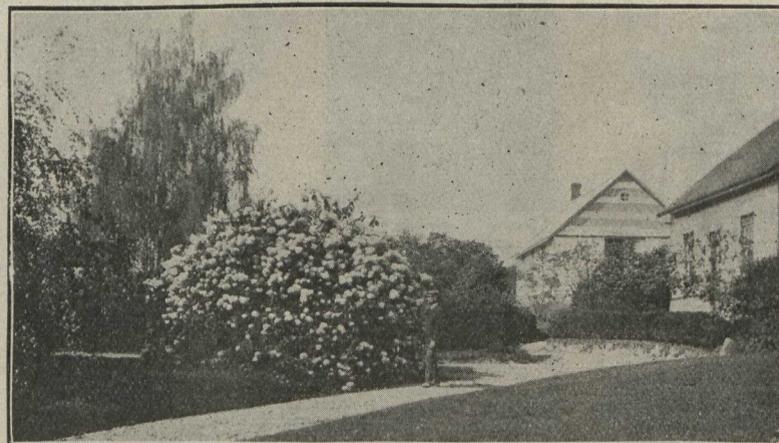
THE FONTHILL NURSERIES

"Canada's Greatest Nurseries"

NOW IS THE TIME TO ORDER FOR SPRING PLANTING

Hardy Canadian Grown Stock, Clean and Healthy and True to Name

Commercial Apples
Pears for Profit
European and Japan Plums
Peaches, Extra Fine



Asparagus, 3 year Roots
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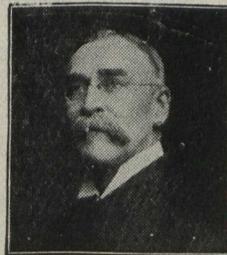
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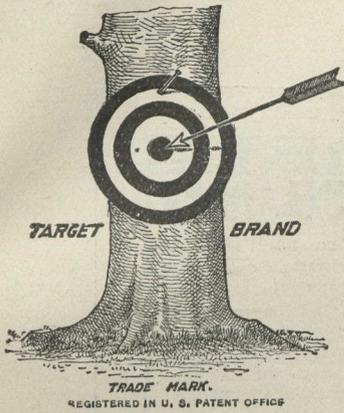
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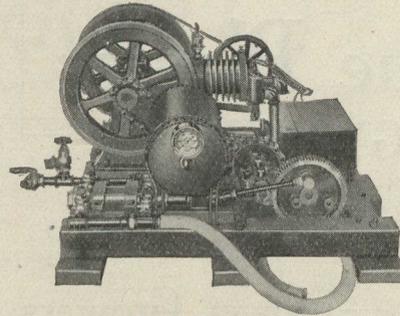
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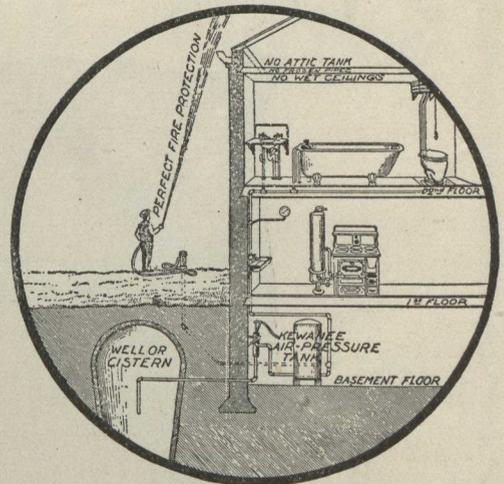
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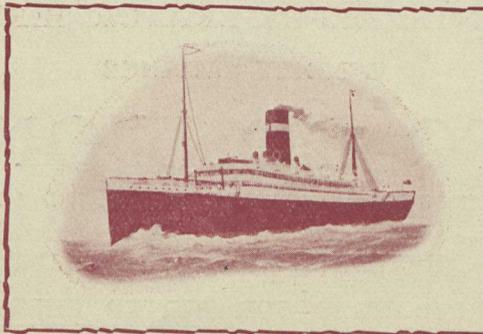
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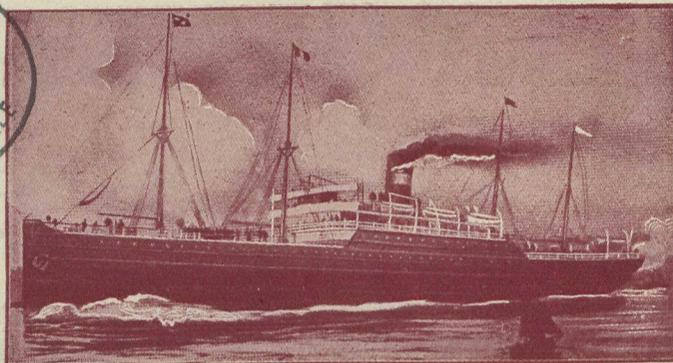
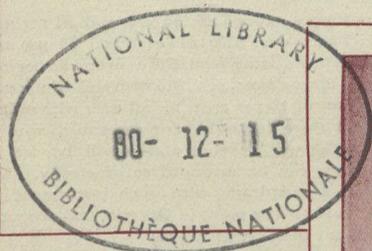
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