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# THE CANADIAN HORTICULTURIST

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## MARCH

The stormy March is come at last,  
With wind, and cloud, and changing skies;  
I hear the rushing of the blast,  
That through the valley flies.

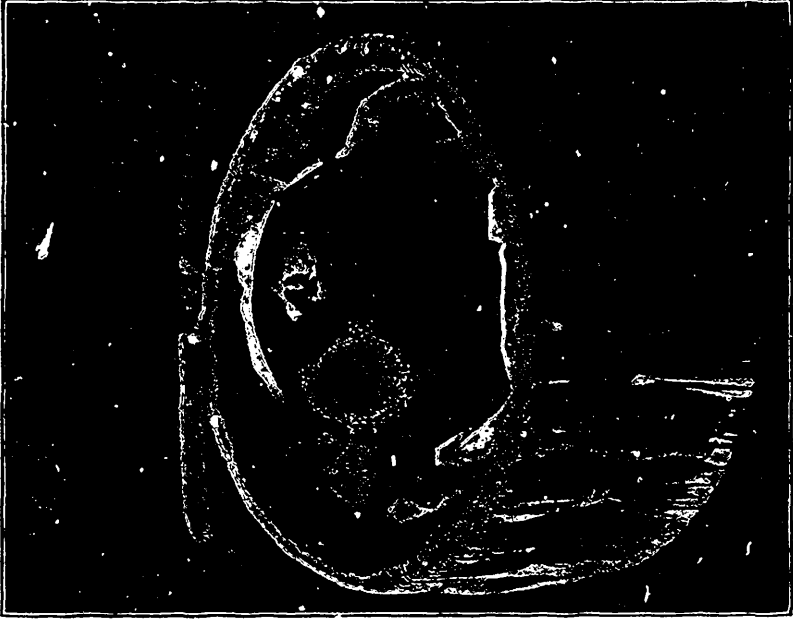
Ah, passing few are they who speak,  
Wild, stormy month! in praise of thee;  
Yet, though thy winds are loud and bleak,  
Thou art a welcome month to me.

For thou, to northern lands, again  
The glad and glorious sun dost bring,  
And thou hast joined the gentle train  
And wear'st the gentle name of Spring.

BYRANT.



**The Spencer Coreless Apple Described in This Issue.**



**The Coreless Apple in the Basket Sent to the King.**

(Photographs furnished exclusively to The Canadian Horticulturist.)

# The Canadian Horticulturist

MARCH, 1905

VOLUME XXVIII



NUMBER 3

## THE CORELESS APPLE\*

SAMPSON MORGAN, BROADSTAIRS, ENGLAND.

I HAD the honor of introducing the first coreless and seedless apple to Great Britain. Its arrival evoked great interest among all classes. I have been asked to put on record an account of this wonderful novelty, and for Canada have selected *The Canadian Horticulturist* for the purpose. The apple was sent to me by the secretary of the Spencer Seedless Apple Co., of Colorado, at the wish of Mr. Spencer, the introducer, with instructions to bring it before the notice of the British public.

A box containing the first coreless apples ever received in England was delivered to me at Broadstairs, January 22. The first specimen taken from the box I put aside for the King. In the near future seedless and coreless apples will be on sale in the fruit shops of every city in the United Kingdom.

The tree produces a cluster of small green leaves, like a disorganized bud. It is here that in due course the fruit forms. There being no petals or fragrance the codling moth, which has wrought great devastation in our orchards, passes it by, and thus few, if any, of the coreless apples are marred or injured by the grub of that pest. The trees are being propagated from buds, no seeds being available.

The permanency of the seedlessness of the Spencer apple is beyond dispute. Over

2,500 trees are already in hand, and the stock is being extended. Arrangements are in progress to ensure ample supplies of these wonderful novelties in England.

The Spencer seedless apple is not the first seedless apple which has been grown. Probably half a dozen trees have appeared at different places bearing apples without seeds. Besides, the apples which grew on the original trees had little juice, and being small, were of no commercial value. The originator of the Spencer seedless apple first succeeded in getting five trees which yielded fruits practically without seeds. From these five trees he budded and grafted to see if they would reproduce themselves. He has now in his orchard trees four, six and eight years old bearing seedless apples.

As these trees stand in close proximity to ordinary apple trees, a small percentage of the apples on the seedless trees have one and sometimes two or three seeds, but they are just as apt to appear in one part of the apple as another. Mr. Spencer has found a seed within one-eighth of an inch of the outer peeling of the apple, far removed from its core. It is impossible for the Spencer seedless apple to bear seeds of their own accord. The seed, which is occasionally found, is produced by the pollen from the common apple trees being carried to the

\* In the April issue of *The Horticulturist* will appear an article by Mr. W. T. Macoun, Horticulturist of the Central Experimental Farm, Ottawa, in relation to seedless apples that have been grown in Canada.

seedless trees by bees or the wind. Whenever this pollen is deposited, conditions being favorable, will be found the seed. There is a small quantity of pollen, also a stamen, as in the ordinary apple tree, and probably not over one-twentieth the amount of pollen on the seedless buds that there is on the common tree blossoms.

#### MAY REVOLUTIONIZE APPLE GROWING.

The originator claims that his are the only seedless apple trees in existence which one can bud and graft from, and obtain trees that will produce seedless apples; also that there are no other seedless apples of any commercial value. These apples from the seedless trees grow as large as the ordinary winter apple and contain as much juice. They are red when fully matured, and have large strawberry dots. The flesh is firm and they are excellent keepers.

It has been proved that the further we get away from the original proposition (five trees) the larger and better is the fruit. The seedless trees are very prolific bearers. There is an absolute saving of about 25 per cent. in the seedless apples on account of there being no waste except the peeling. This fact cannot be over-estimated when it comes to evaporating and drying the fruit.

For the hotel and restaurant trade, as well as for family eating and cooking, the absence of seeds or seed pockets is a great convenience. In the green apples, from the time they first appear until one-half or two-thirds grown, traces of the seed pockets may occasionally be found. By the time the apples reach full maturity, except in rare cases, this semblance of a seed pocket becomes absorbed into the solid meat of the apple. There being no seeds in the apple, there is no need for seed pockets, consequently nature eliminates them of her own accord.

Mr. Spencer has 50 bearing trees in his orchard, and the younger trees (four years old) yield apples which have only a yellow fibrous substance, of no toughness whatever,

representing the seed pockets. There is only one variety of seedless apple, and as that is quite distinct from any other, it has been called the Spencer seedless apple. Experiments are being tried on 12 or 15 of the best varieties of apples, and possibly in a few years the leading apples of commerce will be seedless. The Spencer seedless apple tree may revolutionize the apple industry of the world.

Marketed in large quantities these apples, even when they are no longer novelties, will command five dollars a bushel wholesale. At that price, if the trees are as prolific as they are stated to be, the apple should prove far more profitable to growers than even the Ribston pippin. For some years the trees, and also the fruits, will be very expensive. Even if the sanguine expectations of their originator are realized their introduction will not injuriously affect apple growing industries carried on by experienced cultivators, but it will happily drive from our markets those inferior and out of date sorts which are the chief cause of those periodic market gluts so ruinous to fruit producers.

For the commercial grower the new apple is admirably suitable. When available hundreds of thousands of bushels can be disposed of each season easily at excellent prices. A late apple of the color of the coreless apple is an undoubted acquisition to the trade.

By desire, this record of the introduction of the coreless apple to Great Britain, as published in *The Canadian Horticulturist*, will be filed by various state horticultural societies and colleges in Canada, the United States, England, Ireland, Scotland and Wales.

The apple sent to King Edward was photographed in two positions before being despatched to Windsor Castle. In acknowledging its receipt His Majesty's private secretary wrote: "The King has been much interested in seeing the apple which

Mr. Morgan sent." The private secretary also asked me to let him know "when any more of the seedless apples arrived in England from Colorado."

Two of the apples were disposed of by auction by Messrs. Garcia, Jacobs & Co., the well known Covent Garden fruit sales-

men, in aid of a fund being raised for the "Starving Poor of West Ham." An immense crowd of buyers assembled to watch the proceedings. The two apples were sold for 60 shillings, which is equal to 3,000 shillings a bushel, the highest price ever paid for apples in any market in the world.

## COOPERATIVE SPRAYING BY GROWERS

ALEX. M'NEILL, CHIEF OF THE FRUIT DIVISION, OTTAWA, ONT.

**I**N the spring of 1903 the Fruit Division, Ottawa, determined to test the efficiency of power spraying. An outfit with a gasoline engine was purchased from the Spramotor Company, London, and placed in the charge of Fruit Inspector Carey and Mr. J. C. Harris, at Ingersoll. Contracts were taken from the farmers between Ingersoll and Woodstock to the extent of about 3,000 trees, and during the season these trees were sprayed four times.

The results were quite satisfactory; nevertheless, the demonstration was continued in 1904 for the purpose of confirming the experience of 1903. Again 3,000 trees were contracted for and sprayed four times at a cost of 5c. per tree for each spraying. The object of these demonstrations was not to prove that spraying was a good thing so much as to devise some method whereby farmers would be induced to spray their trees. The result has justified the experiment. The outfit will remain in Ingersoll this year, but will be operated by private individuals, a result which was anticipated when the demonstration was undertaken.

The result of the work in Ingersoll has demonstrated two or three points very conclusively. First, that power spraying is not materially cheaper than spraying by hand; second, that power spraying is more effective than hand spraying; third, that it is so much more convenient that farmers, who could not be induced to spray with hand pumps, will readily pay even more than the commercial rate in order to have

the work done for them. And once more, it has been demonstrated that spraying is one of the best paying operations in the care of an orchard.

The season of 1904 developed fungus to a very serious degree in the county of Oxford. Unsprayed orchards did not usually yield more than 10 or 15 per cent. of apples that would grade as No. 1. This rendered it almost impossible to secure buyers in the Ingersoll markets during the fall months and, as a consequence, many unsprayed orchards were never picked, and those that were picked yielded only about the price of the picking and packages. The sprayed orchards, however, yielded about 90 per cent. of No. 1 fruit, and without an exception were all sold, some of them not at a high price but at a price that was deemed satisfactory for the season.

The results may be put another way. Accepting the average of two barrels per tree, the cost of spraying would be 10 cents per barrel. The difference in the price obtained for the sprayed fruit would be at least 75 cents per barrel on the tree, leaving a net profit of 65 cents per barrel for spraying. This is putting the financial side of it somewhat moderately. It is a common excuse with farmers for not spraying that there is too much other work to do. To such farmers I would say that there is no work on the farm that will yield so large a dividend as this of spraying; consequently it will pay much better to neglect other work rather than to neglect the spraying.



## GROWERS MUST BE PREPARED TO SPRAY

RICHMOND F. ROBINSON, ST. CATHARINES, ONT.

**T**O succeed in fruit growing a man must be prepared to spray and spray carefully and regularly just as he prunes or cultivates his orchard. Apart from the advantage to the fruit spraying is of great benefit to the trees. They are more thrifty and hold their foliage considerably later in the fall.

It is impossible for me to state how much any fruit was increased in value as a result of spraying last season, but I do know that I had no unsaleable fruit on my farm last year, and that by the use of lime and sulphur I had good crops of plums and peaches. Though curl leaf was prevalent I had none on any of my peach trees, except 40 or 50 two-year-old Yellow St. Johns which I had not sprayed.

Mr. Blaikie, a neighbor, and I purchased a Niagara gas sprayer, worked by liquid carbonic acid gas, last February. I cannot say how many trees we sprayed in an hour, but we put 600 gallons, wine measure, of lime and sulphur on in a day, and we were novices. The mixture was applied

very thoroughly even wastefully. The lime and sulphur mixture is hard to put on as it clogs the nozzles. We had to fill the tank bucket by bucket instead, of elevating the barrels or pouring in by means of a long funnel, as we shall do in future. With sufficient nozzles 1,200 to 1,500 gallons can be put on by three men in a day. The machine saves time, labor and material. I had previously used a hand sprayer, and if I had to pay twice what I did for the gas sprayer I would do it sooner than waste time with a hand sprayer, which is as much behind the times as a hand reaper.

Lime and sulphur will not only control San Jose scale, but make it a blessing in disguise, as those who do not spray will inevitably go to the wall. If I had no scale I would spray with lime and sulphur as a fungicide. By applying the Bordeaux mixture in time last season I succeeded in checking a good deal of rot in my plums and sweet cherries. If applied early and frequently the Bordeaux mixture will check the black rot in the grapes.

## NEW BRUNSWICK FRUIT GROWERS ORGANIZE

W. D. ALBRIGHT, SUSSEX, N. B.

**A**S secretary of the newly organized New Brunswick Fruit Growers' Association it is my duty to inform The Horticulturist of what has been done towards organizing the horticultural interests in this province. In December a meeting of maritime horticulturists was held in the Winter Fair building, Amherst, where the New Brunswick Fruit Growers' Association was organized with provisional officers as follows: President, J. C. Gilman, Fredericton; vice-president, Geo. McAlpine, Gagetown; secretary-treasurer, W. D. Albright, Sussex, and a director for each county.

The next meeting was held at Frederic-

ton, January 27, the evening following the convention of the New Brunswick Farmers' and Dairymen's Association. A constitution was adopted along much the same lines as that of the Nova Scotia Association and officers were re-elected with the addition of a separate treasurer in H. Wilmot, of Oro-mocto. A profitable session was held. The membership numbers 32, and the balance of funds on hand is \$27. It is hoped a grant will be received from the local government and to carry on an active campaign of educational and cooperative work. Among the things to be taken up is the purchase of nursery stock for members. Only

reliable firms will be dealt with, and thus one of the most common sources of vexation and loss will be avoided. Cooperation in packing, marketing, etc., will be considered

later. Two or three orchard meetings will be held during the summer and a convention about the end of the year in the fruit sections of the province.

### Pruning Cherry Trees

A cherry orchard (sour), 16 years old, set 16 feet apart each way, has grown up so high as to make the fruit ripen unevenly and hard to pick. Is it safe to head back the topmost branches, say six feet, of course painting the wounds made?—(R. Robinson, St. Catharines, Ont.)

W. T. Macoun, Horticulturist, Experimental Farm, Ottawa: Severe pruning of cherry trees causes gumming of the trees and weakens the trees considerably. If it can be avoided, it is not wise to prune cherry trees severely. In the present case it would be well to prune a few trees the first season and see the effect. If no gumming occurred, the work could be continued the following year. Much depends on the health of the trees, and if they are as vigorous as stated I do not believe that severe pruning would injure them much.

Prof. H. L. Hutt, O.A.C., Guelph: This is the inevitable result of the common mistake of planting trees too closely together. Severe heading back will remedy matters to some extent, but it is an injury to the tree. Such trees may be pruned back severely and still form good heads. Mr. Peart, my assistant, says he once had a similar case to deal with, and the main branches were cut back to stubs two or three inches in diameter and only a few feet from the trunk. Yet these trees have formed new tops and have done well. This, of course, involves loss of crop for two or three years.

Pro. L. R. Taft, Michigan Agricultural College: A great deal will depend on the growth and shape of the trees. While severe pruning of the cherry is not advisable, it might be well, under the conditions mentioned, to head back the branches, but I would hardly recommend the removal of

as much as six feet of the growth unless there are numerous side branches lower down on the limbs.

### Spraying for San Jose Scale

ROBERT THOMPSON, ST. CATHARINES, ONT.

The San Jose scale is slowly but surely spreading every season into fresh orchards and widening the infested areas; but, judging from the results of thorough spraying, I can safely say that the scale can be held in check and the trees kept healthy and the fruit almost entirely clean. Spraying with lime and sulphur in the proportions of 15 to 18 pounds of lime, and the same quantity of sulphur, to 40 gallons of water, and boiling two to two and a half hours, has given as good results as any mixture.

In several instances by using 20 pounds of sulphur, 25 pounds of fresh lime and 12½ pounds of sal soda to 40 gallons of water, and allowing the lime and soda to boil with its own heat for three-quarters of an hour, slaking the lime with hot water, excellent results have been secured. One point of great importance is that the spraying must be thoroughly and carefully done. This mixture is cheaper and is not so hard to apply as when 40 pounds of lime to 40 gallons of water is used. It is not necessary to use the lime and sulphur as hot as it was used two years ago.

The law regarding the scale is sufficient protection if it is enforced. Infested trees, when the owner will not treat them, should be taken out and burned. The San Jose scale is not much worse to combat than the potato bug if taken in time and if spraying is done once a year. The man who will not spray will soon lose his trees.

### Importations of Vegetables

THE following statement, showing the quantity and value of vegetables imported into Canada from the United States, and entered for consumption at the ports of Montreal and Toronto during the fiscal year ended June 30, 1904, and the duty collected on each item, has been laid on the table of the House of Commons at Ottawa by the Minister of Customs:

#### MONTREAL.

JULY TO DECEMBER, 1903, INCLUSIVE.

Articles.	Quantity.	Value.	Duty.
Melons .....	No. 17,597	\$ 764	\$ 191.00
Potatoes .....	Bush. 1,641	2,370	446.15
Potatoes, Sweet..	" 3,023	2,400	302.30
Tomatoes, Fresh..	" 15,142	16,938	4,722.20
Tomatoes, Can'd. Lbs.	292,863	10,539	4,392.94
Vegetables, Other \$		14,106	3,526.50
<b>Total, 6 months</b>		<b>\$47,117</b>	<b>\$13,581.09</b>

JANUARY TO JUNE, 1904, INCLUSIVE.

Articles.	Quantity.	Value.	Duty.
Potatoes .....	Bush. 1,793	\$ 1,815	\$ 268.95
Potatoes, Sweet ..	" 433	774	43.30
Tomatoes, Fresh ..	" 9,178	23,325	4,368.10
Tomatoes, Cannd. Lbs.	55,772	3,400	836.38
Vegetables, Other. \$		39,477	9,869.25
<b>Total 6 months.</b>		<b>\$70,791</b>	<b>\$15,385.98</b>
<b>Grand total 12 months.</b>		<b>\$117,908</b>	<b>\$28,967.07</b>

#### TORONTO.

JULY TO DECEMBER, 1903, INCLUSIVE.

Articles.	Quantity.	Value.	Duty.
Melons .....	No. 97,522	\$5,627	\$1,409.75
Potatoes .....	Bush. 1,414	1,292	212.10
Potatoes, Sweet ..	" 5,178	4,037	517.80
Tomatoes, Fresh..	" 8,226	10,234	2,777.60
Vegetables, Can'd. Lbs.	148,747	7,047	2,281.20
Vegetables, Other \$		10,432	2,608.00
<b>Total 6 months.</b>		<b>\$38,639</b>	<b>\$9,753.45</b>

JANUARY TO JUNE, 1904, INCLUSIVE.

Articles.	Quantity.	Value.	Duty.
Melons .....	No. 7,662	\$ 775	\$ 193.75
Potatoes .....	Bush. 3,279	3,755	491.85
Potatoes, Sweet..	" 337	479	33.70
Tomatoes, Fresh..	" 7,191	17,661	3,204.30
Vegetables, Can'd. Lbs.	55,231	4,156	829.07
Vegetables, Other \$		28,160	7,040.00
<b>Total 6 months.</b>		<b>\$44,986</b>	<b>\$11,792.67</b>
<b>Grand total 12 months</b>		<b>\$83,645</b>	<b>\$21,546.12</b>

### The Vicar Pear

L. WOOLVERTON, SUPT. ONTARIO FRUIT STATIONS, GRIMSBY, ONT.

A GENTLEMAN in the County of Waterloo sends a sample of a pear for identification. The pear, he says, matured in December, and when he wrote early in February, was still in good condition. The tree is a heavy bearer. For an ordinary sized tree, one barrel of fruit would be a fair crop, but in 1903 it bore three barrels of pears, of which 90 per cent were marketable, and in 1904 one barrel of marketable fruit. The Toronto men believe it to be Buerre d'Anjou, but it does not quite correspond with the description. "I hope," he adds, "that you can give me the correct name of the pear."

The pear is a fair sample of the Vicar of Winkfield, which was described and illustrated in my report to the Minister of Agriculture for the year 1901, page 22. It is an old French pear, introduced into cultivation about the year 1760, and now distributed in France under different names. It was introduced into England by the Vicar of Winkfield, hence its English name. I have grown the pear over 30 years in my experimental orchard near Grimsby, and have come to the conclusion that it should not be highly commended. The tree is fairly productive, but inclined to suffer from blight; while the fruit, though large in size and an excellent keeper and shipper, carrying as well as an apple, lacks color to make it a good seller, and has not good enough quality to commend it for the home garden. Its season is December to February.

The British Columbia Fruit Growers' Association is asking the local legislature to increase its annual grant. It also asks the Department of Agriculture to arrange for a national convention of fruit growers next autumn.

## New York Fruit Growers

W. H. BUNTING, ST. CATHARINES, ONT.

THE annual meeting of the Western New York Horticultural Society, and their 50th anniversary, was held in Rochester, N. Y., January 25 and 26. Notwithstanding severe weather, there was a large attendance from all over New York State, and a number of representatives from neighboring states.

Addresses were delivered by Prof. Bailey, on the history and outlook of the society; by Prof. Craig, on the apple orchard, supplemented by a series of very interesting stereoptican views; by Prof. Atwood, on the threatened invasion of the gypsy moth, and by Prof. Jordan, Prof. Beach and others. The discussions on the various subjects were animated and showed the fruit growers across the line are alive to the importance of their calling and the necessity for keeping abreast with the investigations of the experimenters and practical men of the day.

The display of fruit was exceptionally fine, and the exhibition of spraying machines and orchard appliances was of large propor-

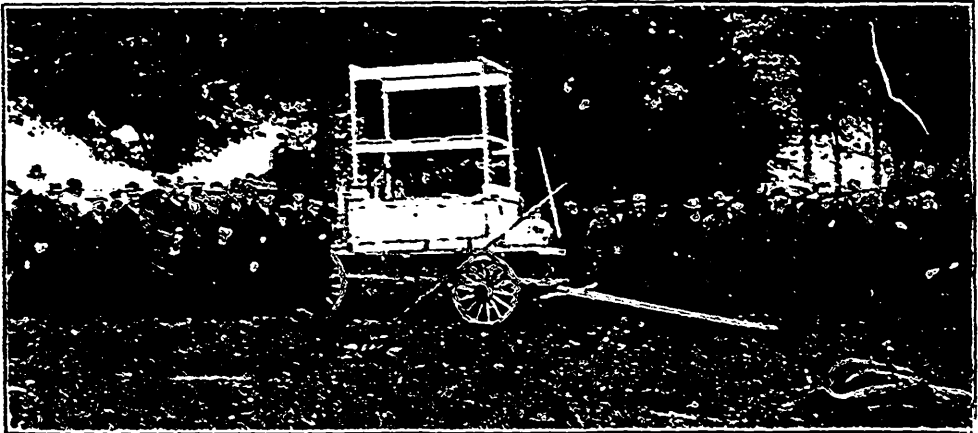
tions and great interest. Mr. Barry and Mr. Hall were unanimously re-elected to the offices of president and secretary-treasurer.

## Another Testimony For Spraying

A. HEAZLITT, ADOLPHUSTOWN, ONT.

FOR spraying I use a pump purchased about 12 years ago for which I paid \$16. This included barrel and blocks and double hose. It takes three men to run it; one to each hose, one to drive the horse and do the pumping. I spray for the codling moth, soon after the blossom falls, when the little apple is pointing upwards, and again in three or four weeks. I use four ounces paris green and one quart of new lime to 40 gallons of water. We can spray about 45 trees in an hour. We have no San Jose scale. A neighbor who has tried all kinds of sprayers agrees with me as to the value of my pump. I fully believe in the value of spraying.

Prices were very low last year, but had I not sprayed I would not have been able to dispose of my apples at any price. Spraying is O. K.—(Fred. Heenev, Ingersoll.)



Fruit Growers Examining the Results of Cooperative Spraying

In this issue Mr. Alex. McNeill, Chief of the Fruit Division, describes the results of the cooperative spraying, conducted under the direction of the government, in the Ingersoll district. The illustration shows fruit growers inspecting the sprayed and unsprayed orchards, and is a photograph taken especially for *The Canadian Horticulturist*.

# THE ONTARIO FRUIT EXPERIMENT STATIONS \*

REPORT OF THE INSPECTOR, PROF. H. L. HUTT, GUELPH, ONT.

Fruit trees in the St. Lawrence Valley suffered severely last winter. Mr. Jones, of Maitland, the experimenter, has made careful note of the relative hardiness of the different varieties. He has a good general collection of the hardiest varieties of fruit, made up of 74 varieties of apples, 40 of pears, 51 of plums, and 11 of cherries. Only a few of the hardiest varieties of pears and plums survived the winter, and none of them, with the exception of the American plums, fruited satisfactorily.

Many varieties of apples supposed to be quite hardy were not sufficiently so to stand the severity of last winter. A young orchard of 150 Ontario apple trees, three years planted, was entirely destroyed. Blenheim, Ben Davis and Stark trees also were killed or more or less severely injured. Even large trees of Fameuse and Scarlet Pippin, which had been bearing regularly for the past 20 years, were killed outright. In nearly all cases, however, these were trees which had weakened their vitality by over-bearing the previous year. Trees of the same variety along side, which bore no crop in 1903 were quite healthy and bore heavily this year. In this connection a valuable lesson may be learned as to the importance of keeping trees at all times in good health if possible, and not allowing them to lose vigor through over-bearing, attacks of insects, fungii, or other causes.

Mr. Jones is a strong believer in the importance of hardy stock for top working the less hardy varieties upon. He has set out about four acres of McMahan White apple trees, and has top-grafted them with scions selected from his most productive and best colored Fameuse trees. In this way he will soon have an orchard of hardy productive trees bearing fine, high colored fruit as the result of careful selection of scions.

For a commercial orchard Mr. Jones has found the Fameuse, McIntosh and Scarlet

Pippin the most profitable varieties for his section, but for a general home collection, covering the season from early to late he recommends the following:

**APPLES:** Yellow Transparent, Astrachan, Duchess, Alexander, Fameuse, McIntosh, Scarlet Pippin, Wealthy, Milwaukee, Scott's Winter, and Golden Russet.

Pears and plums cannot be relied upon for a profit in that section, although a few may be grown for home use. The following are the varieties which Mr. Jones recommends as a result of his testing so far:

**PEARS:** Flemish Beauty, Clapp's Favorite, and Ritson.

**PLUMS:** Whittaker, Wolf, Stoddard, Red June, Mana, Ogon, and Glass Seedling.

**CHERRIES:** Early Richmond, Montmorency, Orel, and English Morello.

## THE GRIMSBY STATION.

Mr. L. Woolverton, of Grimsby, the experimenter at this station, has 100 acres closely planted with fruit. His collection of varieties is one of the largest and most representative to be found in Ontario. It is made up of 50 varieties of apples, 60 of pears, 60 of plums, 100 of peaches, 100 of cherries, 5 of quinces, 12 of apricots, 104 of grapes, 15 of currants, 40 of gooseberries, and 50 of strawberries.

The following are the varieties he recommends for planting in his section:

**SWEET CHERRIES:** Governor Wood, Napoleon Knight, Tartarian, Elkhorn, and on clay soil, Windsor.

**SOUR CHERRIES:** Montmorency and English Morello.

Mr. Woolverton has about 200 Windsor cherry trees six or seven years old which have made good growth, but borne very little fruit, while trees of the same variety on heavy soil at Mr. Orr's a few miles farther west have fruited heavily. Last winter killed the fruit buds on most of the

sweet varieties in Mr. Woolverton's collection, and the crop as a consequence last season was light. The sour varieties came through the winter uninjured and bore heavily.

#### THE SIMCOE STATION.

In this section of Ontario hardiness is necessarily a first consideration in the selection of varieties of fruits for planting. Mr. G. C. Caston, of Craighurst, the experimenter, has an excellent general collection of apples, pears, plums, cherries, and the small fruits, which he has had under careful test for a number of years. He is thus in a position to give valuable information on any of the fruits suitable for that district. He strongly advocates the plan of top working the best varieties of apples, such as Spy and King, upon hardier stock, such as the Talman Sweet. The advantage gained by this practice was quite evident this year after the severe test to which the trees were put last winter. The varieties of apples which he recommends for that section are: Duchess, Alexander, Peerless, Snow, Blenheim, Greening, Fallawater, Ontario, Spy, Gano, and Stark. The Baldwin, Greening, King, Spy and Ontario, he says, should always be top grafted on hardy stock in that district.

Out of the 25 varieties of cherries tested for a number of years he recommends Osthheim, Orel No. 24, Russian No. 207, Bes-sarabian, Montmorency and Dyehouse. Mr. Caston has been very successful in the cultivation of raspberries and blackberries, which not only bear well but bring profitable prices in the local markets. The Cuthbert has been his best red raspberry, while Agawam and Eldorado have been his most profitable varieties of the blackberry.

#### THE BAY OF QUINTE SECTION.

This section is in the centre of one of the best apple growing sections of Ontario, and nowhere else in the country do I know of a more successful apple grower than our ex-

perimenter, Mr. W. H. Dempsey, of Trenton. His annual crop averages about 2,000 barrels. Last year it was somewhat over that amount.

Mr. Dempsey has in his orchard 300 varieties of apples, 40 of pears, 30 of plums, 6 of cherries, 3 of peaches, and 2 of quinces.

The following are the varieties he recommends for planting in his section:

**APPLES:** Thirteen of the leading commercial varieties in order of their ripening: Duchess, Gravenstein, Alexander, Trenton, Wealthy, Fameuse, McIntosh, Blenheim, King, Greening, Ontario, Baldwin, Seek, Spy, Stark, and Ben Davis. Thirteen of the choicest varieties for domestic purposes in their order of ripening: Primate, Duchess, Gravenstein, Trenton, Wealthy, Fameuse, McIntosh, Pomme Grise, King, Greening, Ontario, Seek, Spy, Swayzie, Pomme Grise, Jonathan, and Talman. A few of the most promising new varieties: Star, Fanny, Garden Gem, Parlines Beauty, Coe's River Beauty, Winter Banana, Boiken, Windsor Chief, and Rome Beauty.

**PEARS:** Gifford, Tyson, Clapp's Favorite, Bartlett, Boussock, B. Hardy, White Doyenne, Dempsey, Bosc, Clairgeau, Goodale, Lawrence, Josephine de Malines.

**PLUMS:** Saunders, Burbank, Abundance, Imperial Gage, Lombard, Shipper's Pride, Chabot, Niagara, Damson, Reine Claude.

**CHERRIES:** Early Richmond, Montmorency.

**PEACHES:** Fitzgerald stood last winter uninjured.

**QUINCE:** Orange.

#### IN NORTHERN ONTARIO.

Last year was a severe test for the hardiness of trees in Northern Ontario, and some valuable lessons have been learned at the Algoma Station, conducted by Charles Young, of Richard's Landing, who is an enthusiastic fruit grower and a careful observer.

I cannot give a better idea of some of Mr. Young's work than by quoting a few of his answers to questions I put to him last summer. In answer to the question as to what kinds of fruits he is growing he says: "I am trying to grow a little of almost everything in the way of fruit except peaches, without making a specialty of any one thing. The work so far has been purely experimental. If the question had been what made the most money I would have answered without any hesitation strawberries, and after that fall apples. I have in round numbers 35 of apples, 9 of pears, 12 of cherries, 11 of plums, 8 of strawberries, 10 of gooseberries, 7 of currants, 5 of raspberries, 8 of black raspberries, and 8 of grapes."

In answer to the question, "What varieties of apples would you recommend for planting in your section," he said: "I will make the list very short. Fall—Astrachan, Duchess, Charlemoff, Yellow Transparent, Gideon. Early winter—Longfield and Wealthy. Scott's Winter is the best late winter, but it by no means fills the bill. A late keeping apple of good size and quality and as hardy as some of our fall apples we have not got so far. I thought we had it in the Ontario, but last winter was too much for it, although I think if the trees had been a few years older it would have come out all right. As it is now, I am disappointed in this apple."

Replying to a question as to how trees wintered in his section he said: "They apparently came through the winter fairly well, but the spring or early summer killed 20 per cent. of them. The summer and fall of 1903 were extremely wet here, which induced a long sappy growth which was not fully matured when winter set in. We had no fall to speak of between summer and

winter, then followed the excessive cold of winter, 48 degrees below zero on the main land and 46 below at this station, and for days in succession 30 below zero. This, no doubt, weakened the vitality of the trees, but with the exception of the tips of last season's growth I could see nothing the matter when they got their annual pruning between April 12 and 20.

"The first week in May was excessively hot in the day with hard frost at night, which is the principal cause of failure in fruit growing in the north. The trees leafed out all right with the exception of a few cherries, but just as soon as the sap in the top of the tree was exhausted the tree began to die. There was no root killing, although the snow at no time was very deep. Most of the trees were killed to the snow line and are making new growth a foot above the ground. They may in a few years make better trees than they were originally. Six feet of clear trunk is not the thing for trees in this section, three feet is quite high enough. If I had taken my usual precaution and protected the trunks of the trees from the sun I have no doubt most of them would have come out all right, but this I omitted in the fall."

"As to what varieties have suffered most. This has puzzled me, for varieties that had been considered hardy, for instance, Talmán, Golden Russet and Ben Davis, are nearly all killed. I have lost no trees planted six years ago except two Wagners. Among pears, Keiffers, which bore some fruit last year, were killed to within a foot of the ground. Anjou, which I had not considered extra hardy, was uninjured and came out better than even Flemish Beauty. A few sweet cherries I had are dead, others are gradually dying."

Although in my 51st year, I am spending a good deal of my time tramping in the snow and cold soliciting renewals and new subscriptions for *The Canadian Horticulturist*.—(Jos. Barker, Secretary Kincardine Horticultural Society.)

I find something to help me in every issue of *The Horticulturist*, though the reason I began taking it was for the information it gave about growing flowers. The magazine is getting better all the time.—(Mrs. Geo. Mutton, Penryn

## SPRAYING AGAINST THE BLACK ROT

W. H. BUNTING, ST. CATHARINES.

I HAVE noted with considerable interest the timely articles in *The Horticulturist* on black rot of the grape, more especially those from Mr. W. T. Macoun, of the Central Experimental Farm, and Prof. Lochead, of the Ontario Agricultural College, both of whom have been taking a lively interest in the work of the fruit growers of Ontario. As my vineyards have been incidentally mentioned in these articles, I have thought that I might add a word or two emphasizing the conclusions arrived at.

Niagara grape, but during that year it suddenly appeared when the fruit had attained nearly full size but had not commenced to ripen. An application of Bordeaux mixture seemed to check it. There also appeared that year what has become commonly known as petrified grapes. The berry, instead of ripening in the ordinary way, became solid and opaque, assumed a dull grey or greenish white appearance, and finally dropped to the ground.

In 1903, owing to peculiarly favorable at-

mospheric conditions, black rot spread so rapidly, not only over the Niagara grapes, but also affected nearly all other varieties and was in evidence in so many vineyards it became apparent that a vigorous campaign must be commenced. Conflicting reports were received of failure



Spraying on the Farm of Alex. Heazlitt, Adolphustown, Lennox County, Ont.

The grape industry, which has reached large proportions, and become a most important interest, is threatened with a serious danger unless prompt measures are taken to check the inroads of this fungus disease. I have had evidence of the presence of the rot for several years amongst the Rogers varieties on sandy soil, and have been spraying to some extent, but with indifferent success, because the work was done in a spasmodic way, and usually not taken up until after the damage to the fruit became more or less evident. It was not until 1901 that symptoms of this disease were seen on the

or success in combatting the disease. In some sections the growers pulled out their vineyards and turned their attention to other crops. Others, by persistent effort, succeeded in controlling the disease and reaped fair crops. I resolved on making a determined effort to fight the rot during 1904.

The vineyard most seriously affected was sprayed seven times: four with the Bordeaux mixture (4-4-10 formula), twice with the soda Bordeaux, using sufficient caustic soda to neutralize the acidity of the copper solution, and once with a dust spray composed of about 30 pounds of lime, 15



pounds of sulphuric acid and two pounds of sulphate of copper, in a finely powdered condition, well mixed and applied with a Jumbo dust sprayer. Although 1904 was favorable for the spread of fungus there was comparatively little rot in the vineyard of about five acres, and no petrified fruit, and I succeeded in harvesting one of the most satisfactory crops of grapes this vineyard has produced for many years. In 1903 nearly 75 per cent. of the crops had been destroyed by rot.

In other vineyards where less spraying was done there was more or less evidence of rot even where it had not previously appeared, while in many surrounding vineyards, where no spraying was done, the crop was absolutely worthless. I am satisfied that frequent and systematic spraying with the Bordeaux mixture will result in freedom from rot and disease, in producing bright, healthy foliage and in the proper maturing of a fine crop of fruit under ordinary conditions.

## STRAWBERRY CULTURE

E. B. STEVENSON, PONSONBY, ONT.

THE past season has emphasized the superiority of the narrow row system of strawberry cultivation, with soil well prepared. The question is often asked, "What is the best soil for strawberries?" They may be grown on any land that will produce a good crop of corn, potatoes, or turnips; ground that has been well manured for roots the year previous is perhaps the best.

There is nothing more important in successful strawberry growing than a careful preparation of the soil. There is no fruit that is more unsatisfactory and more unprofitable when neglected, and none that will more readily respond to good care. Only those who have had experience can be made to believe what can be taken off an acre of strawberries. The up-to-date grower, who gives strawberries suitable ground and proper cultivation, will clear one year with another. \$225 to \$250 per acre.

Strawberries should not be planted on newly plowed sod land, nor on ground on which the water stands after rain or through the winter. On sod land a great many white grubs are often found, which will make havoc amongst newly set strawberry plants. I have seen the white grub

clean off the plants from a two-acre field that had been planted on sod land.

The best results will be obtained from rows three or three and one-half feet apart, plants the same distance in the row, cultivated both ways for a time, then, when plants are running well, cultivate one way. Keep the rows of plants narrow—about 18 inches—leaving a good path for the pickers. In the fall, after growth has stopped, give a dressing of unleached ashes and a slight covering of long strawy manure, or pea straw. In the spring this should be raked into the paths, and will act as a mulch and keep the berries clean. If the ground has been kept well cultivated and clear of weeds the previous summer it will need very little in the spring.

Last season was unfavorable. Owing to the severity of the winter the plants suffered very much, some plantations losing one-third. The plants made a good growth and went into winter quarters in good condition, and where they had a good covering of snow or straw came out all right. Where not covered the very severe freezing of February did the damage, but wherever they were well mulched the plants came through the winter in good condition. The experience of the past season emphasizes

the great importance of a good heavy mulch, especially where the plants are thin in the row. This prevents the great damage that results from heavy freezing, or alternate freezing and thawing. The season was later than usual and prices ruled higher on account of a light crop.

#### CONCERNING VARIETIES.

As to the best varieties each grower will have, in a large measure, to decide for himself which are best suited for his soil and style of cultivation. In some places Michels is the best early, in others it gives a very good return. The first to ripen last season were Excelsior, Michels, Van Deman, August Luther, Camelon, Success, Early Market, but not very much ahead of the bulk of the mid-season varieties. Gandy, Nettie, Hunn, Robbie, Buster and Irene were among the last picked.

Among the good varieties Monitor did well. It is an early variety. There were

only one or two pickings of the earliest varieties before the mediums, viz., Clyde, Monitor and Splendid, were ready; then Bubach, Tennessee Prolific, Williams, followed by Glen Mary, Sample Atoma, Gandy, Joe, Nettie.

Of the new varieties, fruiting for the first time with me, Success, President, Fairfield and Ben Davis did the best. Success is early and makes small plants, but is a good runner and the berries medium in size. I have a new strawberry named The Cardinal. It is claimed to be the long looked for "perfect" berry. The plants are clean and bright, vigorous and strong, large and healthy, no trace of rust on any of them. When it fruits next season, if the berry proves to be as good as the plant, it may turn out to be what its originator claims, viz., perfect. I hope it may have a favorable season in which to make its first appearance in Canada.

### Berry Bushes in the Orchard

**M**R. A. PETTIT, of Grimsby, was one of the fortunate fruit growers who did not lose many peach trees by the severe weather of the winter of 1904. He attributes this largely to the fact that he has berry bushes planted in alternate rows in his peach orchard. The bushes, he claims, help to hold the snow and break the sweep of the wind. "Where the bushes were planted," said Mr. Pettit to a representative of *The Horticulturist*, "I only lost three or four trees. In another orchard where there were no bushes I lost about 200 trees. The location of the two orchards was practically the same. I have been unable to account for it in any other way."

"How would mulching with straw, or the use of a cover crop, affect the trees," was asked Mr. Pettit. "Anything that will hold snow and protect the roots," he replied, "would be of value, but I doubt if it would be practicable in a large orchard."

### Dry Sulphur for the Rot

**L**AST year was my first experience with the black rot in grapes," said Mr. R. H. Lewis, of Hamilton, to *The Horticulturist* recently. "I never had anything serious the matter with my grapes before. My impression is that growers will have to spray thoroughly and at the proper time if they are to prevent the rot seriously injuring their crops. I used dry sulphur last season, which I applied twice, but with no result. This may have been due to the fact that I did not apply it soon enough, although I do not believe sulphur is the remedy."

"The Bordeaux mixture, I think, is the best to use. This year I intend to apply a copper solution before the buds start and to follow it with two or three applications of the Bordeaux mixture. One application put on thoroughly is worth half a dozen put on poorly. I am using a power sprayer and have obtained excellent results."

## DISEASES OF THE GRAPE \*

W. T. MACOUN, HORTICULTURIST, C. E. F., OTTAWA.

**T**HE brown rot, downy mildew, gray rot, is the rot which up to recent years proved most injurious in Ontario. The general appearance of this rot as it affects the fruit has already been noticed. Like the black rot, it affects leaves, stems, and fruit. The disease causes slightly depressed patches on the shoots, somewhat like anthracnose, but they are not so deep. The stems, however, are not usually badly affected, but it is the leaves and fruit which suffer most. Unlike the black rot, in the case of brown rot once an infection takes place the disease spreads through the tissues of the vine.

When the leaves are affected they turn pale where the disease has been at work, and about this time the under part of the affected leaf becomes downy, indicating the presence of spores and presenting the downy mildew stage of the disease. After this the affected parts of the leaves turn brown. The diseased condition of the fruit is indicated by a brown patch which gradually spreads over the whole grape, which gradually withers. The absence of black pustules readily distinguish this at this stage from the black rot. Sometimes, after the fruit has withered, it becomes covered with a white powdery substance indicating the spores, but these do not always develop, much depending on healthy conditions. Spray with Bordeaux mixture just before blossoming, after fruit has set, and 10 to 14 days later.

### POWDERY MILDEW (*Uncinula spiralis*).

This disease does not penetrate into the tissue of the plant as the black and brown rot, but grows upon the surface, making it much easier to treat. Unlike these diseases also, it spreads more rapidly in rather dry weather. The mildew grows on the young shoots and under surface of the leaves and

on the fruit, giving them a grayish, powdery appearance easily recognized as being caused by the powdery mildew. This disease feeds on the plant by sending small suckers into the plant cells from which it gets food. Spores are produced early in the season and these being scattered about soon infect other leaves or vines and spread the disease.

A second crop of spores are produced later in the summer and these carry the disease over the winter. These are enclosed in a hard, roundish case which becomes black during the latter part of the season. This is a very easy disease to treat and yields readily to fungicides. Dry sulphur and sulphur and water have been found effective, but as this disease often accompanies other diseases of the grape the sprayings with Bordeaux mixture recommended for black and brown rot are preferable and will effectually check it.

A disease noticed in the vineyards at Winona, Ont., is undoubtedly this species. It causes a withering of the leaves somewhat like the brown rot, but the fruit is not affected nor has the under surface of the leaf the downy appearance of the brown rot. The leaves on the vines at Winona had the burnt appearance which is peculiar to many

The patches on the leaves indicating the disease are large and irregular in outline. The patches become quite dry and will break from the leaf very readily. The spores are borne on the under surface of the leaf on slender filaments and are produced in large numbers during damp weather. This disease lives over the winter in the fallen leaves. It has not received much attention, but it weakens the vines and prevents the full development of the fruit. Spraying the vines, as for black rot, should prove quite effectual.

\* Extract from an address delivered at the last annual convention of the Ontario Fruit Growers' Association. The first part of the address will be found in the January issue.

## GRAPE PRUNING

“GRAPE pruning should be done in March after the severe weather is over and before vegetation begins so that they will not bleed too profusely,” said Mr. A. W. Peart, of Burlington. “I prune on the renewal spur system, a combination of the two systems in common use. I aim to get rid of the old wood, only retaining a

certain amount of it to ensure having fruit. “Grape vines will bear the third year, but it is wiser not to allow them to do so until the fourth. If you want grapes you must have a supply of young wood formed the previous year. This wood throws out shoots in the spring and on these shoots the fruit is formed.”

## THE HOME OF A HORTICULTURAL ENTHUSIAST

FEW people living in cities, who have a small amount of land around their homes, have any conception of the pleasure and profit they may derive from their ground with proper care and the necessary amount of enthusiasm. Any such who could visit the home of Mr. R. B. Whyte, of Ottawa, during the summer months, would be amazed and encouraged by what

deducted in Ottawa under the firm name of J. G. Whyte & Sons, Mr. Whyte for many years has succeeded in making his home a bower of beauty. Not only has he surrounded himself and family with much that is beautiful in the line of flowers, but he has succeeded in producing from the little plot of land around his home many delicacies in the line of tender vegetables and fruits. All

this has been accomplished by Mr. Whyte through a few hours' work each morning before he leaves for the office. “I do not,” said Mr. Whyte, “do any work to speak of in my garden in the evening. I like to keep that time to look around and enjoy it.”

The land at Mr. White's disposal is 200 feet by 173 feet, from which must be deducted the space occupied by his house; a most



**How the Walks in Mr. Whyte's Garden Are Laid Out**

This cut shows how well adapted the boulder border is for rounding corners and for curves. The path is a new one and will be covered with climbing roses.

they saw. This pleasure fell to the lot of an editorial representative of The Horticulturist last summer who wishes many more of Canada's amateur florists could have the same experience.

Although a very busy man, having control of the large wholesale business con-

comfortable, home-like structure. Of the remaining ground there is not an inch that is not used to the best advantage. There is a lawn and tennis court, occupying 110 by 50 feet, and, with the exception of a small piece of land at the back of the house which is devoted to the raising of vegeta-

bles, the rest of the ground, about half an acre in extent, is given over to the production of flowers and fruit. As a result of years of experience Mr. Whyte has discovered the best varieties of flowers to grow to ensure continual bloom from spring until late in the autumn.



**A Lovely Section in Mr. Whyte's Garden**

This view is near the entrance from the street. In the foreground is a canna bed bordered with tuberous begonias. The tree is an *Ostrya* cherry. In the distance is the street fence covered with *Virginia* creeper.

The following partial list of flowers in bloom during the different months will give some conception of the beauty of this garden:

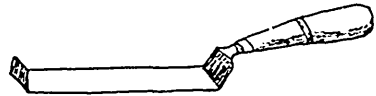
May—Narcissus, over 75 varieties; tulips, over 100 varieties.

June—Paeonies, 30 kinds; lilies, 30 kinds, lasting all season; German iris, 40 kinds.

July—Spiraeas, 15 varieties; Japanese iris, 35 varieties.

August and September—Gladioli, between 4,000 and 5,000 bulbs; phlox, 70 varieties, and over 70 kinds of herbaceous perennials.

In addition to the flowers Mr. Whyte finds time to grow 25 kinds of grapes, 15 of apples, 10 of currants, 32 of gooseberries, and the Herbert raspberry.



**A Hand Weeder**

On entering Mr. Whyte's grounds, after the beauty of the general effect has been noted, attention is soon drawn to the neatness of the walks which reach to all parts of the garden. After trying numerous experiments Mr. Whyte believes he has discovered a walk that is free from the weak points of most garden paths. "In making



**A Crescent Hoe**

my paths," said Mr. Whyte, "I excavate the earth  $3\frac{1}{2}$  feet wide and 15 inches deep. The trench is filled in with unsifted coal ashes about 14 inches deep. This is then well rolled with a garden roller, then a layer of sifted ashes, rolled again and covered with about an inch of sandy earth, which, when rolled hard, makes a very pleasant path to walk upon, dry, free from grittiness, and easily kept clean. They are lined on both sides with small rounded boulders,

which I think make a very attractive and permanent border."

#### A GREAT DIFFICULTY.

"The greatest difficulty many amateur flower growers have with their gardens," continued Mr. Whyte, "is to decide how to arrange their perennials and their annuals so as to ensure a constant succession of bloom. It is not good gardening to have a bare spot in the garden at any time. I have succeeded in overcoming this difficulty fairly well. Some advise using nothing but per-



One of the Paths and Arbors in Mr. Whyte's Garden.

This cut shows one of the long paths. The arbor is made of cedar poles and is covered with grape vines. In the foreground is a white phlox.

ennials, but I prefer to mix my annuals among my perennials to keep up the bloom.

"Visitors to my garden sometimes remark, 'What a lot of work it must be to look after so many flowers.' My reply is that if it was work I would not undertake it, but as it is a pleasure I enjoy it and wish I could do more. I manage to do the bulk of the digging, but in the spring I have to secure a little help to get things ready in time for planting. During the summer the only assistance I require is to cut the grass, as that is a job I do not attempt.

"I use two hand implements, which are a great help in the care of the garden; in fact, I would not know what to do without

them. In cleaning the paths and working among the plants I use a Dutch hoe. An improved form, the crescent hoe, does even better work, as it cuts both ways. With it I can cover a large surface of ground with small effort. The smaller tool is of great assistance for weeding purposes, as with it the weeds can be removed from around the plants without injuring them, and at the same time the soil is stirred up. Much more work can be done with this little implement than with the hands, and the annoyance of soiling the hands is avoided.

"Long ago I found that if I was to succeed with my garden a vigorous fight must be maintained against weeds. This fight has to be continued all season, but is the most exacting during June and July. If the weeds are kept under control during these months

they do not cause much trouble during the remainder of the season.

"Every year I like to experiment with different varieties of fruits and flowers, and in this way succeed in finding many that are specially well adapted to eastern Ontario."

"How do you manage to maintain the fertility of your garden?" Mr. Whyte was asked.

"My stable yields about 25 cart loads of manure a year, and I buy about 10 more," replied Mr. Whyte. "I also use wood ashes, but find it difficult to secure enough. Every second year I obtain about 25 bushels of ashes. The greater part of the fertilizers are used for the small fruits and the

perennial border. The vegetable garden is given what is raked off the perennial border, which I have found sufficient."

During the 35 years Mr. Whyte has been interested in gardening he has become recognized as an authority in several lines of horticultural work. Largely through his efforts the Ottawa Horticultural Society was started 12 years ago and Mr. Whyte has been on the board of directors ever since. This society is recognized as one of the best in Ontario. Every month, during the summer and fall, the society holds exhibitions, at which Mr. Whyte has always been a successful exhibitor, winning a large proportion of the prizes. In the growing of poppies, gladioli and perennials he has

been particularly successful. Gooseberries grown by him have been used by the Dominion government for exhibition purposes in foreign countries. In a later issue some of Mr. Whyte's methods of growing small fruits and vegetables will be described.

Any amateur horticulturist who can manage to visit Mr. Whyte's garden will receive a cordial welcome. During the 35 years he has been engaged in amateur gardening his love of the beauties of nature, as they may be found by diligent search in any city garden, has become so intensified that visitors invariably come away with fresh conceptions of the possibilities of gardening even if only on a small scale.

## PLANT IMPROVEMENT BY HYBRIDIZATION\*

II. H. GROFF, SIMCOE, ONT.

AT the meeting of your association at St. Louis I presented a brief address on the general advantages to be gained by breeding from tame versus wild species.

In presenting these views I took it for granted that the actual possibility of creating domestic species by hybridization had been generally admitted.

The Darwinian theory, as to the natural creation of species, is none the less true, but that such theory was intended to be accepted as an inseparable barrier to the results of scientific effort, could never have been thought of. It stated what we know to be perfectly true in nature—that the creation of wild species requires ages of time. But as I have recently expressed it, "The unfettered mind of man has bridged the ages, and in hastening evolution by hybridization, has rushed into the cons of the future and laid their treasures at our feet."

It would not be possible in a paper like this to detail the many features of this important aspect, resulting in my experience

from my recognition of domestic species among my advanced creations, during years of constant and critical observation in the field, from several hundred thousand new seedlings of the gladiolus, as such detail is capable of limitless elaboration as to its actual and possible application in scientific and economic plant breeding.

I confess to a feeling of helplessness at the immensity of the field, for practical and useful results, arising from my limited application of the system of plant breeding.

The practical and general application of my system may be outlined as follows: In order to secure the benefits of existing material, make crosses between every available type, regardless of apparent objectionable characteristics. Select sires from these and use on every wild species obtainable, on special and general lines, crossing and re-crossing until desirable types are produced, then bring the selected offspring of all wild species together in intercrossing on special lines, as each wild species will prove more

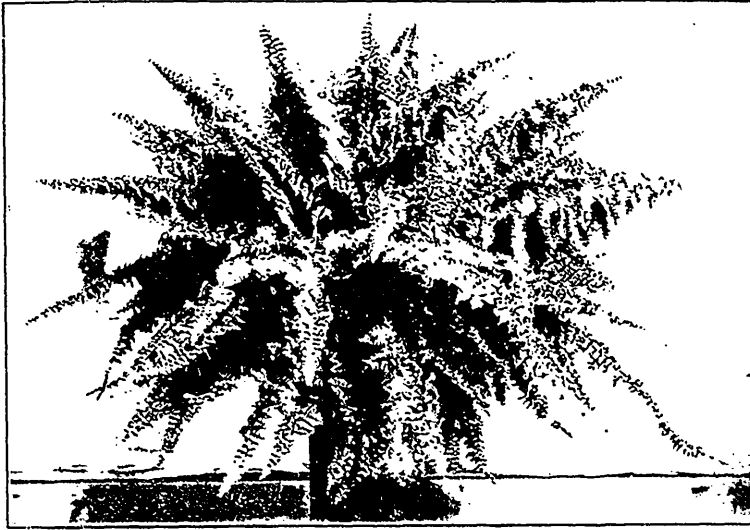
\* Address before American Breeders' Association, Campaign, Ill., February, 1905.

useful than another in some individual feature valued by us, for as already indicated specialization becomes imperative. The result of the foregoing will be the creation of new domestic specific types, valuable as sires for use in revitalizing crosses on existing varieties of merit, and the production of new forms and types of unexpected quality and value.

Selections of varieties and raising naturally fertilized seedlings from such selections, is only a short step towards an infinitesimal fraction of the possible satisfaction open to all plant breeders, who must be

should be conducted on many lines, with the hope of rendering the possibilities of each species controllable for the definite use planned by the operator.

For example: If the desire is to produce a white section every effort should be made to originate such colors and shades from every known wild species, without regard to their colors. When fixed types of a desirable character have been so produced these should be used as sires on selections from existing varieties as mothers for the creation of new and valuable economic types.



*Mephrolepis Piersoni*, as Grown by J. Gammage & Sons.

considered as advancing, more or less slowly, toward the ever rising—but never to be fully risen—sun, of scientific horticultural achievement.

The first step should be hybridization or cross-breeding between such selected varieties—irrespective of color or race—to the limit of variation and stability; with a contemporaneous systematic effort to develop domestic specific types from every obtainable wild species by using pollen from these advanced selections. These efforts

While the foregoing operation is progressing for the production of commercial types, crosses should be made between all of these sires on individuals prepared for use as mothers by removal of the anthers before ripening of the pollen; with the object of creating new and distinct domestic specific types to be used as the progenitors of new forms and races, as well as for the re-

vitalization of strains possessing valuable characteristics worthy of perpetuation and elaboration. The results to be obtained from blending vital forces that have been isolated for ages in the natural production of wild species gives unbounded satisfaction, and the pleasant surprises are only limited by the activity of the worker.

In my work on the gladiolus some of the most beautiful red shades came from crosses between light types that had been revitalized by a dash of choice red blood



from new species. The effect of working through the light section added most materially to the substance of the flower. My highest satisfaction, however, is from a series of new forms with large, round, cup-shaped flowers, like the tulip or nymphaea. Many of these are self colors ranging from pure white to lilac and pink, with intermediate shades of the most delicate shell pink and flesh tints.

Multiplicity of the floral pieces, as in semi-doubles, is now quite frequent. Infusions of such blood induces twinning from

the seed so produced, a point that proved most interesting to Professor Bateson, of England, at the International Plant Breeders' Conference, New York, 1902. Valuable and interesting variations like the above are among the side-lines, of limitless possibility yearly made apparent to the ardent worker, and selections made by me from over a half million of my new creations give promise of endless satisfaction, as well as increased opportunities for greater and more rapid progress in the future.

## BANANA GROWING AT THE GUELPH COLLEGE

WM. HUNT, O. A. C.

A FINE bunch of bananas has been grown and matured in the greenhouses of the Ontario Agricultural College,



Canadian Grown Bananas

Guelph. The bunch weighed 60 pounds at the time of cutting, January 11, and there

were 180 bananas in all on it, or to use a commercial phrase, 10 hands of fruit, averaging 18 fingers or bananas to the hand. In point of size it compared very favorably with the large bunches seen in fruit stores, grown in the West Indies or tropical America, although it is not of the same variety usually grown there commercially.

The variety grown at the college is *Musa Cavendishii*, or Chinese banana, being a native of the warmer parts of China, and is better adapted for greenhouse culture than the African or tree banana. The stem of *Musa Cavendishii*, from the base to the crown, where the bunch of fruit makes its appearance, is seldom over five feet in height. The bunch is produced from the centre of the stem, at the base of the stalks of its immense leaves. A small portion of some of them can be seen in the illustration. Some of them were over three feet in width at the broadest point and over five feet in length, giving the tree a majestic tropical appearance. The stem commenced its growth in June, 1903, from the ground, so that it has taken about 20 months to grow and mature its fruit. After fruiting the stem is cut down, as it commences to decay at once, and a young tree or sucker is ab-

lowed to take its place. Usually the root produces a number of these suckers, but in greenhouse culture only one is allowed to remain, the rest being cut away when quite young.

The Chinese banana tree produces a shorter and broader bunch of fruit than the West India or tree banana. The individual fruit is also shorter and thicker than the African and West India type. As to its quality, the general verdict of the students and others of the college and Macdonald institute, among whom the bunch was distributed, was that the quality was even bet-

ter and richer in flavor than those usually purchased in fruit stores. This probably arises from the fact that the bunch in question was allowed to reach its full growth before being cut from the tree, while those sold in stores have of necessity to be cut too early, and before the bunch has reached its full size, owing to the time occupied in reaching the point of consumption. The best time to cut greenhouse grown bananas is as soon as any of the fruit shows signs of coloring. Cut at this time and hung in a warm room they ripen splendidly in 10 or 12 days.

## WHERE FLOWERS BLOOM IN WINTER

**A** FLORAL enterprise Canada has cause to be proud of is that conducted by Messrs. J. Gammage & Sons, of London, Ont. An idea of the extent of the business they control may be gained when

of an editorial representative of The Canadian Horticulturist to be shown over their immense establishment during February by Mr. Wm. Gammage, who is now the head of the firm. So perfectly was the tem-



Interior View of One of the Mammoth Modern Greenhouses

perature in the greenhouses under control it seemed like summer although the thermometer outside stood at 10 degrees below zero and a blizzard was blowing. This impression was heightened by the lovely odor, of which the air was full, from spring flowers, such as narcissi, hyacinths, lily of the valley and tulips. This big business has been develop-

ed since 1880 by Mr. J. Gammage and his two sons, and is the result of hard work and constant, careful attention to details.

The first conservatory entered had thousands of young palms about 12 inches high.

On being asked where the firm obtained such healthy stock Mr. Gammage replied that they were secured from seed grown by themselves. Their firm is the only one in Canada which grows this seed to any extent. They also grow all their own rubber plants, which are obtained by a process known as moosing. This consists in cutting the stem of the plant about half way through, inserting a small piece of wood in the cut, to prevent it growing together, wrapping about two handfuls of sphagnum moss around the wound and binding it on tightly. By keeping the moss constantly moist it causes the plant to throw out new roots. After sufficient of these are formed the new plant is placed in a pot of soil. It usually makes a much stronger growth than those started by other means.

The second greenhouse visited was filled with *primula obconica*.

such as it had never been the fortune of the representative of The Horticulturist to see before. Such trusses of bloom and healthy foliage are very rare. Over 25,000 of these are distributed every year by this firm to all parts of Canada. In another house were some of that very best of house fern, the *asparagus plumosus*, of which Gammage & Sons grow over 30,000 plants.

On entering the house where the stock plants of chrysanthemums are kept the first thing noticed was the fact that all the plants were in the bench, not standing under them in boxes as is usually the case. The result is that the cuttings taken from the plants

are very sturdy and free from disease. The firm usually sends out over 100,000 chrysanthemum cuttings every season. Not content with having all the very best standard varieties they send to England every year for the latest new kinds. They find it quite unnecessary to go to the United States for stock. One can hardly grasp the extent of their chrysanthemum business until told that they ship over 30,000 blooms every season. They have customers from Halifax to Vancouver, to whom they are continually shipping. The extent of their trade can be understood best when looking



A Section of Messrs. J. Gammage & Son's Trial Grounds

over their orders for bulbs to arrive next fall, where such items appear as 12,500 tulips, 50,000 hyacinths, 50,000 narcissus, 60,000 lily of the valley, besides thousands of other bulbs, such as Dutch and Roman hyacinths, lilies, crocus, azaleas, etc., which they import direct from the growers.

Being asked his experience with the Bermuda lily Mr. Gammage replied that there is not nearly as much disease in Bermuda bulbs as formerly, but he considered the Japan Lily (*lilium longiflorum*) much the better bulbs. The lilies which are being forced for Easter are in splendid condition. At that season they usually dispose of 5,000 plants.



**Seedling Pelargonium, Fred Mitchell**

The rose houses were found to be in excellent condition. Three beds of American Beauties looked splendidly and will be in full bloom at Easter. They also have some splendid Bride and Bridesmaids roses. Meteor and Liberty roses not being of the best, will be discarded, and General McArthur, a new red rose shown for the first time in Canada last season, will be grown in their place.

A new range of three houses 450 feet long by 21 feet wide, is devoted almost entirely to carnations. Many of the leading varieties are grown to perfection. One bench of Enchantress was particularly good. The men working in the greenhouse were making carnation cuttings, of which over 100,000 are required to fill the orders received each season. Among the many new varieties grown is the White Lawson, which has proved to be as good as the original, Mrs. F. W. Lawson. Another specialty of Messrs. Gammage & Sons is pelargoniums. They recently purchased the entire stock of standard varieties and novelties from Mr. F. Mitchell, of Inverkip, who is now in charge of this department. Mr. Mitchell

has devoted a great deal of attention to hybridizing the pelargonium. That his efforts have been crowned with success is demonstrated by the fine collection in the catalogue. Among the many good varieties is one named after Mr. Mitchell, an illustration of which appears in this issue. The color is a white ground shaded to a dark blotch at the top.

Messrs. Gammage & Sons have become well known to many horticultural societies by filling orders for goods. They supply several societies, as far east as Smith's Falls, and the fact of their selling herbaceous, as well as bedding out plants and bulbs, makes them a favorite. A special discount is allowed to societies.

The firm uses annually over one carload of pots in their greenhouses. They claim to be the largest general florists in Canada. On the trial ground and nurseries are grown large quantities of cannas, hardy phlox, peonies and hardy chrysanthemums, besides many perennials, which are becoming more popular for growing in gardens. This part of their trade is being developed. In the wholesale catalogue for 1905 are listed many of the most popular varieties of fern, including some very fine Pieroni, of which an engraving is shown.

Every part of Messrs. Gammage's establishment is constructed and worked on up-to-date methods. All the buildings and branches are connected by telephone. In the retail store most of the local orders for flowers are filled. The firm does most of the floral decorating in the vicinity.

At the recent Fruit, Flower and Honey Show in Toronto Messrs. Gammage captured many of the best prizes, including first prize and challenge cup for the best 12 varieties of chrysanthemums, first prize for the best 25 varieties, first prize for the best 12 of one variety, first prize for the best six crimson varieties, and many other prizes for chrysanthemums and roses. They took prizes on everything they exhibited.

## A PROVINCIAL VEGETABLE GROWERS' ASSOCIATION

A well attended meeting of the vegetable growers living in the vicinity of Toronto and Hamilton, held in Toronto early in February, it was decided to form a provincial vegetable growers' association, similar to the Ontario Fruit Growers' Association. The following committee was appointed to draft a constitution and arrange for organization: Messrs. W. Carter, Dover Court Road; George Syme, jr., Carlton West; John McKay, Norway West, and R. Larkin, Todmorden, representing the Market Gardeners' Protective Association; W. C. Emery, of Aldershot; R. H. Lewis, A. E. Bates and E. J. Mahoney, of Hamilton, representing the Hamilton Tomato Growers' Association, and H. B. Cowan, of Toronto, editor of *The Horticulturist*.

The meeting was presided over by Mr. J. D. Evans, president of the Market Gardeners' Protective Association, who explained the objects of that association. It was organized a number of years ago to try and secure more protection for their industry. A statement of the duties imposed by Canada and the United States on garden produce had been prepared and a delegation had paid two visits to Ottawa to urge their views on the government. They had received assistance from the Montreal and Ottawa gardeners, but had not secured what they desired. Had Mr. Tarte remained in the government, he believed they would have accomplished something, as Mr. Tarte had shown himself much interested.

Mr. C. C. James, Deputy Minister of Agriculture, said the department had been trying to get in touch with the market gardeners. The department had nothing to do with the question of protection, as its work was educational. Were the vegetable growers to organize the department would be only too glad to cooperate and to assist the organization in every way possible. The market gardeners have been doing fairly well, but they might do better if still more

intelligent methods were employed in their work.

The importance of the vegetable interest was shown by Mr. Cowan, of Toronto, who stated he understood some \$3,000,000 is invested in the industry in and about Toronto alone. There are 30 or 40 sections in the province where vegetables are grown extensively for canning. The market gardeners should have a provincial association, just as the florists, both professional and amateur, and the fruit growers have. The recent Fruit, Flower and Honey Show was a result of this organization, and it had been most successful. The various associations receive grants from the government, and the market gardeners might were they to organize and show good reason why they should be assisted. An annual convention should be held, which would result in much benefit. Their work should be principally educational. They should have an official organ, such as the other associations had. He outlined a plan of organization.

Mr. E. J. Mahoney, of Hamilton, expressed his approval of the views set forth by Mr. Cowan. The Hamilton tomato growers have had an organization for three years, and their position is much better in consequence. He offered some suggestions as to organization and submitted the Hamilton form of petition for increased protection. The tariff on market garden produce proposed was much the same as that in force in the United States. They did not wish to prevent goods coming in which they did not grow, but they wished to avoid injurious competition. They did not want ad valorem but specific duties.

Mr. R. H. Lewis, Hamilton, advocated a committee to work out the details of organization and report at a subsequent meeting.

Mr. J. W. Rush, Mimico, related how their little local association had accomplished a good deal, instancing a reduction in the price of many of their seeds. He put in a

word for *The Canadian Horticulturist* and asked how many of the market gardeners were subscribers.

Mr. A. E. Bates, Hamilton, emphasized the benefit the tomato growers' association had been, and said steps had been taken to extend over the province. They had been supplying four canning factories with about 200,000 bushels. As to protection, he had at one time sent celery to Toronto, for which he got 70 to 75 cents a dozen, but had been driven from the market by the Michigan growers, who sold it at 30 cents.

After some further discussion it was unanimously agreed to form a Provincial Market Gardeners' Association, the plan of organization to be arranged by the committee already mentioned. The gathering was an enthusiastic one. It was generally felt that a provincial association will be of great value to the growers. A meeting of the special committee will be held Wednesday afternoon, March 1, after which a mass meeting of vegetable growers that will be representative of the province will probably be arranged for.

## FERTILIZERS FOR EARLY TOMATOES

W. W. HILLBORN, FRUIT EXPERIMENT STATION, LEAMINGTON, ONT.

I HAVE every confidence in chemicals as fertilizers for early tomatoes. We are, however, paying too much for the ready mixed article, which we cannot always get in the right proportions. I have had the best results from buying the chemicals sepa-

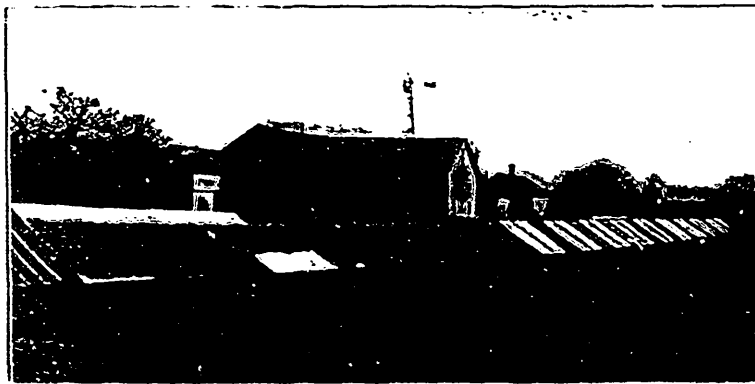
solved bone, and acid phosphate, and shall make a number of experiments and hope to get some information that I have not been able to find in literature on the subject. One of the important problems to be solved is the right mixture to produce the best crop

of early tomatoes. Nearly all the ready mixed fertilizers contain too much nitrogen and not enough phosphoric acid and potash. On this account the first blossoms do not set but drop of.

Weather conditions must be taken into account. With a cold, wet spring as much nitrogen can-

not safely be used as when the conditions are more favorable. I want to get at the right mixture for an unfavorable spring, for we are never sure of the weather until after the fertilizer is in the soil.

Plow barnyard manure under to form humus as it needs darkness and moisture.



Mr. J. L. Hilborn's Cucumber House, 20 x 206 Feet, Essex County.

rate, but have experienced considerable difficulty in pulverizing nitrate of soda, muriate of potash, etc. I am building a cheap machine to grind such material, and will run it with a two-horse power gasoline engine that I bought for pumping water. I shall use a large quantity of nitrate of soda, muriate of potash, sulphate of potash, kaimit, dis-

## Early Cucumbers in a Cold Frame

W. T. MACOUN, HORTICULTURIST, C. E. F.,  
OTTAWA, ONT.

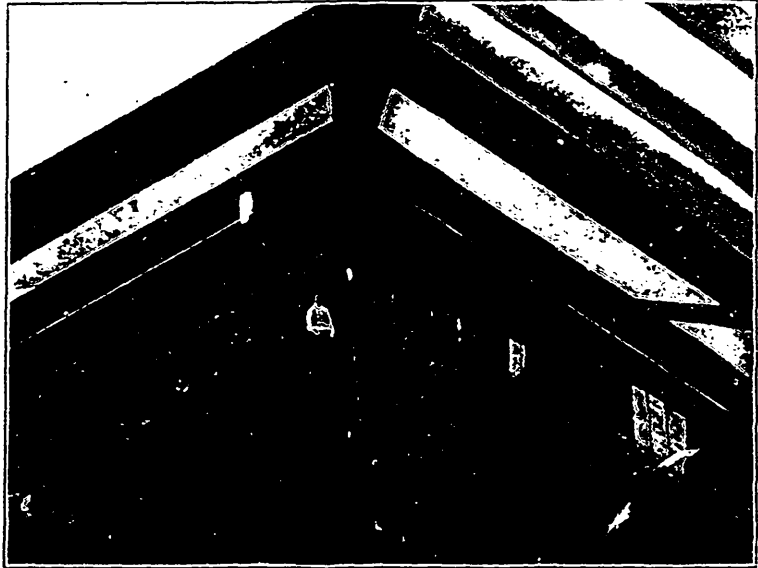
I have tried for several years with varying success to raise early cucumbers in a cold frame. The frame is permanent with about a foot of earth dug out except six inches near the sides. About two feet of leaves are tramped down each fall and covered with six or eight inches of earth, which is taken out annually. Lettuce is planted on this as early as possible, and in a five-sash frame five or six cucumber plants are set the beginning of June, often in full flower, from six-inch pots. White Spine seed is used and some manure is put in when they are planted, but I can never get fruit before the middle or end of July, when I always secure a good crop. I have tried planting earlier without lettuce and 20 or 30 plants; also pinching vines and artificial pollination of bloom, but have seldom succeeded, and the early planted ones were no more forwarded than the later. I tried keeping the sash on at night and putting it down for the day, but the results seem always about the same as the early blooms always drop. Could you kindly give me an idea as to the likely cause. I tried taking off the sash altogether the middle of June, as well as watering under the leaves so as not to wash the bloom. English cucumbers are ready the first, but are not generally liked.—(A. J. Collins, Listowel, Ont.)

There are several probable causes of the cucumbers not setting well. In the first place it would seem as if the soil at time of planting cannot be in very good condition for the cucumber plants. There would be very little heat in the leaves in the frame by the time the cucumber plants were set out and after having watered for several weeks beforehand for lettuce, the soil is probably cold and possibly sour, conditions which are very unfavorable to cucumber plants. The

plants are too far advanced when they are transplanted to the frame and thus receive a severe check.

Most of the first blooms are male flowers and hence would not be expected to set. The flowers of cucumbers are very sensitive to cold and if chilled by removing the sash in a cool time, or if chilled with cold water, would be likely to fall without setting fruit.

I should advise using about a foot of good fresh manure instead of the leaves for the



**Interior of Cucumber House After Plants Are Set**

During March the vegetable growers in Essex county who force vegetables for the early market start most of their work. One of the pioneers of this industry is Mr. J. L. Hilborn, of Leamington, in whose cucumber house the above view was secured.

lettuce, and sowing the cucumber seed among the lettuce. After the cucumber plants are in bloom, and when the days are warm remove the sash in the day time, as pollination will be better if this is done. Avoid using cold water.

In growing cucumbers for pickles it will generally pay to apply 50 or 60 tons of stable manure to the acre, as the yield varies from 150 to 500 bushels an acre.

## Fertilizers for Tomatoes

JAMES TITTERINGTON, ST. CATHARINES, ONT.

**F**OR early tomatoes I use a fertilizer manufactured in the United States. The guaranteed analysis of it is four per cent. nitrogen, eight per cent. phosphoric acid, and seven per cent. potash. I have had very satisfactory results from its use.

I generally broadcast about 500 pounds to the acre, harrowing it well in. I also use about the same quantity when setting out the plants, putting a small handful in each hill, mixing it well with the soil. The plants are set four and a half feet apart each way. I try to get part of the plants out as early in May as the weather will permit, using round peach baskets to cover them on cool nights. I have always found that from the first set plants, even if small, we get our first ripe tomatoes.

## Tomatoes and Cauliflower

**I** SOW my tomato seed in hot beds about the last of March," said Mr. James Conboy, of North Dovercourt to a representative of *The Horticulturist* who visited his place. "As soon as all danger of frost is past I set the plants out in rows four feet apart and 30 inches apart in the row. To set them any farther apart is only wasting land. To grow tomatoes successfully it is not wise to make the land too rich, as they run too much to vines, and the fruit is scanty. The chief point to watch is continual cultivation to conserve moisture and keep down all weeds. The best commercial varieties here are Dominion Day and Atlantic Prize.

### GROWING CAULIFLOWER.

"I grow good cauliflower because I have good soil and do plenty of cultivating. About May 24 I scatter the seed in rows about eight inches apart. Between July 1 and 12, on a cloudy day, I set the plants out in rows three feet apart and 20 inches apart

in the row. In case I fail to get a dark day I give the young plants one good watering and then none only what Providence sends.

"Good soil, with a coat of ordinary stable manure, ensures a good crop of cauliflowers the first season, and the land is left in ideal condition for an onion crop the following spring. From my experience I conclude that a dark loam is most suitable for cauliflowers. The best paying varieties here are Gilt Edge and Early Selected Dwarf Erfult."

## Tar in the Greenhouse

**T**HE lettuce in my brother's greenhouse," remarked Mr. G. Sime, of Carlton West, recently, "has died, and he thinks it is due to the fact that he put tar both on the inside and the outside of the boards used in the walls of the greenhouse. After the lettuce was planted it grew all right but died within two or three days. As there was nothing else unusual about the greenhouse it seemed probable that the odor from the tar was the cause of the trouble."

"That was it," broke in Mr. R. Larkin, of 599 Eastern avenue, who happened to be present, "I tarred the bottoms of the trenches in my greenhouse and it killed all my green stuff. Later on I took the trenches out and I had no trouble with my plants."

"I had tar paper in my celery house," said Mr. F. F. Reeves, of Humber Bay, "and it was possible to taste the tar in the celery. There was manure on the outside of the house, and I think it prevented the odor of the tar from escaping. I do not use tar paper now, having double boarded the celery house instead."

Good seed is essential to a good garden. Cheap seed may mean a little saving at the start, but its effect will be seen in the harvest. Beware of the cheap seedsman.



# The Canadian Horticulturist

The Only Horticultural Magazine in  
the Dominion.

## OFFICIAL ORGAN

ONTARIO FRUIT GROWERS' ASSOCIATION.  
THE POMOLOGICAL AND FRUIT GROWING SOCIETY  
OF THE PROVINCE OF QUEBEC.  
PRINCE EDWARD ISLAND FRUIT GROWERS'  
ASSOCIATION.

H. BRONSON COWAN, Editor and Business Manager.

J. J. BELL, Associate Editor.

W. G. ROOK, Advertising Manager.

1. **The Canadian Horticulturist** is published the first of each month.

2. **Subscription Price** \$1.00 per year, strictly in advance entitling the subscriber to membership in the Fruit Growers' Association of Ontario and all its privileges, including a copy of its report. For all countries except Canada, United States and Great Britain add 50c for postage.

3. **Remittances** should be made by Post Office or Money Express Order, or Registered Letter. Postage Stamps accepted for amounts less than \$1.00. Receipts will be acknowledged on the address label, which shows the date to which subscription is paid.

4. **Discontinuances**—Responsible subscribers will continue to receive *The Horticulturist* until the publishers are notified by letter to discontinue, when all arrearages must be paid. Societies should send in their revised lists in January; otherwise it will be taken for granted all will continue members.

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

6. **Advertising Rates** quoted on application. Circulation 5,500. Copy received up to the 24th. Responsible representatives wanted in towns and cities.

7. **Articles and Illustrations** for publication will be thankfully received by the editor.

8. **All Communications** should be addressed:

THE CANADIAN HORTICULTURIST,  
TORONTO, CANADA

## THE NEW MINISTER OF AGRICULTURE.

The appointment of Mr. Nelson Monteith, as Minister of Agriculture for Ontario, has been received with general satisfaction by those in close touch with the agricultural conditions of the province. As a graduate of the Ontario Agricultural College, a member and ex-president of the Experimental Union, and a regular attendant at the Winter Fair at Guelph, Mr. Monteith has been in close touch with many of the most important agricultural organizations in Ontario and in this respect is by far the best qualified member of the new government party for the important position to which he has been appointed.

Mr. Dryden is freely admitted to have been the most successful minister of agriculture Canada has ever seen. Some of the most complimentary remarks in regard to Mr. Dryden's fourteen years of administration have appeared recently in the Conservative press of Canada. Following such a man, every allowance will have to be made for Mr. Monteith until he has had opportunity to thoroughly acquaint himself

with the many lines of work centered in his important office. Mr. Monteith is still a young man, he is thoroughly informed in regard to our agricultural conditions and is desirous of seeing his work developed along the best lines. There is, therefore, no reason apparent why he should not prove equally as successful as his predecessor in filling the important position of Minister of Agriculture of Ontario.

## THE FRUIT DIVISION.

The British Columbia Fruit Growers' Association, at its annual convention in January, passed a resolution strongly opposing the proposal to place the Dominion Fruit Division under the control of the Dominion Dairy Commissioner. Seldom has the feeling of any class been as strongly, as quickly and as unanimously expressed as in this matter affecting the interests of the fruit growers of the Dominion. Provincial fruit growers' associations from Prince Edward Island to British Columbia have expressed their disapproval, in addition to which numerous small local associations, such as the Hamilton District Fruit Growers' and Gardeners' Association, have not hesitated to place themselves on record as opposing such a move. Fruit growers are proud of their industry and will not be slow to resent any action that even appears to reflect on its importance.

When it was recently announced that three new commissioners had been appointed by the Dominion Minister of Agriculture, one for live stock, one for dairying and one for seeds, fruit growers felt they had been overlooked. As the fruit division had not been united with the dairy division, fruit growers have been content to let the matter stand as it is, but within a year the Department at Ottawa may expect to receive a demand from the fruit growers of Canada that they shall be recognized by the appointment of a fruit commissioner.

## FRUIT GROWERS VS. DEALERS.

At the Provincial Fruit, Flower and Honey Show last November the opinion was expressed by the fruit growers who made exhibits that at future shows it should be advertised that exhibitors would take orders for fruit. It was pointed out that if the citizens of Toronto once find they can secure high class fruit at the show many will make it a point to order their fruit each year direct from the growers. Such a privilege, it is believed, would be appreciated by the householders and would tend to greatly increase the number of exhibits at the show. Several exhibitors at the last show filled orders for fruit to be sent to all parts of Canada and the United States, and even to Mexico and Great Britain, the prices paid being very satisfactory. This feature should be developed.

The objection has been raised that if the fruit growers are allowed to take orders direct from consumers, the business of the commission dealers and even of the grocers in Toronto, is likely to be injured. This objection does not meet with much sympathy from the growers

and is not likely to appeal to the citizens of Toronto. An attempt will be made next fall to bring the growers and consumers into closer touch in the manner indicated. It is possible this movement may have far reaching results.

#### SEVERAL APPLICANTS.

Three applicants for the \$10 prize offered by The Canadian Horticulturist to the reader purchasing goods to the greatest value from advertisers in the January issue, were received during February. The successful winner was Mr. W. H. Bunting, of St. Catharines, whose purchases of fertilizers from S. W. Marchmont, of Toronto, amounted to \$97.27, and of pots from the Foster Pottery Co., of Hamilton, to \$21.19, a total of \$118.27. The two other applicants were Messrs. Charles Mackey, of Thornbury, who bought \$114 worth of nursery stock from C. W. F. Carpenter, of Winona, and Mr. C. W. Webster, of Stoney Creek, who procured 760 trees and vines worth \$47 from E. D. Smith, of Winona.

Having failed to win the \$10 prize Messrs. Mackey and Webster are being sent special premiums offered by The Horticulturist to every reader who purchases goods from advertisers in the magazine and who inform the advertisers that they saw their advertisement in The Horticulturist. The money offer is open to horticultural societies who purchase from our advertisers. Readers should bear in mind that when they buy from our advertisers they are entitled to a special premium free and that they are helping to further improve The Horticulturist.

The demand of tomato growers for an advance in the price paid for tomatoes by the canners is a reasonable one. The cost of labor, fertilizers and everything used by the growers in the production of their crop has increased to the point where an advance in their returns is a necessity. While the canners might be forced to ask the consumers more for their goods the difference in price by the can would be so slight it would not materially affect the demand. If the growers will take a firm stand and stick together they may depend on securing a favorable reply to their request. The growers must combine to fight a combine. Their greatest enemy will be weak-kneed growers in their own ranks who fear to hold out. The determination shown by the growers is an augury of success.

At the annual convention of the Ontario Association of Fairs and Exhibitions, held in Toronto February 14-16, the delegates voted in favor of having the Agriculture and Arts Act so amended that horticultural and agricultural societies will not be brought into conflict in regard to their government grants. As representatives of the horticultural societies of the province took the same stand at their convention last November the time has come when a change should be made. Some arrangement is needed by which horticultural societies will re-

ceive their grants in proportion to the work they are doing. It will be a most difficult matter to devise a satisfactory scheme and members of societies should give it careful attention.

Are you watching us grow? Never before has The Canadian Horticulturist carried as many or as valuable advertisements as those in this issue. Look them over; they are interesting reading. If this progress continues we will soon add several more pages of reading matter which will greatly strengthen all our departments. We intend to make The Canadian Horticulturist the best horticultural magazine published on the continent, and it is a question if it is not that already. Most of the other magazines specialize on some one line.

At last we have heard from the vegetable growers. Several attempts have been made to form a provincial association but these have never gone much beyond the immediate localities of the promoters. Prospects are bright for the early formation of a strong provincial association. Such an organization will not only benefit the growers but the horticultural interests of Ontario. Let us unite in wishing the movement God-speed.

During 1905 The Canadian Horticulturist will not give premiums of plants or shrubs to subscribers. While these premiums have been appreciated by many subscribers in the past they have often proved a disappointment to the recipients. This year the money, hitherto used to send out these prizes, will be expended to improve the magazine and all our subscribers will reap the benefit. A reduced subscription price is offered for clubs of new subscribers and to societies.

Copies of the index of The Horticulturist for 1904 are ready for distribution and will be sent to any address upon receipt of a one cent stamp.

#### Want the Tariff Changed

The Hamilton District Gardeners' and Fruit Growers' Association has started an active agitation to secure changes in the tariff on some fruits and vegetables. Petitions are being circulated and widely signed asking that the tariff on strawberries, potatoes, tomatoes, peaches, cabbage, cucumbers, watermelons, muskmelons, beans and celery be removed, so that Canadian producers may have the benefit of the Canadian markets and not be forced to suffer as heretofore on account of foreign products coming into competition with theirs.

These petitions are being circulated in the vicinity of St. Catharines, Dunnville, London, Dundas, Bartonville, Winona, Stoney Creek and many others. Thousands of signatures have already been secured. Growers in other sections who would like to circulate petitions may secure a form by writing to James A. Stevens, Box 175, Hamilton, Ont.

## SELLING CANADIAN FRUIT IN GREAT BRITAIN

The charge that certain British importers of Canadian fruit have had an understanding whereby they have been able to keep down the price is not supported either by Mr. A. W. MacKinnon, Canadian Commercial Agent at Bristol, Eng., and formerly chief of the Dominion Fruit Division, or by Mr. Grindley, Chief Inspector for the Department of Agriculture at Liverpool. Letters on this subject have been received by *The Horticulturist*. In his letter Mr. MacKinnon writes as follows:

"It is utterly impossible for me to endorse such charges of dishonesty on the part of brokers here, without reflecting upon the just and the unjust alike, and hearsay evidence is not sufficient to convict even the individual accused, much less an entire class of merchants. On the other hand, I have always recommended growers to unite in such a way as to enable them to conduct their own sales, either for a fixed price in Canada, or by means of auction or private sale under the supervision of one of themselves in England. The old saying is true in the fruit business as elsewhere, if you want a thing done well do it yourself.

"No one can possibly have the interests of the growers as fully at heart as a committee of themselves, and, therefore, I recommend once more the cooperative plan to all progressive growers. While I think the Ontario growers occasionally get more than their fruit is worth, owing to peculiar market conditions at the moment of sale, the surest way for them to get just values is for the British buyer to make his purchases in Canada, subject to inspection, and acceptance or refusal at the Canadian port. Growers would then take the risk of the rail journey to the seaport, after which the buyer would assume all risks."

### CHARGES DISCREDITED.

In his letter, which is addressed to Mr. W. W. Moore, Chief of the Markets Division of the Department of Agriculture, who wrote to him at the request of *The Horticulturist*, as mentioned in the February issue, Mr. Grindley writes as follows.

"I have your letter asking for a statement regarding the charges of fraud that have been made against the Liverpool fruit brokers. Some time ago a letter, written over the name of Mr. George A. Cochrane, of Boston, appeared in the *New York Journal of Commerce*, which was copied by the Canadian press. At the

time the letter came under my notice I did not consider it worth attention, there being no specific charge to warrant a special investigation. The bulk of the American and Canadian apples shipped to Liverpool are sold by auction at the Commercial Sale Room by an association of fruit growers. A full description of the manner in which these fruit sales are conducted will be found in Bulletin No. 19 (new series).

"Mr. Cochrane states in his letter that the fruit auctioneers are fair, but that the dealers manage at the auctions to secure the most desirable lots, and to resell the apples at private sale at high prices.

"These sales are attended by several hundred buyers from all parts of Great Britain. The competition is so keen that there is no chance of forming rings or of a dealer or buyer having a lot of fruit knocked down at a lower price than the actual market value. The hundreds of other buyers present would not tolerate such work. The people who buy at these sales are in the wholesale trade, and many buy to reship to different parts of Great Britain and Ireland, and naturally expect a profit.

### PRINT A CATALOGUE.

"Each of the fruit brokers who belong to the Fruit Brokers' Association prints a catalogue giving full details of fruit sold at each sale with prices realized. A rule of the association stipulates 'That no prices shall appear in printed catalogues, except those actually obtained, and at which invoices are issued to buyers, other than owners.' This rule, which is strictly enforced, prevents bogus sales; and the printing on the catalogues of the actual prices realized prevents sending the shippers fictitious account sales.

"Another rule specifies that all goods offered in saleroom belonging to buyers must be indexed at end of catalogue, and receivers other than auctioneers cannot bid for their own fruit. Our department has had a seat in the Commercial Sale Room for the past three seasons, and Mr. Carter, our Liverpool inspector, who has been connected for some years with the British fruit trade, is present at nearly all, if not all, the sales, and neither he nor myself have ever seen or heard of a case which would warrant such an impeachment of the honor of the members of the Liverpool Fruit Brokers' Association, as was made by Mr. Cochrane."

## THE PROSPECTS FOR EARLY VEGETABLES

The Winnipeg market would take early vegetables if we could get them early, but I do not think it pays for the trouble, owing to the fact that our arrangements are all made for early vegetables, such as tomatoes, cabbages, cukes, beans, and all that kind of truck, early in the season. Prices are gradually going down in the south and are very low. The southern vegetables invariably interfere with the early products of Ontario growers. I do not, therefore, hold out any inducements for a profitable business along this line. There is no argu-

ment at all as far as the quality is concerned, as the Ontario vegetables are certainly very superior. When it comes down to vegetables, however, quality is largely thrown aside, and I do not think, as already stated, it would pay to increase the production to any great extent.—(G. M. Hunt, Manager Fruit and Produce Exchange, Winnipeg, Man.)

All the early vegetables that we handle in this market would make no material difference to what would be grown in South Essex. We import a few from the American side, but we

can get them shipped in the evening and have them here the next morning at 10 o'clock, while from Essex it takes 2½ days. We consider

it would not pay for Ontario growers to ship to this market.—(The Macpherson Fruit Co., Winnipeg, Man.

## FRUIT TRANSPORTATION MATTERS DISCUSSED

P. W. HODGETTS, SEC'Y. ONT. FRUIT GROWERS' ASSOCIATION.

The Transportation Committee of the Ontario Fruit Growers' Association met in Toronto, Feb. 15, to outline what action should be taken in reference to transportation grievances. Mr. Jas. Hardwell, chief traffic officer of the Railway Commission, met the committee to discuss the question of ventilated and frost-proof cars. Owing to the number of systems in use and the diversity of opinion in respect to their relative value it was decided to put off any decision on this matter until another year. In the meantime extensive experiments will be conducted. With the consent of the railways, four or more cars of tender fruits will be shipped during September or October from the Niagara district to the western markets in the same train. These cars will be of the various patterns now in use, including the Wicks, Bohn, Hanrahan, New York Central Produce, and Canada Atlantic. Thermographs will be placed in each car so that accurate records of the temperature during the trip will be kept.

Later in the season the same plan will be carried out with respect to apples, a number of

the various type of cars being loaded at Belleville or Trenton and shipped by the one train to the seaboard under similar conditions. This latter test will be to ascertain the desirability of the cars for protection from frost. It is estimated that 25 per cent. of the apples sent out from Ontario during the late fall and winter are frosted en route and arrive at their destination in a slack condition.

The question of rates was considered. The rate on apples to the seaboard is altogether too high. The rate on carload lots from Buffalo to New York, a distance of 425 miles, is 24 cents per barrel, while the rate from St. Catharines to Montreal, a distance of 400 miles, is about 40 cents. A sub-committee of Messrs. Bunting, McNeill and Graham, was appointed with authority to correspond with and interview the railway authorities with a view to better equipment and service, and at the same time to secure if possible a reduction in rates. Failing to get proper concessions from them the association will take active measures to press the claims of the fruit growers before the Railway Commission.

## PRICE OF TOMATOES AND CORN

The market gardeners of Ontario consider they are not receiving a fair price for the produce they supply to the canners, and are taking steps to secure a higher figure. The tomato growers in and about Hamilton made a move some time ago, and at a largely attended meeting of the fruit and vegetable growers of the Niagara district, held at St. Catharines, January 28, a resolution was passed defining their position and demanding a better price. The following is the resolution as submitted to the meeting by a committee appointed to draft it: "We, the undersigned farmers and gardeners of the Niagara Peninsula, after taking into consideration the increased cost of the manure and labor required in growing and handling the crops of tomatoes and corn for the canning companies, have found that we cannot continue growing these crops at the present prices with any fair remuneration for our work. But we will agree to grow for the season of 1905 tomatoes at 30 cents per bushel and sweet corn at \$8 per ton (the seed furnished free to the grower) and sign any fair form of contract agreed upon between the growers and canning companies."

The resolution was signed by a large number of the growers, and steps will be taken to se-

cure the names of all the growers in the district.

Among those who took part in the discussion were Messrs. C. M. Honsberger, president, in the chair; Robert Thompson, W. C. McCalla, Geo. A. Robertson, A. Pay, Angus Shaw, J. A. Collins, W. H. Bunting, Murray Field and T. Nickerson. Mr. W. A. Emery, of the Hamilton association, was in attendance and gave valuable assistance.

The canners combine, which controls nearly every factory in the district, has announced that they will require nearly 800,000 bushels of tomatoes, and the factories outside the combine will require about 200,000 bushels. The increase in the price, from 25 cents to 30 cents a bushel, would mean about one-third of a cent per can to the canners, so that, as one speaker pointed out, there is nothing in the threat that the increase would compel them to close their factories.

As to corn, letters submitted by Mr. McCalla from the canners stated that they were paying \$8 a ton, which they stated is more than is paid in any part of the United States. He pointed out that this is incorrect, \$10 being paid in some places. The meeting took a very firm stand in favor of better prices. The increase demanded is five cents a bushel on tomatoes and one dollar a ton on corn.

We have found The Canadian Horticulturist a very good advertising medium.—(The Winona Nursery Co., Winona, Ont.

Enclosed find \$1 for renewal. The Canadian Horticulturist is well worth it.—(R. Brodie, Westmount, Que.

## THE HORTICULTURAL SOCIETIES ARE ACTIVE

The Smith's Falls Horticultural Society held its annual meeting in January. The former president, Dr. J. S. McCallum, was re-elected; S. E. Arnold was elected secretary-treasurer, and a strong staff of directors was appointed. Reports read showed that good work had been done.

The receipts for the year were \$288.23. There was \$153.95 paid out for trees, shrubs, plants and bulbs for distribution to members and for four beds of bulbs of different kinds in public park; \$88.40 for The Canadian Horticulturist and pamphlet on bulb culture; \$1.63 for work on beds in park, and expenses of delegate to the Toronto convention, leaving a balance of \$24.25 on hand. The list of members for 1905 numbers 107.

### Oakville Doing Good Work

Attendance at the annual meeting of the Oakville Horticultural Society was small. Officers elected: Pres., James Waldbrook; sec. and treas., J. Cavers. At the first meeting of the year, held late in January, a resolution was passed favoring the amendment of the Agriculture and Art Act so as to provide for government grants to horticultural societies, to be apportioned on a basis independent of the district agricultural societies, and for effective work done by each society. A distribution of plants to members was ordered.

A proposal to duplicate grants for flowering shrubs and perennials made by the boards of

the town schools and of two neighboring rural schools, not exceeding an aggregate sum of \$25, was discussed and left over for further consideration. Action has been taken to secure a boat service to Toronto for the benefit of the fruit growers and also in conjunction with Burlington and Clarkson's to obtain lower rates from the express companies on shipments of fruit to O'Harve and Montreal. Notice was given that the desirability of establishing a canning factory would be discussed at the next meeting.—(J. Cavers, Sec.-Treas.)

### Toronto Carnation Show

The annual carnation show of the Toronto Electoral District Society, the Toronto Horticultural Society, and the Toronto Gardeners' and Florists' Association was held February 16 and proved a most pleasing affair. The show was not an extensive one, as it was held rather early in the season, and several of the exhibits from the United States did not arrive on account of the railway blockade. The principal competition was for the challenge cup for the vase of best carnations. There were nine entries and the award went to the Chicago Carnation Co., of Joliet, Illinois, who scored 95 points. The prize flower was a beautiful white carnation, Lady Bountiful.

The largest exhibitor of carnations was Mr. J. H. Dunlop, of Toronto. Other exhibitors were the Chicago Carnation Co., Wm. Findlay, of Brampton, and Charles Turp, of Toronto.



## FLOWERING PLANTS, SHRUBS AND PERENNIALS

SENT BY MAIL  
OR EXPRESS.



THAT IS OUR  
SPECIALTY.

Don't fail to get a copy of our **SPRING** Catalogue.

### Canadian Plants for Canadian People

OUT IN MARCH.

## The Webster Floral Co., Limited, Hamilton, Can.

The Leading Canadian Florists, Nurserymen and Seedmen

**SEEDS  
THAT  
SUCCEED**

## "THE PIONEER SEED HOUSE OF CANADA."

ESTABLISHED 1850.

### SPECIAL OFFER

**No. 6. Floral.** 1 pkt. each Alyssum, Balsam, Calliopsis, Eschscholtzia, Dianthus, Linum, Larkspur, Mignonette, Pansy, Petunia, Schizanthus and Zinnia—12 pkts. Retail value 60c, for 25c, postpaid.

**No. 7. Floral.** Bruce's Royal Nougay Sweet Peas. Ten exquisite distinct varieties. Retail value 50c, for 25c, postpaid.

Send for our handsome illustrated catalogue of Seeds, and Everything for Farm and Garden. 88 pages. FREE.

## JOHN A. BRUCE & CO.,

HAMILTON, - ONTARIO.

Seed  
Merchants

Mr. Findlay also showed some beautiful violets. Several lots of exceedingly well grown ferns, showing high culture, and that were much admired, were exhibited by Mr. Joseph Bennett, of Montreal.

The collection of cut flowers, which took first prize, and which were shown by Mr. Dunlop, consisted of roses, lillies of the valley, Bermuda lily, tulips, daffodils, narcissus and hyacinths. They made a fine display. The competition for a collection of flowering plants on a space not exceeding 50 square feet, arrangement to count, was between Manton Bros, of Eglinton, and J. H. Dunlop, of Toronto, who took the prizes in the order named. Messrs. Manton's collection included cyclamens, ferns, hyacinths, begonias, azaleas, lilacs, etc., while Mr. Dunlop's included ferns, azaleas, lilacs, rhodendrum, Bermuda lily, etc.

**What Hespeler Has Planned**

The new officers of the Hespeler Horticultural Society are: Pres., David Rife; sec., Robert Davis; treas., J. E. Warren. A board of nine directors was appointed, which was given full power to act in the interests of the society. The directors have decided to hold an exhibition in the fall and to offer prizes.

Each member will receive fruit trees, or plants and seeds this spring according to their choice. A special packet of flower seeds will be given to each member, and in the fall at the exhibition special prizes will be given for the

best display of flowers grown from the seeds given out. Another distribution of plants will be made to school children, with a request that they attend to them, and at the fall show enter them for competition.—(Robert Davis, Sec.

**Brantford's Year's Program**

The new officers of Brantford's Horticultural society are: Pres., D. Dempster; sec., R. W. Brooks; treas., J. H. Adams. At the annual meeting it was decided to subscribe for The Horticulturist for all members. It was decided also to hereafter hold the regular meetings on the second Tuesday in each month.

It is intended to supply 1,000 packages of flower seeds to each school room in the town. The children are requested to report on the growth of these seeds. Prizes will be offered for best results secured. If finances allow, prizes will be offered for best kept lawns, boulevards, etc., but only those of amateurs.

**British Columbia Fruit Growers**

The following are the officers of the British Columbia Fruit Growers' Association for 1905, as elected at the recent convention of the association: President, T. W. Stirling, Kelowna; 1st vice-president, Thos. A. Brydon, Victoria; 2nd vice-president, J. C. Metcalfe, Hammond; 3rd vice-president, Jas. Johnstone, Nelson; secretary-treasurer, W. J. Brandrith, Ladner; executive committee, T. W. Stirling, J. C. Metcalfe, R. M. Palmer, H. Kipp, W. J. Brandrith.



**TREES OF ALL KINDS**

Our Stock of  
**APPLE TREES**

better than ever

Thousands of Stark, Ontario, Spy, Baldwin, and all standard varieties ready for Spring delivery.

Also a full line of Ornamental Trees, Plants and Vines.

Write for beautiful NEW CATALOGUE.  
Salesmen Wanted.

HELDERLEIGH  
NURSERIES.

**E. D. SMITH, - Winona, Ont.**

**The Seaforth Society.**—The officers of Seaforth Horticultural Society for 1905 are: Pres., Wm. Hartry; sec.-treas., Wm. Elliott. On Feb. 8 an interesting and very instructive lecture was delivered by H. W. Brown, B. A., of the Collegiate Institute staff, who took *Gladiolus* for his subject. It is the intention of the directors to have a lecture monthly during the season and also to encourage the planting of flowers and shrubs on the church grounds. Membership last year was 111. This year it already numbers 112, with prospects of more.—(Wm. Elliott, Sec.-Treas.)

The Toronto Horticultural Society is to be congratulated on the appearance of a neat little prospectus just issued, also the program for the meetings for the entire year. One meeting each month appears on the program. That for February took the form of a carnation show, which is described elsewhere in this issue. On March 7 an "at home" is to be held in the rooms of the society. The April meeting coming on April 4 is to comprise an illustrated lecture on Pruning, by Mr. J. McP. Ross.

New officers for Simcoe Horticultural Society are: Pres., H. H. Groff. sec.-treas., J. Thos. Murphy. Various committees have been appointed for the year, and it has been decided to again make a distribution of seeds to the school children and to hold a fair at the appointed time.—(J. Thos. Murphy, Sec.)

### The Market Gardeners' Protective Association

The annual meeting of the Ontario Market Gardeners' Protective Association was held at Toronto early in February. The excursion committee reported a balance of \$56 after paying all expenses, which amounted to \$363.

The following were elected to office: Pres., J. D. Evans; vice-pres., R. Larkin; sec., F. F. Reeves; treas., John McKay; executive committee, J. W. Rush, G. Miles, Geo. Syme, Wm. Harris, C. Aymer, W. G. Carter, A. Shuter, auditors, R. Larkin, J. W. Rush. It was resolved to hold a banquet March 1, and a committee was appointed to make the necessary arrangements. A resolution was passed approving of the action of the Hamilton Tomato Growers' Association in refusing to sell tomatoes to the canners for less than 30c. a bushel.

The Carnation Growers of America held their annual convention at Chicago, January 25 and 26. The exhibit taken all round, was one of the finest ever held. The growers in attendance numbered about 125, and there would have been more had the weather conditions been more favorable. Mr. J. H. Dunlop, of Toronto, was elected first vice-president. Toronto was chosen for the convention of 1906, but gave way for Boston, which had yielded its claim in favor of Chicago this year. The convention will therefore be held at Boston in 1906 and at Toronto in 1907.

# TREES! TREES! TREES!

We have a full line of Fruit and Ornamental TREES for spring, 1905, at lowest possible prices.

Headquarters for packing dealers' orders.

Farmers wishing to buy first-class stock absolutely first hand and without paying commission to agents, should write to us at once for a catalogue and price list.

Don't wait until the last minute, as you will be disappointed. Please order early and secure the varieties you want. Correspondence solicited.

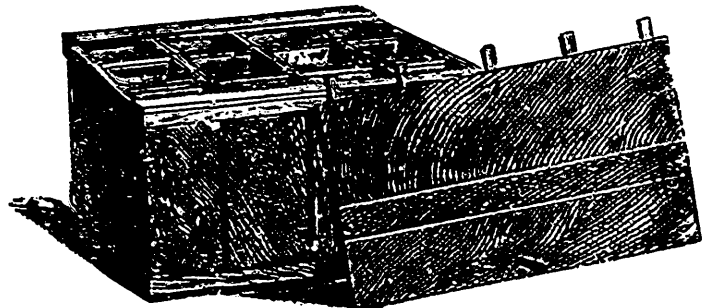
**WINONA NURSERY CO.,**

**Winona, Ont.**

## BASKETS

We are Headquarters for  
All Kinds of Splint Baskets

**FRUIT PACKAGES  
A SPECIALTY**



**THE OAKVILLE BASKET CO.,**

**OAKVILLE.**

TEN DOLLARS for the person who buys Goods to the Greatest Value from Advertiser. In this Issue See Notice in Advertising Columns.

**BLACK NAPLES CURRANTS.**

"Owing to nurserymen having been in the habit of propagating currants from what are known as stools," said Mr. Joseph Tweddle, of Fruitland, Ont., one of our new advertisers, to a representative of The Horticulturist who visited his place recently, "that splendid variety Black Naples has deteriorated in bearing qualities and, unfortunately, has been largely discarded. Where it has been continuously propagated from bearing plantations it has maintained its place as the heaviest producing variety. It is the leading heavy cropper with those who have the genuine stock."

**STEEL POSTS FOR GRAPE VINES.**

Fruit growers are aware that wooden posts are becoming scarce, and are not sufficiently durable and rigid to satisfy their requirements. To meet this difficulty The Canadian Portable Fence Co., of Toronto, have designed a steel post especially adapted to the training and sustaining of grape vines. Their advertisement appears elsewhere in this issue.

They have put on the market an end post, modelled after their sterling standard end post for wire fencing, which is known from the Atlantic to the Pacific. This post weighs 50 pounds. Their intermediate posts consist of a single, stiff angle bar, weighing 7 to 8 pounds. These posts present the combined qualities of lightness, rigidity and permanence. Although

this is the first season that the company has produced grape posts, their reputation for steel fence posts is sufficient guarantee for the new article. Fruit growers of Canada begin to perceive that they do not have to search beyond their own Dominion to find an article suited to their needs.

**TO SECRETARIES OF HORTICULTURAL SOCIETIES**

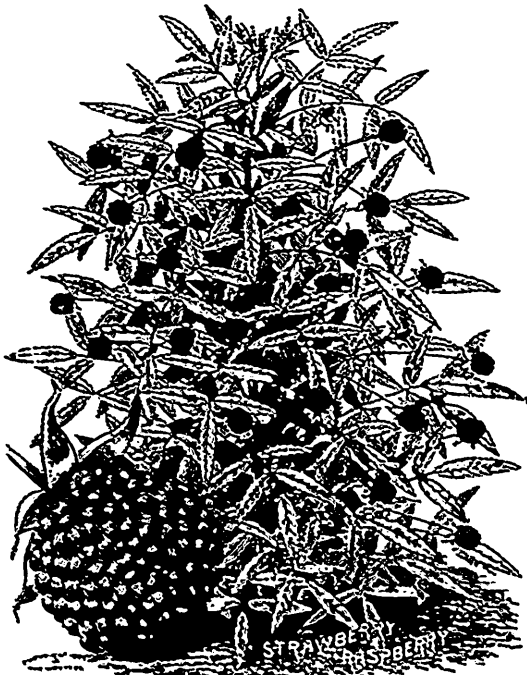
Secretaries of Horticultural Societies should write Wm. Rennie of Toronto for his special discounts to Societies on Vegetable and Flower Seeds and Plants, making their own selections from Rennie's Catalogue for 1905. This is a good offer and one which will no doubt be most acceptable to members

**NURSERYMAN WANTED.**

The Webster Floral Co., of Hamilton, is anxious to secure the services of a practical nurseryman to assist or in charge of their nursery of shrubs, etc.

**Power Sprayers.**—A large enquiry for the Wallace Power Sprayer is reported by F. Hamilton Co., Limited, of Hamilton. Indications point to this as being about the simplest method of obtaining power with the least trouble, there being little to get out of order.

Owing to the advancing and strong tone of the copper market blue vitriol will likely be much higher in price before the season is over.



## SMALL FRUIT PLANTS

## GARDEN ROOTS

Gooseberries—Josselyn, Red Jacket, Downing, Pearl and Houghton

Currants, Black Lees' Pto sic, Champion, Naples.

Currants, Red—Moore's Ruby, Childs' Ruby, Red Cherry, Victoria, Versailles.

Currants, White—White Grape.

Raspberries—Miller, Outdort, Japanese Mayberry.

Black Bonis—Tuzler's Prolific.

Grape Vines—Warlen, Moore's Early, Campbell's Early, Salem, De cware, Eaton, etc

Strawberries—Clyde, Williams, Splendid, Sauporta, etc.

Strawberry Raspberry—Tree Strawberry.

Garden Roots—Asparagus, Pometto Concovert, Rhubarb (divided roots), Linnaeus, Victoria Sage Roots.

WRITE FOR CATALOGUE AND PRICE

# WM. FLEMING

NURSERYMAN

P. O. Box 54      OWEN SOUND, ONT.



# Grapes Currants

FOR SALE BY

## JOSEPH TWEDDLE

FRUITLAND, ONT.

Grape-vine Specialist, twenty-five years experience. The largest grower in Canada.

Good stock of first-class currants. Special lines of genuine Black Naples. Stock guaranteed to be from heavy bearing plantations. : : :

WRITE ME FOR A PRICE ON YOUR ORDER



New Rose Crown Comet Aster, Pkt. 10c.

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—TO—

## Horticultural Societies

Members can make their own selections from Rennie's Catalogue for 1905.

*Secretaries will please write for Special Discounts*

Catalogues supplied free to members.

**WM. RENNIE, TORONTO.**

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# ARNOTT'S COMPLETE CHEMICAL MANURES

(CONCENTRATED SOLUBLE PLANT FOOD)

## SPECIAL BRANDS

—FOR—

MARKET GARDENERS, FLORISTS, VINE AND FRUIT GROWERS.

SOLD UNDER GUARANTEE OF ANALYSIS.

Contain NO Organic Matter, Refuse Materials, Sand, or Filler.

NO Harmful Mineral Acids to counteract Plant Food or check growth.

FOUR TIMES AS MUCH IMMEDIATELY AVAILABLE PLANT FOOD AS OTHER MANURES

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THE SUCCESSOR TO THE PICK AND SHOVEL.

BEAVER  
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WILL PAY FOR ITSELF IN  
ONE DAY.

The Pick and Shovel  
Combined in one char-  
acter of ground; no  
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results with loose soil,  
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**FRUIT GROWERS and FARMERS**

The Southern Fruit Grower is the best, most practical fruit paper to read. 24 to 40 pages every month for a year. Send 10c and 10 names of fruit growers and get the paper 6 mos. on trial. Sample free. Southern Fruit Grower, Box 10, Chattanooga Tenn.

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this  
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**EVERGREENS**

Forest trees, nursery grown and hardy everywhere. All sizes for all purposes, at lowest prices. 50 bargain lots, all first class, prepaid, \$1 to \$10 per 100. Catalogue and bargain sheet free. D. Hill, Evergreen Specialist, Dundee, Ill.

**A GIFT OF \$10.00**

Will be given the reader who buys goods to the greatest value on or before Apr. 15th, 1905, from the advertisers in this month's issue of The Horticulturist. - - -

Readers must notify advertisers that they saw their advertisement in this paper.

When applying for the \$10 bonus, they must inform this office of the name or names of the advertisers they dealt with, and the value of the goods they purchased from each.

Application for this bonus must be made to this office on or before Apr. 18th, 1905.

Address,

ADVERTISING MANAGER,

The Canadian Horticulturist, TORONTO, ONT.

**WANTED**

6,000 READERS

OF THIS MAGAZINE TO  
INSPECT OUR PRICES.

Pæonies, ten leading varieties, 25c each,  
\$2.50 per doz.

Pæony Festivia Maxima, 75c each.

Clematis Jackmanii, the best rich purple,  
50c.

Clematis Henryii, the best white, 50c.

Ampelopsis Veitchii, three year old, 50c.

Anemone Queen Charlotte, "Double"  
light pink, 10c.

Hydrangea Paniculata Grandiflora, three  
year old, 2 to 3 feet, 25c.

Special prices to Horticultural Societies.

**J. GAMMAGE & SONS,**  
LONDON, ONT.



### APPLE TREES \$5.00 TO \$10.00 PER 100

**Currant Bushes and Grape Vines, also Poplar Trees, for sale at bargain prices, boxed free.**

These trees, plants and vines must be sold at bargain prices, as we are overstocked with them. We have a surplus of both Carolina and Lombardy Poplars. Help us to sell 1,000,000 first-class trees, shrubs and vines as described and priced in our large new catalogue, which is mailed free when requested by postal card. Established 25 years \$100,000.00 capital. Trees true to name, boxed free. Let us price your list before buying elsewhere. Mention where you saw this advertisement and we will mail you a copy of Green's Fruit Magazine.

Address **GREEN'S NURSERY CO., Rochester, N. Y.**

## THE GREAT HERBERT RASPBERRY

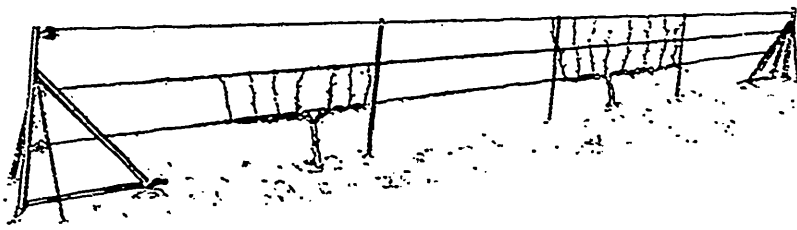
Originated at Ottawa, Ont., tested for 14 years beside all the leading kinds, and has completely outclassed them all for hardiness, productiveness and all-round desirability. Plants now offered for sale for the first time. The Experimental Farm, at Ottawa, report on it this year as follows: "Very strong grower, good crop, fruit large to very large, bright to deep red, moderately firm, juicy, sprightly subacid, good flavored, good to very good quality; promising from all points of view. Should be quite firm enough for shipment. Yield from 12 plants, 50 baskets of fruit."

For further information about this great berry, write

**W. J. KERR, Nurseryman, RENFREW, ONT.**

## STEEL GRAPE-POSTS

Pat'd in Canada



Made in Canada

**Posts any Height: Suited to any number of wires.**

**Ratchet on end post to adjust each wire.**

**Like our Standard End Post for Wire Fence, this post is guaranteed not to Heave, Rot or Burn.**

### IT IS INDESTRUCTIBLE

Write for particulars. We are prepared to deal direct with the Fruit Growers of Canada. The best method for you and the best method for us.

**The Canadian Portable Fence Co., Limited, Toronto, Canada**