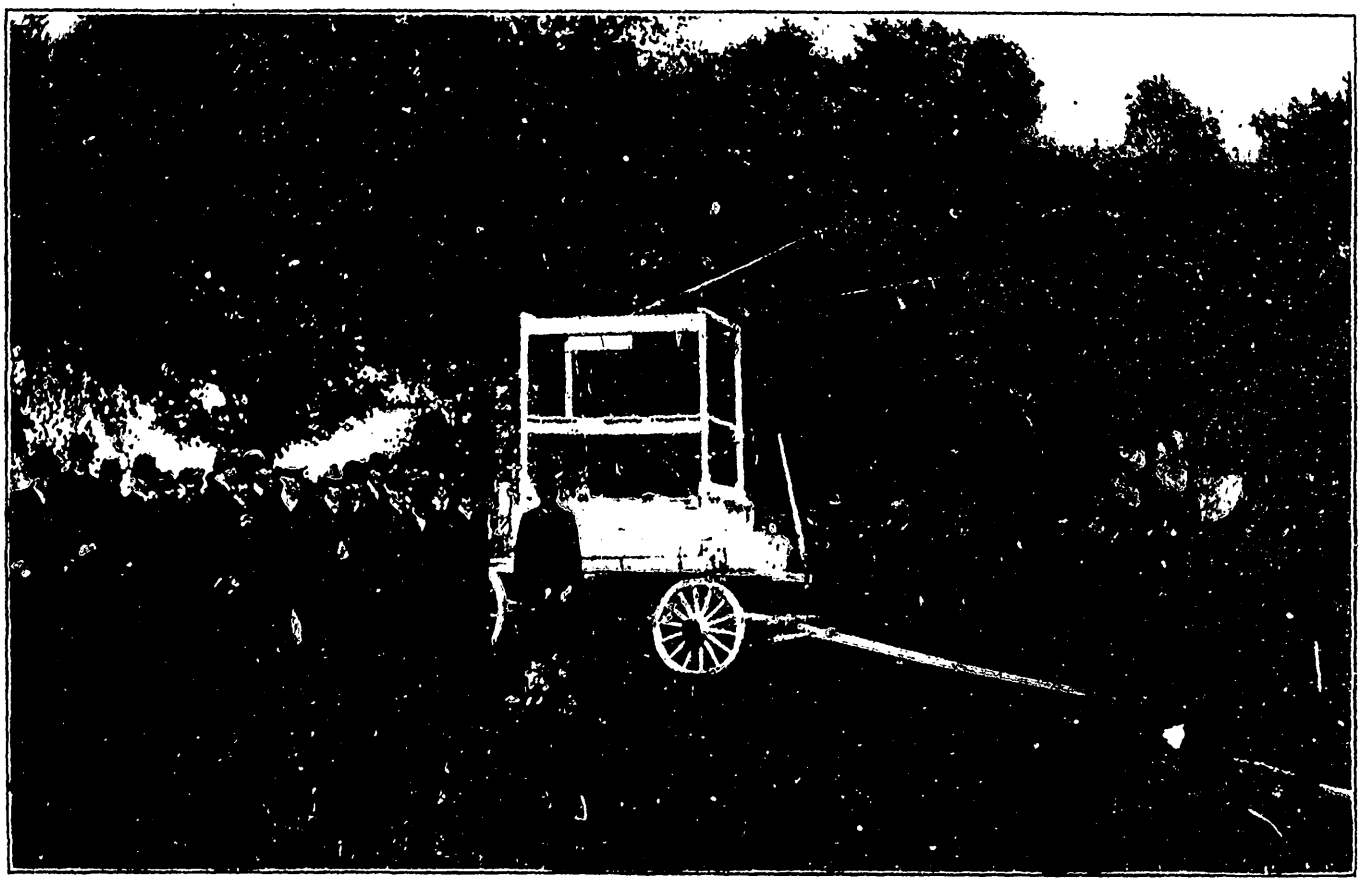
Pages Missing

OCTOBER

OCTOBER morning! how the sun
Glitters on glowing shock and sheaf,
On apple crisp with mellow gold,
On wonder-painted leaf.

October evening! look, the moon,
Like one in Fairyland benighted!
Out-doors Jack Frost bites sharp; within
Good! our first fire is lighted.

L. J. HUNT.



An Exhibition of Power Spraying in an Oxford County Orchard.

The power spraying conducted during the past summer under the direction of the Dominion Fruit Division, Ottawa, in a number of orchards near Ingersoll, has resulted [illegible] September 21st leading officials, with orchardists of the district, visited a number of the orchards that had been sprayed to compare them with others that had not been sprayed. [illegible] it is published in this issue. The illustration shows an exhibition that was given of power spraying with Mr. Alex. McNeill, Chief of the Fruit Division, holding the nozzle to the right, and Mr. P. W. Hodgetts, Secretary of the Fruit Growers Association, directing the nozzle on the left. At the front of the wagon to the right is Prof. H. L. Hutt. (Photograph taken especially for The Canadian Horticulturist.)

The Canadian Horticulturist

OCTOBER, 1904

VOLUME XXVII NUMBER 10

SPRAYING TESTS AGAINST THE SCALE

PROF. R. HARCOURT, ONT. AGRI. COLLEGE, GUELPH.

LAST spring a considerable quantity of the lime and sulphur mixture was used in the Niagara district in combating the San Jose scale. It is gratifying to note that wherever it has been thoroughly applied the results have been most satisfactory.

About the middle of July and again one month later, in company with Prof. Lochhead, P. Hodgetts, Secretary Fruit Growers' Association, J. Fred. Smith, Glanford, Chief San Jose Scale Inspector, and Robt. Thompson, St. Catherines, I visited a number of peach, plum, and pear orchards in the St. Catherines district which had been more or less badly infested with the scale. In every instance where trees were sprayed with the lime and sulphur mixture the scale was checked, just in proportion to the thoroughness with which the spraying was done.

From what was seen in the orchards and from the statements of many of the fruit growers, there seems to be no doubt that this mixture will destroy the scale, but to do so it must come in direct contact with the scale, as any parts left uncovered in the spraying, act as a seed bed for the reinfestment of the whole tree. As it is practically impossible to cover every crutch and crevice on the tree, the use of the lime and sulphur spray may not exterminate the scale, but it has been clearly demonstrated that the pest can be controlled, provided the spraying is carefully done.

One very pleasing feature in connection with this matter is that, while the cost and labor entailed in preparing and applying the lime and sulphur mixture is considerable, it is not so great as was anticipated, and is not regarded as an insurmountable difficulty. Further, its application has apparently greatly reduced the amount of leaf curl.

In the June number of the Horticulturist (page 240) it was announced that several barrels of lime-sulphur and sal soda, and lime-sulphur and caustic soda mixtures had been prepared and applied. It will be remembered that the advantage of these mixtures over the ordinary lime and sulphur is that they do not require boiling and thus this tedious part of the manufacturing process is saved. A thorough inspection of the trees sprayed with these preparations shows that they have been about as successful in destroying the scale as that made by boiling. More experimenting will have to be done before it can be said definitely that it will always give as good results, but enough has been done to demonstrate that this method of preparation

can be followed with a reasonable assurance of success by those who cannot get the mixture from the steam boiling plants.

In the preparation of the mixtures, using either sal soda or caustic soda and not boiling, it is very essential that a quick slaking lime be used. If the lime slakes slowly there is not enough heat generated to cause the required chemical changes to take place and the substance is practically useless. The indications from this year's experiments are, that, if good, quick slaking lime is slaked with warm water and the sulphur and sal soda added so as to get the full benefit of the heat developed, a good useful spraying material is obtained. The ease with which the lime-sulphur and sal soda or lime-sulphur and caustic soda mixtures may be prepared will greatly recommend them to the small fruit grower, who has not sufficient trees to warrant the installing of a steam boiling plant.

A half barrel lot of caustic soda solution (1 pound in 5 gallons of water) was applied on peach trees quite badly infested with the scale without any appreciable good results being secured.

A solution of sulphide of potassium (1 pound in 2 gallons of water) was also applied in two different peach orchards. While the results noticed were not so satisfactory as when the lime and sulphur preparation was used, the scale was sufficiently checked to warrant the continuation of experiments. Moreover, if potassium sulphide will destroy the scale, it is reasonable to expect that the allied substance sodium sulphide, which has the advantage of being much cheaper, will also do so. Here also there is room for further experimentation.

Fruit Growers Who Have United

W. D. A. ROSS, SECRETARY.

THE Chatham Fruit Growers' Association has a membership of about 60, although the bulk of the fruit is grown by about 20 of the members. The largest orchard contains about 1,000 trees just coming into bearing. This year the directors decided to purchase a power spraying machine and sprayed a number of orchards.

Members are charged four cents per tree for each spraying of average trees, or 16 cents for the four sprayings. As the fruit is handled by the association the members have the privilege of paying either when the work is done or out of the proceeds of fruit sales in the fall as they prefer. We have two men to handle the two loads of hose, one carrying six nozzles, the other eight, and a driver in addition to the two hands for spraying. We made a special effort to induce the members to prune their trees thoroughly so as to make the experiment as complete a success as possible.

Our association has been in existence for about four years. Previous to that time, however, the members had joined in shipping several carlots during two seasons. In 1900, our heavy fruit year, we shipped 21 car loads. In 1901 the crop was very light and no shipping was done. In 1902 we shipped 42 cars, and last season, another off crop, seven car loads.

Best Paying Apples.—Mr. A. W. Peart, of Burlington, believes the leading varieties of summer apples in his district are Duchess and Astrachan. The color of the Yellow Transparent prohibits it for export trade. Of fall apples, Ribston Pippin and Blenheim rank highest, while in late fall and winter varieties King, Baldwin, Greening and Northern Spy head the list. These varieties, he believes, pay the best in his district.

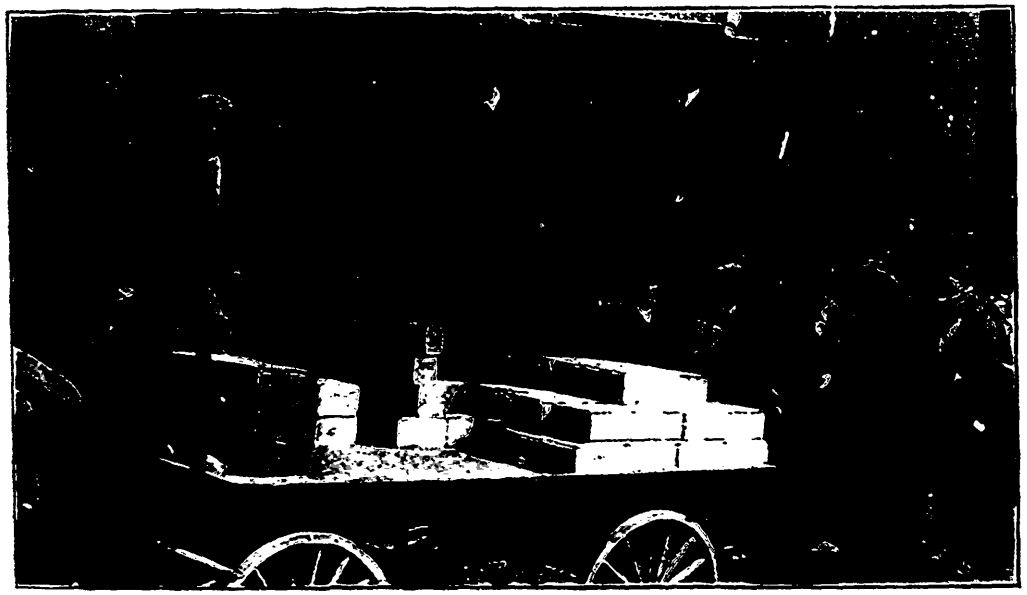
THE VALUE OF POWER SPRAYING DEMONSTRATED

SUCH fruit growers as still remain skeptical or indifferent to the benefits that result from proper spraying should have attended the "perambulating orchard meetings" held September 21 near Ingersoll. Evidence of the value of spraying was furnished in abundance. The gathering was the result of the power spraying demonstrations conducted during the summer in the vicinity of Ingersoll, under the direction of the Fruit Division of the Department of Agriculture at Ottawa.

It is believed power spraying can be done most effectively and cheaply by farmers, who grow fruit on a small scale, if they will cooperate and engage a competent man to look after the work. This man can afford to buy a power sprayer and can undertake the work by contract just as threshing is done for farmers. Where a large number of growers unite such a man can make good wages, while the expense to each grower is light, and he is saved the trouble of undertaking the work himself.

To demonstrate the advantages of this method the Fruit Division, early in the season, induced a number of farmers in the vicinity of Ingersoll to cooperate and guaranteed that the cost would not be more than five cents for each spraying. The farmers agreed to pay five cents per tree for spraying. The contracts were made for spraying 3,300 trees four times. The work was carried out under the supervision of a local man, Mr. J. C. Harris, to the satisfaction of every person interested.

The orchard meeting September 21 was to give the farmers of the neighborhood, and



Loading the Trial Car of Fruit at Grimsby for Winnipeg.

During September two trial shipments of fruit were made from Ontario to Winnipeg to further test the possibilities of shipping fruit to that market. One car was loaded at St. Catharines and the other at Grimsby. The loading of the car at the latter point is here shown. The consignment comprised pears, apples, grapes, peaches, etc. The shipments were made under the direct supervision of Prof. J. B. Reynolds, of the Agricultural College, Guelph, who may be seen standing in the doorway to the right. The Secretary of the Ontario Fruit Growers' Association, Mr. P. W. Hodgetts, is standing on the load. The Horticulturist has received word from Prof. Reynolds that both shipments reached Winnipeg in excellent condition, and that the fruit was considered to be the best lot that had reached the city for some time. The first car was eight days in transit. The prices realized were satisfactory; apples bringing 75 cents to $1 a bushel; pears 75 cents to $1.10 a half bushel; plums $1 to $1.10 per crate of 20 pounds net; grapes $1.40 to $1.65 per crate of 20 pounds net; and peaches $1.10 to $1.25 per box (California package). (Photograph taken specially for The Canadian Horticulturist.)

the public generally, an opportunity to see the marked contrast between the sprayed and unsprayed orchards. Seventy-five to 80 farmers assembled together, with some half-dozen newspaper men, and drove from orchard to orchard that those present might examine the quality of the fruit and make comparisons at first hand. What they saw was a revelation to those present. The fruit in the orchards that had been sprayed was in excellent condition, while in the unsprayed orchards a large proportion of the fruit was practically worthless for commercial purposes. A prominent buyer, Mr. Seldon, of Ingersoll, who was present, stated that the only fruit in the section worth buying was that in the sprayed orchards. The difference in quality was very apparent and convincing as regards the value of spraying.

The meeting was led by Mr. McNeill, Chief of the Fruit Division, and at suitable points Prof. Hutt, of the Ontario Agricultural College, explained different features of orchard practice. He spoke particularly on the question of orchard culture, and noted that, while the fruit was most excellent in the sprayed orchards, Providence had been especially kind, as most of them were in sod and not too well pruned. He recommended, for the general practice, clean cultivation during the growing season and cover crops during the rest of the year.

Mr. Putnam, Superintendent of Farmers' Institutes, spoke most encouragingly of the opening for educational work in the institutes. He expressed the opinion that the work is only beginning, and has in no sense reached its fullest development.

At the close of the meeting Mr. McNeill spoke upon the subject of how to sell the apple crop. Owing to a combination of unfortunate circumstances, not easy to explain, many of the farmers who have the very finest apples are not offered more than 25 cents per barrel, and in some cases can not get buyers at any price. It was pointed out that with the exception of the sprayed orchards there was not an orchard in the neighborhood that would grade more than 25 per cent. of number one fruit, and therefore there was no encouragement for outside buyers to come in. If owners of the sprayed orchards would unite themselves into a cooperative association so that their manager could offer from 3,000 to 6,000 barrels of such fruit as was seen in the sprayed orchards that day there would not be the slightest difficulty in placing these apples on the market at the top price for the season.

As things are, Mr. McNeill said, he could not undertake to ask any buyer from a distance to visit Ingersoll for the small quantity of fruit the growers have to offer, as owing to the poor quality of fruit in the neighborhood, on all except sprayed orchards, there was absolutely nothing to sell. Strong points were made in favor of cooperation in all orchard work, as well as selling, as well as a plea for better methods in fruit growing. The weather was ideal and the meeting was a great success.

There is no use trying to smother out twitch grass. I put pea straw two feet deep over a half acre, but found that it was useless, as the grass grew up through the straw. Covering with straw and burning over is quite as ineffective owing to the roots being so deep. The only way seems to be to root it out.—(A. C. Lee, Paris.

Cost of Apple Barrels.—I have always packed apples in barrels made in Napanee. They cost 35 to 55 cents delivered last season. This year 40 cents is asked. Judging from the amount of barrels required in this section, which will be less than half of last year's needs, there will be no advance on the figure quoted.—(N. B. Hamm, Bath, Ont.

THE BELLEVILLE NURSERIES

SOME of Canada's leading nurseries have recently been described in The Horticulturist. Among these must be included the Belleville Nurseries, at Belleville, managed by Mr. W. C. Reid. While the area of these nurseries seems small, when compared with the mammoth nurseries in the Niagara district the firm fills a field peculiarly its own. Being situated in Eastern Ontario, it is able to produce stock specially adapted to the requirements of that portion of the province. The number of varieties handled being comparatively small enables the management to make a specialty of those produced.

"My object," said Mr. Reid, to an editorial representative of The Horticulturist, who recently visited these nurseries, "is to get hardy stock which will suit the northern climate, and then secure the very best variety of this hardy stock. When I started here some eight years ago, with about two and a half acres, many people said that nursery stock could not be grown successfully at Belleville. However, I have succeeded well enough to now have about 35 acres in nursery stock of different lines.

The home nursery consists of six acres, all of which are inside the corporation. Practically all of these six acres are planted in ornamental stock and comprise evergreens and shrubs of different kinds. One fine block of Norway spruce averaged three to five feet in height when the representative of The Horticulturist visited the place, while another block averaged 18 to 24 inches, making a total in all of about 20,000 trees. Besides these Norway spruce, the

Norway Spruce at the Belleville Nurseries.

A block of Norway Spruce growing in the Belleville nurseries is here shown. This variety of spruce is a very popular evergren from Europe which is being extensively planted in this country. It is valuable for wind breaks, screens and hedges, and is well known as one of the best evergreens for ornamental purposes. (From a photograph taken specially for The Horticulturist).

stock of Austrian, Scotch and Swiss pine, Colorado Blue spruce, Pyramidal and American Arbor Vitae.

In other ornamental stock, Hydrangeas are very noticeable, being large and healthy and very productive of bloom of good quality. About 1,500 of these are in stock, and look well after the extremely severe weather last winter. Other varieties of ornamentals withstood the long winter equally as well with no protection, except what nature afforded. They include three or four kinds of Spireas, Syringa, Weigelias, Japonicas, of different colors; and climbing shrubs, such as Clematis, Honeysuckle, and Dutchman's Pipe. The last-named is hardy and of rare beauty. Another that is worthy of mention is the Trumpet Flower (Bignonia Radicans). This makes a fine show and is very productive of bloom when full grown. I am trying to get a line of perpetual bloomers," said Mr. Reid, and judging from the show of bloom following the severe winter with no protection, success is crowning his efforts.

WHERE THE LARGE STOCK IS GROWN.

A short distance east of the home nursery is a block of nine acres in large stock, of good average size and healthy appearance. The experience of the past eight years has shown that there are enough hardy varieties to make a good collection for any nursery, and so only hardy varieties of apples, pears plums or cherries, are found in the Belleville nursery. The rest of the stock is produced on the Sydney place just out of the town. It, too, consists chiefly of large stock with some grapes and small stock.

"All my stock is grown right on my own place," said Mr. Reid, "and I use my own buds and scions. The only importations are seedlings, on which to bud the different varieties. This I consider important, as it leaves no chance whatever for the introduction of the destructive San Jose scale, or other scale insects. Besides the chances for sending stock not true to name are reduced to a minimum, as the trees off which the buds and scions are taken are known, and a careful plan of labelling is followed out until shipment is made. The results obtained by the Belleville nurseries are interesting, especially to people in northern sections. They show the varieties of stock that will endure winter hardships when in the nursery stage, and if these thrive until large enough to be sold, the older trees may be depended upon to be hardy and give good results. These nurseries have now secured a firm foothold in eastern Ontario. They may be expected to rapidly grow in importance, as the fruit and floral interests of the eastern portion of the province are now making noted advance.

Caustic Soda Not Recommended.—At the request of Prof. R. Harcourt, I tried the caustic soda wash last spring on a few infected peach trees, as a remedy for the San Jose scale. These trees I have examined from time to time, and find that the caustic soda has apparently had little effect on the scale, as these treated trees have all along shown about as many living scale as untreated trees alongside. I consider lime and sulphur the most effective remedy I have used.—(W. C. McCalla, St. Catharines, Ont.

Spot on Fameuse Apples.—"By proper spraying,' said Mr. Jones, of Maitland, to The Horticulturist recently, "I find no difficulty in keeping the Fameuse apples at least 80 per cent. free from spot, taking the results of one year with another. Last year 95 per cent. of my crop was free from spot. To accomplish this, however, I have found it necessary to spray frequently. Some seasons I have sprayed as many as six times, while in other years equally as good results have been obtained from three sprayings.

Hardy Hydrangeas as Grown at the Belleville Nurseries.

Hydrangea Paniculata, a hardy variety, has been grown with great success at the Belleville nurseries. It is one of the best of flowering shrubs. Bloom commences early in August and continues until late in the season. The flowers are pure white changing to pink making a fine effect. Both colors may be seen at the same time.

Plant Lice

PROF. H. L. HUTT, ONT. AGRI. COLLEGE, GUELPH.

What is the matter with two of my trees? They were grafted last year to Baldwins and trimmed this spring. In June the grafts were covered with a green louse, which looked like aphis, and lived on the bark of the young grafts. They were as thick as could be. One side of one tree is dead. The louse seemed to turn into a small fly. The trees were sprayed twice with Bordeaux and paris green.—(W. T. Nutt, Zenda, Ont.

The insects on your trees are no doubt aphides. They often appear in quantities on the young wood, as well as on leaves, when it is in a soft growing condition. Winged forms of the insect appear through the summer and spread from place to place. It is in this way that they are distributed.

The best remedy is to spray with whale oil soap or kerosene emulsion, which should be applied as soon as possible before the leaves upon which they are feeding curl over and cover them. Bordeaux mixture or paris green will have no effect upon them, as they suck the juices of the plant and do not eat the portions covered with paris green.

We hear a great deal of the Niagara district as "the fruit growing district of Canada," but I believe we have a section here that will compare very favorably with it for fruit production. When the fruit growers here once realize this it will be the means of stirring them to greater activity both in the care of their orchards and the planting of new ones.—(W. D. A. Ross, Kent Co., Ont.

WAYS TO PREVENT MICE INJURING ORCHARD TREES

W. T. MACOUN, CENTRAL EXPERIMENTAL FARM.

DEPREDATIONS by mice in winter are usually greatest when the orchard is in sod and when there is rubbish lying about; hence the latter should be removed before the winter sets in. In most cases it is not necessary nor advisable to have the orchard in sod, particularly when there are young trees, although it is highly important to have a cover crop which is also sometimes a harbour for mice.

As mice may be expected every winter in greater or less numbers, young trees should be regularly protected against their ravages. Mice usually begin working on the ground under the snow and when they come to a tree they will begin to gnaw it if it is not protected. A small mound of soil from 8 to 12 inches high packed around the tree will often turn them, and even snow tramped about the tree has been quite effectual.

The cheapest and surest practise is to wrap the trees with ordinary building paper, the price of which need not be taken into consideration as it is so little. Tar paper is also effectual, but trees have been injured by using it and it is well to guard against danger. A little earth should be put about the lower end to prevent the mice from beginning to work there.

At the Experimental Farm we are using in addition to building paper, a wooden veneer which has been found very satisfactory both in protecting the trees from mice and from sunscald. Prof. W. B. Atwood, Horticulturist, Virginia Experimental Station, recommends a mixture of pure linseed oil and white lead to prevent the depredations of mice on apple trees, but does not recommend it except with caution for peach and cherry trees. He says that with 15 years' experience he has never had an apple tree injured by this application.

It is important to buy the white lead and pure linseed oil and mix them, as ready-made paints may have an injurious mineral oil in them. Prof. Atwood advises mixing the white paint and linseed oil to a consistency the same as for an outside coat on a building, and to put a heavy coat on the tree. He claims that once in two years is sufficient to apply. It is also useful in preventing borers. The mixture has been known to injure cherry and peach trees.

DOES CULTIVATION CAUSE APPLE SCAB?

R. J. MESSENGER, B.A., BRIDGETOWN, N. S.

I WANT to take issue with Mr. A. W. Peart, in his statement in a recent issue of The Horticulturist, that clean cultivation in the orchard promotes scab. He is quoted as saying "If anything green is on the soil it has a neutralizing effect on vapors arising from the soil, which tend to promote scab. I think the finest lot of apples sent to the Old Country last year came from an orchard which had been in oats, etc."

In the first place, Nature is so versatile and variable, that the close observer would consider it ridiculous to take one or two of her results and found a theory or law upon it. Some dozen other circumstances may have combined to make that oated orchard yield fine fruit, and since the oats were there, they were hit upon as the cause, when they may have had no effect on the result. This is just to show that too many of us are prone to jump to conclusions.

My knowledge of soil physics tells me that dry earth, such as the mulch formed by clean cultivation, absorbs noxious gases other

vapours, while dry earth is used to prevent the escape of gases in manure cellars and closets.

It would, again, seem to me that no one can deny that cultivation creates a vigorous growth in any plant. The more we cultivate, the stronger, larger, healthier specimens we get, in apples, as well as vegetables and other plants; so that disease of any kind could scarcely have so much effect upon the cultivated ones as upon the uncultivated.

It is my opinion, based on observation for a period of some years, that as a matter of fact orchards with clean cultivation till the middle of the summer give cleaner fruit than those not cultivated.

The Horticulturist recently wrote Mr. Peart, asking for some further information on the subject. The following reply has been received:

"I doubt very much if I could add anything which would throw any light on the question at present, and I do not care to jump at conclusions. In order to see how it appears to work I am not plowing or cultivating two of my orchards this year. What has grown on them I have mown and left on the ground as a mulch. The third orchard I have ploughed and cultivated. I will try to note the difference if any, between the same varieties under disimilar conditions. I expect however, the cleaner fruit on non-plowed soil, but the larger on the plowed.

PEARS AND APPLES FOR PROFIT

"ON the right kind of soil I think pears are even more profitable than apples," said Mr. E. C. Beman, the well known pear grower of Newcastle, to an editorial representative of The Horticulturist, who visited his fruit farm during July. "A good clay loam with a deep clay subsoil is the best soil in this district for pear growing. Pears will not bear profitably on a cold sandy subsoil nor where the hard-pan is too near the surface.

"One reason why I prefer pears to apples is that an acre of pears on good land will yield more fruit than an apple orchard of the same size. If the soil is thoroughly adapted for their growth I believe pears will, in the course of a number of years, yield at least 50 per cent. more barrels than an apple orchard will.

"Near here, however, there are a few pear trees which are not doing nearly as well as mine, largely because the soil where they are growing is not suitable. In regard to the returns secured I believe pears net the best prices. My Bartletts last year brought about $4 per barrel, and Willmotts about $2.50 per barrel. My best apples on the whole brought quite a little less than this. The demand for pears is very good, but not quite as strong as for apples. No more care is required in connection with a pear than with an apple orchard.

SOME COMMON TROUBLES.

"I have had considerable trouble with pear psylla and the green fruit worm. For the psylla I have sprayed the trees with a heavy mixture of lime whitewash. The mixture was as strong as the nozzle would spray. This was applied when the buds were commencing to open, and as a result I find it has lessened the psylla considerably. The trees were completely coated with the wash. For the green worm I have sprayed with the paris green and Bordeaux mixture and have found this treatment a great success. The spraying must be done early in the season just when the fruit is forming.

"Bartlett, Buerre Bosc, Duchess, Precoce and Clapp's Favorite are the varieties of pears that have given me the best results. They are all hardy.

Expert Apple Pickers Gathering the Crop in a Bruce County Orchard.

A busy scene in the eight acre orchard of Mr. W. S. Holmes, of Lucknow, in Bruce County, is here shown. The method used by Mr. Holmes is to barrel the fruit off the tree and put the apples under cover as soon as picked. For that purpose a horse and boat or sleigh is kept for hauling the barrels under cover. In Mr. Holmes' opinion too many farmers pick their apples and pile them in heaps, which remain unpacked for days, sometimes weeks, in which condition the fruit is often seriously injured. Often after the apples are barrelled they are left in the orchard subject to the weather. Apples used in this way almost always, Mr. Holmes believes, arrive at their destination in slack condition and sell at reduced prices. Two of the men shown in the illustration, Messrs. W. T. Holmes and P. Headley, are expert apple pickers.

SETTING AND CARING FOR PLUM TREES

MILTON BACKUS, CHATHAM, ONT.

IN digging holes for plum trees dig three feet in depth and fully as wide. Digging should be done in the fall, so as to obtain the benefit of the winter's freezing and thawing.

In setting the trees, stretch a fine wire the length of the row, having the distance apart marked on the wire with either paint or thread. In this way two men will set ready for filling a great number in a day. The distance they should be set apart depends, somewhat, on the system of pruning.

I advocate low heads the shape of an inverted umbrella, severe winter pruning of from one-half to three-quarters of each season's growth. This prevents the trees attaining greater height than about 7 feet, so that pruning, spraying, thinning and packing can all be done cheaply by standing on the ground.

On receiving the trees from the nursery, I cut off the entire top to a bare stub not more than 2 feet long, and form them from a head having 5 to 7 branches. With the above system of pruning a tree, they should be planted not closer than 16 to 20 feet.

In regard to fertilizing, I have used only wood ashes, the land being naturally strong. Frequent and clean cultivation is best. I keep my orchard free from all fungus diseases, except the rot, by spraying as soon as growth begins, with sulphate of copper, and

again with Bordeaux mixture when the fruit has grown to the size of peas.

I have found it simply impossible to control the rot either by spraying, thinning, or pruning, especially in orchards where it has once become established, particularly if rains occur near ripening time. Good American authorities are of the same opinion. Regarding the curculio, I have had no trouble, having to practice thinning whenever there is not a failure of the crop: therefore the remedy I favor is the planting of quite an extensive orchard.

In the matter of varieties I should name the Imperial Gage as the most delicious of all plums, but a shy bearer. The Green Gage is a splendid variety, but a poor bearer. The Pond Seedling, a grand plum, but poor bearer. The Lombard, a rapid grower and a great bearer of fair quality plums. The Bradshaw comes late into bearing, and is a large coarse plum, while Coe's Golden Drop I find a great bearer of magnificent plums, and should consider it the most satisfactory one to plant. The Burbank is a great grower and an enormous bearer of handsome fruit, but like all Japanese plums, of poor quality when canned.

Cultivation and Sod in an Orchard

AN interesting method of treating an orchard is being tried by Mr. W. H. Gibson, of Newcastle, and was lately described to a representative of The Horticulturist who visited his place.

"When my trees are young," said Mr. Gibson, "I trim them so it is possible to cultivate beneath the branches. When they are older, cultivation under the branches is stopped. This spring I planted clover under the branches of my 11-year-old trees, which had been cultivated up to this year. The clover runs out as far as the limbs of the trees extend on each side of the trees. An open space between the rows of trees is cultivated. My idea is that the feeding roots of the trees extend beyond the branches and that they run out into this open strip of land which I cultivate. In this way the trees will receive the benefit of the cultivation, while the trouble of working under the branches will be avoided.

"About nine-tenths of the orchards in my vicinity are put into sod after they begin to bear. I intend to cultivate my orchard in the way described for several years to see how it succeeds. Where I have young trees planted I cultivate a strip of land on each side of the tree as wide as the tree is high. As I find the trees make twice the growth they do when grain or clover is allowed to grow close to them. I fertilize heavily, using 200 loads of barnyard manure in my orchards every year. The fertility of the rest of the farm is maintained by growing clover.

Shavings as Mulch in Orchard

PROF. H. L. HUTT, ONT. AGRI. COLLEGE, GUELPH.

Are shavings taken from a basswood or poplar tree good for mulch around apple trees in an orchard? Will they harbor mice or insects?

F. J. BARBER, Georgetown, Ont.

I AM somewhat dubious about advising the use of a mulch such as you suggest, although I do not see why it should not be better than allowing the trees to remain in sod with no cultivation whatever. I think it would be advisable to try it first upon part of the orchard and note results.

There is no doubt but that it will afford more or less of a harbour for insects, but these, of course, can be kept in check by the regular methods of spraying and banding the trees. Care should also be taken to guard against mice which no doubt harbour in such a mulch. Otherwise, I do not see that much injury can result, except that the roots would in time form more or less near the surface, which would not be serious were a proper mulch maintained.

MAINTAINING THE FERTILITY OF ORCHARDS

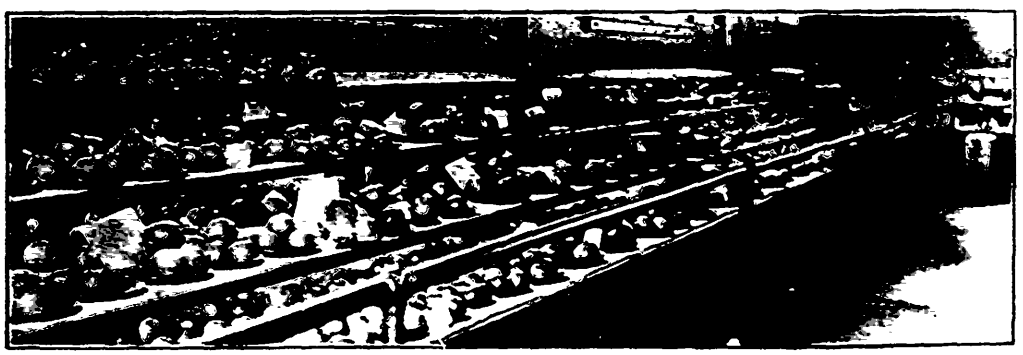
G. FRED. MARSH, CLARKSBURG, ONT.

NO less an authority than Alex. McNeill, chief of the fruit division at Ottawa, is in favor of oats as a cover crop. He says they come on quickly in the fall in spite of dry weather or trampling by apple pickers, and the fact of their dying in the fall is an advantage rather than otherwise, as there is nothing to prevent the farmer going on with the disc in spring.

From personal experience I can see the advantage of the above. In spite of all we may lecture, the fact remains that the average fruit grower only gets his orchards about half plowed before seeding, when he has to stop and bend all his energies to getting the spring seeding done. By the time the rush is over the land is hard, and if not, so hard that it is impossible to plow, the land has lost a large amount of its valuable moisture. If the orchard were seeded with oats there is nothing to prevent giving the orchard a couple of strokes with the disc before seeding, and the straw will prevent any damage being done by the tramping of the horses.

The question: "How shall we maintain the fertility of our orchards?" will be asked by all who heard Mr. Caston, of the Ontario Fruit Growers' Association, make the statement that a large number of the orchards, especially in the older sections of Ontario, are starving for lack of plant food, and that in many cases the deterioration of certain varieties is principally due to lack of food. A statement of this kind coming from such an influential fruit grower should cause us to pause and reflect on how we can economically provide this plant food for the trees.

Some say, use stable manure. That is all right as far as it goes, but is not a complete manure for orchards, having an insufficient amount of potash, and under our present system of growing leguminous cover crops, much more nitrogen than is necessary. But the chief argument against its use for the orchard is that no farmer has more stable manure he can apply with profit to his annual ordinary farm crops, and if he applies it to the orchard he must skimp some other part of his farm, which system, if followed for some time, will eventually run down the farm. Before we in Ontario run down our farms, we had better decide that



Portion of the Apple Exhibit at the Toronto Industrial Exhibition.

While disappointing in some respects, the display of apples at the recent Toronto Industrial Exhibition contained some excellent exhibits, some of which are here shown. The Bay of Quinte district advertised itself by capturing the first and second prize award for the best collections of 40 varieties, the first premium going to Mr. H. Dempsey. The first prize for the best collection of 20 varieties was taken by Mr. H. Marshall, of Hamilton. A revision of the prize list so that commercial varieties may be given more consequence as desirable.

if fruit will not pay to buy fertilizer for, we had better dig up our trees by the roots and plant something else.

TRY LUCERNE CLOVER.

The next question would be, "What shall we use?" Those who are situated near towns can buy stable manure, but for the majority of farmers this is impracticable. Even in favorable cases it is doubtful if for large fruit it will pay for the reasons given above. In some cases, as with small fruits, poor land, or where a proper system has not been followed, it may be desirable for a time to use stable manures, but the successful farmer must get his nitrogen cheaper than paying 12 to 16 cents a pound for it, and he can obtain it for nothing by means of a leguminous cover crop. Of all the different crops advocated, I believe Lucerne clover to be the best, as it will make a better growth in the dry weather, which we usually have in the fall, and also a better root growth than the common red clover, which is favorably known for this purpose. Lucerne is subject to being winter-killed, but this makes little difference where it is sown to be plowed under in the spring. The hairy vetch is also highly recommended for this purpose. Don't sow too early in the season. Remember that it is a full apple barrel rather than a luxuriant cover crop which is wanted. I believe that in dry seasons the fruit grower loses an enormous amount by stopping the cultivator too soon, and as a rule cover crops should be sown a month later than usually advised. Never sow a cover crop until you feel sure that the apples are safe, even in case no rain comes until picking time. This system might not produce such a fine cover crop, but will produce more apples.

Leguminous cover crops will provide all the nitrogen necessary, but something else is required or we will ruin our fruit crop through unbalanced feeding. I firmly believe that the popularity of cover crops, together with the use of stable manure, has had much to do with the cry that Canadian apples are not keeping as well as they did in former years. We all know that an excessive amount of stable manure will grow a large, pale, soft apple, lacking in color, flavor, long-keeping qualities, and that indescribable element often called "snap," for which Canadian apples are noted. I know for a fact that dealers are beginning to keep records in order to find where the poor keeping apples come from. Thus we see we can provide ourselves with an abundant supply of nitrogen and humus, but we can not get in that way the potash and phosphoric acid which are also needed.

USE COMMON SENSE.

Experiment stations recommend a fertilizer containing 2 per cent. of nitrogen, 9 per cent. of potash, and 2 per cent. of phosphoric acid, but if a proper system of cover crops is followed I think we can leave out the nitrogen and use potash and phosphoric acid in above proportions. In order to obtain these materials "common sense" would teach us to use our own waste matters, that is, bone meal and wood ashes, which at present we ship across to the United States to improve the quality of their fruit. In bone meal the steamed will be found more economical than the raw, being less in price and having a higher percentage of phosphoric acid, though lower in nitrogen, which is no detriment in a properly managed orchard.

For the potash we should use the ashes produced at the farm, and in addition thereto the commercial potash salts, particularly sulphate and muriate of potash, which are very high grade, containing 50 per cent. of pure potash, while ashes contain only 5 per cent. on an average. Weight for weight, the potash salts mentioned are worth five times the value of ashes, and as a commercial article the former are usually a more economical source of potash than the ashes,

The Windbreak and the Orchard

IT has been a question, taking one year with another, whether windbreaks do the orchard more harm than good. If there is not much wind during a season, a windbreak may injure the orchard by preventing circulation of air. There is nothing so beneficial in an apple orchard as a full movement of air and plenty of sunshine. Wind breaks often shade the adjoining row of trees and in that way retard their growth, and reduce their fruitfulness. These views were expressed to The Horticulturist not long since by Mr. William Rickard, M.L.A. of Newcastle.

"A windbreak," continued Mr Rickard, "on an exposed side, if properly constructed, is decidedly a benefit. In every case, the windbreak should be so constructed that it will not shade the trees. In a windy year, a good windbreak will undoubtedly be of great benefit.

"The best place a Spy apple can be grown is right out in the open, where it will get all the air and sunshine possible. On the whole, in the average apple orchard, I believe the chances are that as good results can be obtained without a windbreak as with one."

The Best Sized Box

AT the last annual meeting of the Ontario Fruit Growers' Association at Leamington a resolution was passed favoring the bushel box for packing apples. Speaking on this subject to an editorial representative of The Horticulturist, who visited his place, Mr. A. W. Peart, of Burlington, recently said:

"The minority opposed the motion on the ground of scarcity of labor. The most suitable box for the old country trade is 9 x 12 x 18 inches, inside measurement.

"With these boxes women can sort, pack, press, stencil and pile ready for shipment to the station. If you increase the size you increase the difficulty of women doing the work. In fact, some women even object to the weight of the small box. If we cannot secure women, we must get men at double the pay per day, whereas women do the work just as efficiently.

"Some of those favoring the resolution claimed that larger boxes can be shipped as cheaply as smaller ones, but this is not so, inasmuch as on the cars the box goes by weight, and on the ship by cubical contents. I find that the smaller box is best for shipping apples and pears to the old country."

The Exhibit of Pears at the Toronto Industrial Exhibition.

The exhibit of fruit at the Toronto Industrial Exhibition this year was rather disappointing as it was not as large or, on the whole, of as good quality as usual of late years. This was in part due to the injury to orchards caused by the severe weather last winter and to the cool backward summer which had prevented much of the fruit maturing. A portion of the pear exhibit is here shown. Among a few of the more successful exhibitors were Messrs. F. S. Fermnger and W. S. Bunting, of St. Catharines; G. W. Wild, of Hamilton, and F. G. Stewart, of Horner. A new building is greatly needed.

An Apple Tree That Has Died, and Why

PROF. W. LOCHEAD, ONT. AGRI. COLLEGE, GUELPH.

I have an orchard of about 150 apple trees, and one of them has not borne any fruit for three years. Some people say it has the San Jose scale, while others say it is the death sweat. Not knowing for certain what it is, I send you a portion of the tree to see if you can tell me what the trouble is.

W. J. SKIDMORE, Cornwall, Ont.

THE white bodies which you send are a very sure indication of the trouble with your trees. These bodies are fleshy fungi, very similar in structure to ordinary mushrooms, but, of course, much smaller. They are known scientifically as Schizophyllum comune. They are very common on the trunks of many varieties of trees. I have found them frequently on shade trees.

Their presence on the trunk of a tree shows that the tree is badly diseased, and is now beyond recovery. No wonder your tree has borne no fruit for the last three years. Many years ago the spores, or minute seeds which this fungus produces, were blown to this tree, and lighting on some wound or crack, affected an entrance into the interior of the tree. During all this time the fungus threads have been growing, and have been injuring the tree and killing the tissues. After the harm has been done the fungus threads make their way through the bark to the outside and there produce the characteristic white bodies which produce the spores.

If you will examine with a microscope a scraping from the small gills on the under surface of one of these white bodies, you will probably find many small round objects —the spores. You have probably seen large toadstools on the trunks or stumps of old trees. The bodies which you send me are of a similar nature to these large toadstools. They have done all the harm they can before they show themselves on the surface, and there is no use in attempting to cure the disease. The best thing that can be done would be to cut down the trees which show these white bodies and have them burned. Do not allow them to lie about on the ground for they may spread their spores and infect other trees.

Spraying to Prevent Injury By Mice

Is there any cheap and effective spray for field nursery stock applied before or after the first snow, to prevent mice girdling trees?

W. C ARCHIBALD & SONS, Wolfville, N. S.

THE above question has been answered as follows by W. T. Macoun, of the Central Experimental Farm at Ottawa. There is no cheap and effective spray for nursery stock that I know of which can be applied before or after snow, to prevent mice girdling trees. The best preventive is to have the nursery clean in the autumn and from 25 to 30 feet round it. Mice are seldom troublesome where there has been clean cultivation, and no sod nor rubbish near the nursery. If the nursery is not large, each tree might be wrapped with building paper which is very effective in preventing the depredations of mice

Another reply to this question has been furnished The Horticulturist by H. S. Peart, of the Agricultural College at Guelph, he writes, "There is no spray which can be recommended as a certain preventive against mice in the nursery. A wash may be made of one peck of fresh lime slacked in enough soft water to make it of the consistency of whitewash, to which is added while still hot, one half gallon of crude carbolic acid, half a gallon of gas tar and four pounds of sulphur. Stir well. This sprayed on the trunks of the trees in autumn will to a great extent, prevent mice from girdling. Clean cultivation, which keeps down all grass and weeds, will prevent the mice from harboring around trees, thus diminishing the danger of attacks.

FORECASTING FROSTS

PROF. J. B. REYNOLDS, ONT. AGRI. COLLEGE, GUELPH.

A SIMPLE method by which fruit growers can forecast frosts is by means of the Sling psychrometer, the same instrument as is used in determining the humidity of cheese curing rooms. It is a wet and dry thermometer mounted on a frame and attached to a cord for the purpose of swinging it through the air and obtaining the correct reading. Such an instrument, with a proper set of printed tables giving the dew point in connection with the readings of these thermometers, is a fairly reliable method of forecasting frost. For instance, if the reading of the thermometer indicates by the printed tables the dew point of 40 or below, about sundown, there is danger of frost, especially if the sky be clear and the atmosphere still.

USE THE WEATHER BUREAU.

I am inclined to think, however, that the most satisfactory method of prediction is the weather bureau. The weather bureau of the United States, is doing very important work in this connection by warning the fruit growers in California and elsewhere of the probability of frost. If our weather bureau at Toronto could devise some practicable means of communicating with the fruit sections during the day when the prediction is made, the same purpose could be served. I have no doubt that this arrangement will be made in the near future but I think that the movement must originate with the fruit grower. If he expresses a desire to have the forecasts announced to him and an intention to act upon forecasts, and take measures to prevent injury by frost, I have no doubt that the weather bureau would respond willingly and readily to the request. The fruit interests of southern Ontario would be well served by a proper discussion on this subject.

Grape Growing in Eastern Ontario

"I CONSIDER that I have fair success in growing grapes even at this northern latitude," said Dr. McCallum, of Smith's Falls, to a representative of The Canadian Horticulturist, who recently visited his place. "Worden, Delaware, Agawam, Niagara, Moore's Early, Lindley, and Salem," continued Dr. McCallum, "all thrive well here and are productive. Of course they have to be laid down in the winter, and special protection given them. I cover the vines with earth in the fall after the leaves have fallen, before the first heavy frosts come, and leave them there until spring opens, and the weather seems settled. Niagara and Salem are very late ripeners. The Lindley, Salem and Agawam are good keepers. I pack these in cork dust for winter, and have grapes for table use as late as April. With a little special attention," concluded the doctor, "grapes can be grown here as well as in the Niagara district."

Care of Raspberry Bushes

D. BETTSCHEM, VIOLET HILL, ONT.

I PREFER the Cuthbert variety of raspberries to any other. It is hardy, stands the winter well, is very productive, of good rich flavor, and sells well. My bushes are planted in rows about five feet apart, and three feet apart in the rows.

All old canes are taken out after first season is over, and all canes are pruned down to four or five feet high. Strawy manure is used with straw for a mulch, using straw last to keep the fruit clean. A small quantity of wood ashes is also used as fertilizer, which I think is very valuable for this purpose.

FALL FRUITING STRAWBERRIES

ARE there any varieties of strawberries that can be relied on in Ontario to produce crops in the fall? Apparently not. Leading growers in the province who have been consulted by The Horticulturist, all state they have never been able to obtain regular crops of strawberries in the fall although occasionally they have succeeded in securing a few berries. In the United States some growers claim to be able to secure berries regularly every autumn.

Writing to The Horticulturist on this point, Mr. W. T. Macoun, Horticulturist at the Central Experimental Farm, Ottawa, says :

"The year 1903 was particularly favorable for an autumn crop of strawberries, and the question of autumn fruiting varieties received quite an impetus, but in our 16 year's experience at the Experimental Farm we have not found that any variety of strawberry produced enough fruit in the fall to make it worth growing for that purpose."

According to Charles H. Snow, Strawberry Specialist, Cummings Bridge, Ont., the fall fruiting of strawberries is not attached to any one variety. "Clyde, Haverland, Beder Wood, Sin, Dunlop, and Enhance," writes Mr. Snow, "possess this freak at times, and to my knowledge only when the plants have suffered some injury at the proper time for fruiting. During the year 1903 for instance, the month of May and June were excessively dry around Ottawa. The plants blossomed but never made any fruit to amount to anything. The fruiting propensities of the plants had been strongly restricted, and when the rains came about July, the plants shot up, a fresh beautiful green foliage appeared and many strong fruit crowns. The result was that during the latter part of September and previous to fall frosts, we picked quarts of fine luscious berries off numerous varieties. Enhance has had this reputation for fall fruitage, but after growing it for 15 years, only once in that time have I noticed it fruiting in the fall."

Profitable Patch of Blackberries

"ONE and a quarter acres of blackberries have for ten years past yielded us an average of $200 per acre," said Mr. A. E. Kimmins, manager for Mr. E. D. Smith, the well known fruit grower of Winona, to an editorial representative of The Horticulturist recently, who was visiting his place. "The berries are all of the same variety, namely, the Kittatinnies. The land has been given no particular cultivation, simply receiving the ordinary cultivation, consisting of plowing and the use of the horse cultivator. The bushes are set six feet apart so they may be cultivated readily.

"In the fall the old wood is removed and the bushes are trimmed back in the spring, generally in May. This variety of berry is about the most profitable in our section, but outside the peach belt will probably be found to be rather tender. Twelve years ago the land on which these berries are now growing was an old pond bed, filled by a spring. Mr. Smith decided to drain it, which was done at moderate expense. The investment has certainly been a profitable one."

"I do not plow my vineyard in the fall, because it exposes the roots too much to the winter frosts. I plow in the spring, and harrow and cultivate until the middle of August. Nature is then left to attend to it until the following spring."—(A. W. Peart, Burlington, Ont.

We trust The Canadian Horticulturist will continue to improve, as we consider it an authority on horticultural matters.—(J. A. Simmers, seed merchant, Toronto, Ont.

SELECTING GROUND FOR A STRAWBERRY BED

MRS. JOHN GILFILLAN, KIRKTON, ONT. *

IN locating a spot for a strawberry patch, bear in mind that the strawberry is a surface feeder and consequently easily injured or killed by a surfeit of water, or during a severe drought. The land should be well drained and which has been previously planted to hoed crops, so that weeds will give as little trouble as possible. Plow the ground in the fall and again in the spring, while in the meantime a liberal coat of barnyard manure should be given. The plot should be thoroughly cultivated after having been plowed. It is then ready for marking out, which may be done in various ways, with whatever the planter has convenient for the purpose.

Cover strawberry plants in winter, after the ground is sufficiently frozen. A covering of straw or some such material is desirable to keep the ground from freezing and thawing with every change of weather. This covering should be removed from the plants as soon as all danger of severe frosts is over, and placed between the rows. It will conserve moisture so necessary at the growing season, keep the berries from being sanded and also smother out the weeds that would otherwise make their appearance.

* Extract from a paper read at a Woman's Institute meeting.

The Best Sized Greenhouse

"WHAT is the best sized greenhouse for the ordinary florist to build?" was one of the interesting questions found in the question box at the recent meeting of the Canadian Horticultural Association convention held in Ottawa. Mr. O. G. Johnson, of Kingston, in replying to the question said, "The size of the greenhouse to be built must depend altogther on how much money the builder has to spend.

"I would suggest that the width of the house be at least 17 feet, and should extend north and south, with a three and a half foot raised bench each side of the house two and a half feet from the floor. A middle bench or solid bed should be six feet wide. Two paths two feet wide each should extend down the center of the house. The ridge should be eleven feet high, with ventilators 2 x 3 feet each placed 6 feet apart, eight in number, on each side of the house, opening at the ridge. The walls should be four feet high.

"This is not a modern house by any means, but one that is suitable for almost everything that an ordinary florist would need in any small town, with the exception of roses and violets. The best house to build is constructed on these principles, with the exception of different minor arrangements and the number of ventilators.

"In such a house as described, I successfully raised ferns, begonias, fuschias, hydrangeas, and a great many other plants which like a little shade. On the middle bench I grew a mixed variety of geraniums, lilies, carnations, smilax, etc. The east bench was an ideal one for geraniums, pelargoniums, etc. It does not matter so much which way the house is built for the general stock of an ordinary florist, as it does on the man who is in the house. If the builder of the up-to-date modern greenhouse could only build an up-to-date modern florist and throw him in with the greenhouse what a boon it would be."

Do you not think it would be a wise and profitable move on the part of public school boards if a part of every school yard were to be set apart and planted with at least a single specimen of every tree that could be grown in the locality? What an object lesson it would be for the children, and what an improvement it would effect in the appearance of the school grounds.—(P. G. Keyes, Ottawa, Ont.

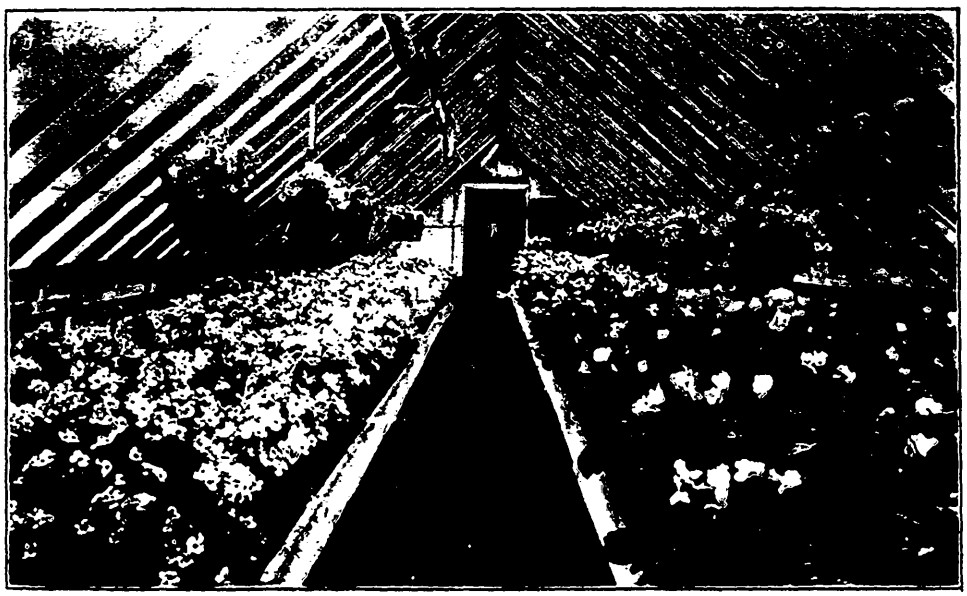
OCTOBER PLANT NOTES

WM. HUNT, ONT. AGRI. COLLEGE, GUELPH.

OCTOBER usually gives us ideal ripening weather for plant life. Too often this matter of plant ripening is lost sight of by plant lovers, in their anxiety to protect their favorites from the first sharp frosts of Autumn ; and place them in security for the winter months.

Plants such as pot hydrangeas, oleanders, fuchsias, tender roses in pots, dahlia and canna roots, etc., are frequently hurried off on the first sign of frost into the unsuitable and unnatural conditions they often have to endure during the winter, without being properly ripened or hardened off before being stowed away. This ripening, or hardening, is very necessary for the successful wintering over of plants that have to be kept in a dormant or semi-dormant condition during the long winter months.

The half-hardy hydrangeas grown in pots and tubs, that make such conspicuous and showy decorative plants during the summer, are often killed out or severely injured by being hurried into their winter quarters—oftentimes in the cellar or basement—without the growth being first properly hardened off or ripened. It is quite possible, if the season is at all favorable, to keep hydrangeas underneath a veranda, or in a shed or out building, until November, if temporary protection be given them on extra cold nights. Five or six degrees of frost at this season of the year, after the plants have done flowering, will not hurt, but rather benefit them, as they are of a decidely semi-hardy nature. Less water should also be given at this season than during the summer. By withholding gradually the amount of water,



Two Popular Varieties of Plants as Grown in a London, Ont., Greenhouse.

Beds of Begonia Gloire D'Lorraine on the left hand side and Cyclamen on the right hand side, are here shown as photographed in the greenhouse of Messrs. J. Gammage & Sons, of London, Ont. These plants are among the most satisfactory that can be grown in the house during the winter. They begin flowering early in November and continue to bloom until late in the spring. No more attention need be given them than any other house plant. Care should be taken to see that they are not allowed to become too dry as otherwise the flowering season is retarded and the flowers become small and of poor texture, both in color and substance. Attention is also required to see that they are not over watered, as such treatment tends to sour the soil, causing the Cyclamen to take a fungous disease which usually affects the plants in the form of the bulb decaying and becoming soft at the top. The leaves and flowers finally drop off. In the case of the Gloire D'Lorraine, the foliage turns yellow and the leaves drop off. The Cyclamen comes in many colors, principally red, pink and white. The Begonia has only two colors, a deep red and a light pink.

this ripening or hardening off process may be materially facilitated. Do not go to the extreme however in this respect, as the soil should never be allowed to get thoroughly dried out before water is given again. Extreme conditions of any kind are usually very dangerous to plant life. In this matter of giving less frequent waterings to plants, it is quite as necessary to avoid extreme dryness of the soil, as it would be to avoid over-watering, while endeavouring to induce a period of semi-dormancy or partial rest.

The variety of hydrangea mostly grown in pots or tubs is the large pink flowering "Otaksa." Another good variety of these half-hardy hydrangeas is the white flowering variety "Thomas Hogg." A good specimen of this is seldom seen even at floral exhibits, probably from the fact that it is less robust than "Otaksa," and harder to winter over successfully. It is a very pretty variety, and makes a pleasing contrast to the pink flowering one.

OLEANDERS, POT ROSES, FUCHSIAS.

ALL of these plants will bear a little wholesome neglect at this time of the year. That is, they may be left to take care of themselves more than when in full growth during the summer. They will not, however, bear quite as severe treatment in the matter of being frozen, or in the partial witholding of water from the roots, as will hydrangeas. As these plants, however, have, in most instances, to be kept in a semi-dormant or resting condition during the winter, they will be benefitted very much by being treated as recommended for the hydrangeas, before being consigned finally to their winter quarters.

Canna roots should be dug up as soon as the tops have been blackened by frost. Unless the autumn season is exceptionally fine and warm and free from frost, canna roots will be better dug up before the surface of the ground has been touched by frost. If it is impossible to dig them before sharp frosts occur, cut the tops off to within about four inches of the ground, and strew the tops over the ground. A few inches in depth of straw or long manure, or any material to keep the frost from touching the tubers, should also be thrown over them as a temporary covering. After digging, store the roots for a week or two in a shed or out-building safe from rain and frost, until the soil adhering to them has partially dried out. Remove them to a warm room or cellar where the temperature ranges from about 40 to 50 degrees. A continuously low temperature near the freezing point will injure canna roots permanently, even when dormant.

Dahlia roots should be dug up before the tubers are touched by frost, and treated as recommended for canna roots, before being stowed in the cellar. Dahlia roots will keep better in a more moist cellar or room than will canna roots. A temperature from 35 to 45 degrees will suit them better than a higher temperature. Wherever potatoes will keep in really good condition through the winter, dahlia roots can be preserved. A dark, cool cellar if not too dry, suits them splendidly. If the cellar is very dry, as many cellars are from having a furnace in them, the roots of both dahlias and cannas would be better preserved if some dry soil or sand were to be placed around and about the tubers. Enough of these materials to barely cover the tubers would be sufficient.

October is the great bulb-planting month. As soon as your flowers are frozen prepare the beds for bulbs. In some cold districts people are afraid to plant them outside. Try them; they will grow where weeds will grow.—(N. S. Dunlop, Montreal, Que.

BULB CULTURE FOR THE AMATEUR *

THE culture of bulbs indoors is one of the most delightful pastimes in winter and there is nothing in floriculture which so well repays the lover of flowers for the money invested, and for the time and care spent upon them. By having the right varieties, and by forcing them properly, flowers may be obtained from the latter part of November until spring.

The mistake has often been made by those who have written on bulb culture for the amateur, that too much stress has been laid on the kind of soil in which the bulbs are to be grown, and definite proportions of sod, manure, leaves, and soil have been recommended without giving any alternative to the intending planter. The difficulty in cities of obtaining these ingredients has no doubt deterred many people from growing bulbs who would have done so if it had been made plain to them that they could have good success without preparing the soil in the exact way laid down. The bulb has within it the future flower, which was formed during the previous spring; it has also food and energy stored up in it ready to be used when the right conditions are brought about, which are: first, moisture to produce roots, and then sunshine and heat to develop the leaves and flowers. While the bulb does, no doubt, take up plant food from the soil when forced, roots and moisture are of far greater importance. A soil should first of all be porous, so that air is admitted freely to the roots; a soil which becames compact and hard is the poorest kind. It should also retain water fairly well, and for this reason it is well to have some humus, which is supplied by rotted leaves, rotted manure, or rotted sod. Good loamy garden soil is quite satisfactory without the addition of any fertilizer, but if it is soil that becomes compact, it is advisable to add a little coarse sand to make it more porous. Where soil is difficult to get excellent results have been obtained by using pure building sand for this purpose, which, being coarse, is porous, and does not become compact. This must not, however, become confounded with the ordinary fine sand, which is not satisfactory.

PLANTING.

The bulbs should be planted as soon as received, or not later than the middle of October. As a good root system is very essential, the earlier the bulbs are planted the better, as most bulbs take from six weeks to two months or more to fill the pots with roots. Successive plantings are not recommended, as the bulbs lose vitality the longer they are out of the ground.

Hyacinths succeed best in five-inch pots, or if pans are used, several bulbs may be planted in one pan. Three tulips in a five or six inch pot are very satisfactory. Most of the narcissus also succeed well with three bulbs in a six-inch pot, but some of the larger bulbs are more satisfactory with one bulb in a five inch pot. Seven or eight freesia bulbs may be planted in a six-inch pot with good success, and other small bulbs in the same way.

To plant the bulbs, put a piece, or several pieces, of broken pot or charcoal, or even coal clinkers, in the bottom of the pot or pan with soil, and shake it down by striking the bottom of the pot against something, but avoid pressing down the soil in the pot before planting the bulb, as if the soil in the lower part of the pot is firm, the bulb will be forced out of the pot when it begins to root. Now, place the bulb or bulbs on the surface of the soil, making certain to have the right side up, and press down until the upper side of the bulb is on a level with the surface of the soil, then firm the soil about

* Extract from the special bulletin on Bulb Culture recently issued by the Ottawa Horticultural Society, and mentioned elsewhere in this issue.

each bulb with the fingers, and level the surface. When the bulbs are planted, the soil should only come to about half an inch of the top of the pot, so when watering there will be room for a good supply.

ROOTING.

The proper rooting of the bulbs is, perhaps, the most important feature in the successful culture of them. The recommendation is frequently made to give the bulbs a thorough watering at the time they are planted, keep them in the cellar or some cool place for six or eight weeks, and then begin to force them. This advice, without more explicit directions, has been the means of spoiling thousands of fine blooms. There are hundreds of people who have no place to put their pots, while the bulbs are rooting, except the coolest part of their cellar, in which is a furnace, which keeps the air as dry almost as upstairs ; and even a cool closet is sometimes the best place that can be found. The result is that the amateur who has had no previous experience, or who has not learned the cause of previous failures, gives his bulbs a thorough watering, as recommended, thinks all will be well, and he is led to believe this by seeing the shoots pushing up. When he tries to force his bulbs, he finds that something has gone wrong, but he does not know what it is. What has really happened? The air of the cellar being dry, the soil in the pots has gradually dried up, so that by the end of a couple of weeks, or perhaps more, it is apparently quite dry and not suitable for the development of roots, and they do not develop, and perhaps some roots which had started have dried up again. One watering is sufficient where pots can be kept in a cool, moist place, but they should be watered once a week, and if necessary, oftener, if they are kept in a dry cellar. The soil should not be kept soaked at first, as bulbs, when in the dormant condition, are likely to rot if kept too wet. The soil should be kept moist, not wet. If through careless planting the bulbs push up when they begin to root, the best plan is to repot them, rather than attempt to push back the bulb into its place. When rooting, the bulbs should be kept in a dark place, between 35 and 40 degrees F., if possible, and if they cannot be kept as cool as that, the lower they are kept above this the better. If kept in a high temperature, growth begins above before there is a good root development, and this is something that should be avoided, if at all possible. Furthermore, unless kept very cool, the bulbs will make too much growth, it will not be possible to keep them back, and the bloom will be over before the end of the winter.

VARIETIES RECOMMENDED.

The following varieties are recommended:
Early spring tulips, for the house.

Chrysolora, height 11 inches, golden yellow ; Keizerskroon, 14 inches, crimson-scarlet, with broad yellow margin; Joost Van Vondel, 10 inches, crimson, flaked with white, large flowers ; Joost Van Vondel, (White) 10 inches, pure white, large flowers ; Proserpine, 12 inches, rich rosy carmine ; Vermillion Brilliant, 10 inches, bright vermillion ; La Reine, white, becoming delicate pink ; Cottage Maid, 9 inches, white, bordered with rosy pink ; Duchesse de Parma, 13 inches, orange-red, with broad yellow edge ; Thomas Moore, 14 inches, orange, sweet scented ; Van der Neer, 10 inches, violet ; Standard Silver, 10 inches, white, feathered with crimson.

Early Doubles.—Couronne d'Or, orange-yellow ; Murillo, blush-pink ; Imperator Rubrorum, crimson-scarlet.

Hyacinths, Single Pink.—Charles Dickens, rosy-pink ; Baron Von Thuyll, fine pink ; Gigantea, blush-pink, large spikes.

Single Red.—General Pelissier, deep crimson, early ; Lord Macauley, rose, with carmine stripes.

Single Blue.—Blondin, porcelain-blue, large bells; Queen of the Blues, light silvery-blue; Grand Lilas, fine porcelain-blue, large spike, the best blue; King of the Blues, deep glossy blue.

Single White—Baroness Van Thuyll, fine white, compact spike, early; Albertine, pure white, early; LaGrandesse, pure white, the best white.

NARCISSUS FOR THE HOUSE—IN ORDER OF FORCING.

Single.—Chinese Sacred Lily, white, with yellow cup; Paper White, pure white; Trumpet Major, yellow perianth and trumpet; Golden Spur, yellow perianth and trumpet; Emperor, large trumpet, yellow; Trumpet Princeps, sulphur-yellow perianth, yellow trumpet; Horsfieldi, white perianth and yellow trumpet; Sir Watkin, sulphur-yellow petals, large cup, yellow tinged with orange, sweet scented; Parri Conspicuus, pale yellow petals, cup orange-scarlet, sweet scented; Bicolor Grandis, white perianth and yellow trumpet.

Double.—Van Sion, Double yellow daffodil; Sulphur Phœnix, beautiful creamy-white, sweet scented.

A Glimpse Into One of Perth's Lovely Gardens.

The above illustration shows a lovely walk in the garden of one of The Horticulturist's readers in Perth. There are four of these walks in this garden, the one shown being about 111 feet in length. The garden has been laid out since the first settlement of the town and is most noticeable among old Scotch and English gardens. It is in the very middle of the town with a narrow frontage on the street enclosed by a stone wall and runs straight in the centre of the block in squares of fruit trees and vegetables. The borders of this walk as well as the other three, are filled with roses and lilacs, peonies, iris, phlox, dahlias and many other flowers. In mid-summer sweet peas fill so many gaps and a veritable bower of beauty is the result. Meetings of the Perth Horticultural Society are sometimes held in the garden during the summer and always prove interesting.

Plantain and Lilac Bushes

PROF. H. L. HUTT, ONT. AGRI. COLLEGE, GUELPH.

Is there any way to rid a lawn of plantain other than by digging up each plant separately? If so, what should be done? How can lilac sprouts, which spring up around and some distance from lilac bushes, be eradicated?—(Miss F. C. Phelps, Mohawk, Ont.

There is no practicable way of getting rid of plantain in a lawn except by spudding each plant separately. This way requires considerable patience and perseverance, but if persistently followed they can in a short time be eradicated. Suckering lilacs can only be kept in bound by digging up the suckers as they spread. Some varieties spread in this way much worse than others, and where the bushes are not specially desirable varieties, it may be well to dig them out entirely and plant others not so likely to spread by suckering. It is difficult to give information as to which varieties are most subject to suckering, as various kinds are used for stocks upon which the choice varieties are budded.

The Best Way to Grow Violets *

WM. FINDLAY, BRAMPTON, ONT.

AFTER growing violets for ten years I find I am learning their habits better every year. Sand rooted cuttings are the best, as the grower gets a young sappy growth to start plants from. I root my violets very slowly, taking runners from only the best plants of both the single and double varieties, especially the latter. Stock should never be taken from a poor plant, and only the strongest runners should be selected. After the cuttings are well rooted prick them off on a bench, but not so close together that they will be crowded when planting out time comes. My method is to plant singles in the field in May and doubles in the bed where they are going to stay for the next season's crop. I have found to my sorrow that the double violet is a very slow root actor. This is not the case with the singles, as it is hard to kill them.

Violets require good drainage. More *violets are spoiled by over watering than* through lack of water. Never let the plants go to bed damp. Water only on bright days. Keep the house at from 38 to 40 degrees if good color and plenty of fragrance are desired.

A good violet should have a stem 12 to 14 inches long, with a bloom not smaller than a half dollar. The stem should hold the bloom upright. If a grower desires quantity, not quality, the greenhouse should be kept at 48 to 50 degrees. This will result in plenty of nice foliage and pale blooms with weak stems. I plant doubles 9 to 10 inches apart and singles 10 to 12 inches, according to the size of the plants. I have often been asked what a good cut for my house is from February 1 to February 20. This year I cut 64,775 violets, and next season I expect to have four times as many.

*Paper read at the annual convention of the Canadian Horticultural Association held in Ottawa during August.

Something About 'Mums

TO obtain the best results with chrysanthemums they should, according to Mr. E. Dale, foreman of the extensive greenhouses on the Dale Estate, of Brampton, be benched in the latter part of June. After that they must be watered freely and never allowed to become thoroughly dry. It is also very important that the tying up should be attended to, never allowing them to lop over.

"I plant my chrysanthemums," said Mr. Dale, to The Horticulturist recently, "six inches apart each way, and find that at this space two good blooms can be grown to the plant. When the plants are in good free growth I pinch back and afterwards leave the two best breaks that are made. As soon as the buds are formed I use a liberal supply of manure-water once a week. After this I watch carefully to see that the budding is done properly and that only one bloom is left to each stem.

"When handled in this way, chrysanthemums bloom from September 15 to December. The black aphis is a very troublesome pest here and can only be kept in check by spraying frequently with nicotine solution. My leading varieties for commercial purposes are: Glory of Pacific, Polly Rose, and Fitzwygram for the early; Ivory, Ivory Rose, Henderson and Lager for the mixed season; Vivian Morel, Nivens, Timothy Eaton and Whilliden for the late; and Merry Christmas, Autumn Glory, W. H. Charwick and Polar Queen for the very late varieties."

Flower culture is worthy of a place in the thoughts of those who have the welfare of any community at heart. A few flowers, carefully attended, in the window, or patch of garden, show love of the beautiful and sweet, and are a helpful factor in the fulfillment of social duties.

WINTERING OVER OLD GERANIUM PLANTS

WM. HUNT, ONT. AGRI.COLLEGE, GUELPH.

There are several methods by which geranium plants can be carried through the winter successfully ; but like other matters connected with the care of plants, much depends on local conditions, etc., where the plants are to be kept, and the care they receive. The best method for those who are without the aid of a greenhouse and wish to preserve their old geranium plants is to dig them up from the border before being frozen, and then prune them back severely. The plants should then be planted in sand, in boxes about three inches deep, with a few one-quarter inch holes bored in the bottom for drainage. Fine sharp building sand, or sharp rinse sand from the side of a road, will do very well. The plants should be planted a little deeper in the sand than they were when in the borders, and can be planted rather thickly in the box. If only one or two plants are to be kept over, they can be put singly into small pots just large enough to crowd the roots into, usually a three or four inch pot is large enough when the roots are trimmed back. Give sufficient water to moisten well all the sand in the boxes or pots. The boxes or pots should then be stood in the window and the sand kept only moderately moist.

Avoid keeping the sand really wet all the time. Leave the plants in the sand until the young growth or shoots have made three or four small leaves at the joints of the old stems. Examine the roots then and see if young roots have well started ; if so, each plant should be potted singly into a mixture of half sand and half potting soil, in small 2½ inch or 3 inch pots

The plants will usually stand in the sand very well until January or February, if not given too much water before they require potting. The plants can remain in the small pots for a month or two, when they can be potted into good potting soil and placed in pots two sizes larger. I have known large collections of geraniums kept over successfully in the above manner. Plants treated in this way often make better plants than when struck from cuttings.

Another method is to put the boxes or pots with the plants treated as before described, in the cellar or basement at once, instead of growing them on. The sand must be kept much drier if this method is adopted, as the plants must not be allowed to start into growth until February or March, when they can be brought up and potted in sandy soil as before described, and be kept in the window and grown on.

I have known old geraniums to be cut back in the autumn and merely heeled in sand or sandy soil in the cellar. If the cellar is kept at a temperature of 45 or 50 degrees or even warmer, the plants treated by the last two methods described will usually succeed fairly well. The one great point to be gained is to keep the roots and stems alive without inducing a too rapid growth. When once new roots are well formed and growth commences, no matter whether the plants are in the cellar or the window, they must be potted on and kept growing.

Geranium plants can often be preserved by the above methods, even after the tops of the growth have been badly frozen. The plants must not be handled however, when the frost is still in them.

If pansies are wanted for early spring, seed should be sown not later than early September, in a shallow box, in fairly light soil. When plants are large enough to handle, plant out in a light, rich well drained soil in a shaded frame, facing the south. A sash should be placed over them in very severe weather.—(Wm. Hunt, Guelph, Ont.

Planting Bulbs

WM. HUNT, ONT. AGRIC. COLLEGE, GUELPH.

About the second or third week in October is usually the best time for planting bulbs out of doors, more especially Dutch hyacinths and narcissi. Roman hyacinths do not as a rule give good results planted out except in the warmest sections of southern Ontario, so that I do not advise planting Roman hyacinths outside. Tulips, Crocus, Scilla siberica, and Chionodoxas are amongst the hardiest of the bedding out bulbs, and are often planted out with good success just as winter is setting in, but usually all of the out-door planted bulbs are better planted in October.

Dig the soil deeply where they are to be planted, and rake it fairly fine. Hyacinths, narcissi, and tulips should be planted so that the top or apex of the bulb is about two inches below the surface when the soil is covered over them. Crocus, scilla, chionodoxa and snowdrops should be planted so that they are covered with about an inch of soil. The surface of the soil should be patted down fairly firm with a spade after the bulbs are planted, more especially if the soil is of a light sandy nature.

Horse Lawn Mower

PROF. H. L. HUTT, ONT. AGRI. COLLEGE, GUELPH.

I have been led to believe the Guelph college has a one-horse lawn mower. If it is such as you can recommend, please say where one similar to yours can be purchased, and the cost. —(J. L. B., Kingston.

We use on the college lawn the Excelsior horse lawn mower, made by the Chadborn & Caldwell Manufacturing Co., Newbury, N. Y. They make these mowers in three sizes, namely 30, 35 and 40 inches wide, prices $60, $67 and $75, to which, of course, must be added freight and a duty of 35 per cent. I know of no cylinder horse mower of the kind made in Canada, although the Massey-Harris Co. make an excellent small one-horse mower, with cutter bar, like the ordinary field mower. This can be obtained for less than half the price of the American mower, and would probably answer your purpose very well, although it will not cut as close as the cylinder mower.

An October and November Flower.

The plant growing in this novel manner as shown in the cut above, is Cattlya Labiata, one of the species of Cattlya first introduced. The flowers are very large, often six inches in diameter and three or four flowers on a spike. Broad rose colored sepals and petals with a rich majenta lip, make an unusually attractive flower. *It usually blooms during October and November and* when grown in the manner shown above, has a very pleasing effect

I have been years working on pansies to prove that our Canadian-grown seed is more suitable for our climatic conditions than any imported seeds are or ever will be. I wish you could see the difference in quality between our home grown cabbage seed and the imported seed. The plants from our native seed are much the better.—(William Spendlow, Billings Bridge, Ont.

Plant climbers where you wish them to grow. You will find them desirable for covering closets, old buildings, wood piles, fences, posts and even stumps.

FLOWER AND PLANT LORE

EDWARD TYRRELL, TORONTO.

BY the time this issue of The Horticulturist is in the hands of the reader, the "Season of Brown leaves" will be close to us; many of our garden beauties will have put off their summer dress, and be preparing themselves for their winter sleep, but in some favorite places may be seen the hydrangea, rudbeckia and dahlia.

HYDRANGEA, OR CHINESE GILDER ROSE.

This flower was brought from China by Sir Joseph Banks, and presented by him to the Royal Gardens at Kew, 1790. The color is green when young, but turns to a beautiful rose color when in perfection. Soon after its introduction it was observed that some of the plants produced flowers of a fine blue color, and it was some time before this could be accounted for; but Mr. Phillips says he remembers seeing a fine plant of this description, with beautiful blue flowers, in a cottage on a common in Hampshire where no one would have expected to see it. The owner of the plant refused 10 guineas for it, as it was the only one that had been seen, and the circumstances of a poor cottager having refused so large a sum for a plant, excited great curiosity, and brought numbers to see it. The poor woman, although she did not like to part with the plant that had been raised by a child she had lost, sold cuttings to those who would buy them; but when the cuttings blossomed they produced flowers of the original rose color. After investigation it was learned that the poor woman's plant had been reared from the ordinary rose colored variety, but owing to its being planted in the heathy soil of the common mixed with a portion of turf ashes, produced a blue flower, whilst those who obtained cuttings planted them in garden soil, which only gave the original color. Another plant was tried with the same result when planted in a pot of earth taken from Wimbledon Common. This plant was exhibited at the London Horticultural Show.

Rudbeckia, Golden glow.—Native of this continent, named by Linnaeus after Bishop Rudbeck of Sweden, who was mainly instrumental in compiling the Swedish Bible of Gustavus Adolphus, 1618; also in recognition of his efforts in establishing a Botanical Garden and introducing and acclimatizing many northern specimens.

GERMAN ASPARAGUS CULTURE*

U. S. CONSUL H. W. HARRIS, MANNHEIM, GERMANY.

THE raising of asparagus for export, as well as for domestic use, is an industry of considerable importance in parts of Germany. It is confined chiefly to certain localities of North Germany and parts of Baden. In Baden much attention is given to the industry, and the asparagus is said to be superior in quality to that grown in other parts of the Empire.

The soil in which asparagus is raised in Baden is the sandy loam common in the upper Rhine Valley. For asparagus raising the land is first very thoroughly manured and the roots are planted at intervals of 4 to 5 feet in rows about the same distance apart. For the first three or four years no crop is harvested; the land is kept clear of weeds and well cultivated, and is fertilized with stable manure in preference to commercial fertilizers, although these are used to some extent. During these three or four years the ground is kept hilled up around the plants with a hoe, and the shoots are cut back until a considerable bunch of

*Extract from a recent consular report.

strong roots forms at each hill with fibers running in every direction, meeting those from adjoining hills.

A fair crop can generally be harvested the fourth year. As soon as the ground is in condition to work in the spring the process of hilling up the earth around each bunch of plants begins. This is done with hoes, and each row shows a succession of small mounds 10 to 14 inches high, with a base a yard or more in diameter and with the top flattened to a surface of perhaps half this diameter.

In the first warm days in April the new shoots begin to appear, just breaking through the top or sides of these mounds. A long knife is run into the soft, mellow earth of the mounds and these shoots are cut off 5 to 8 inches below the surface. The shoots are entirely white except at the tops, where they show a slight trace of color. They are tender for the most part throughout their lengths and are finely flavoured. These shoots are somewhat larger than those commonly seen in America, being generally one-half to three-eighths of an inch in diameter.

The shoots are generally sold in the local market in pound bunches. For the first few days the crop retails at 15 to 20 cents a pound, but drops to 10 to 12 cents as the season advances. The quantity of cuttings taken from each hill or mound during a season is reckoned at two to three or four pounds.

An asparagus field is supposed to be at its best from eight to 12 years after planting. From that time on the shoots are apt to be less tender, though they may not decrease in size or quantity. Replanting of the field is thought to be advisable after the twelfth year, though many tracts in this locality are said to have remained without replanting from 20 to 25 or even 30 years.

Preserving Tomatoes Whole

"THE very best variety of tomatoes is the Magnus. It possesses practically all the desirable points which may be looked for in that fruit, and produces an abundant crop of early and smooth fruit, with solid meat and few seeds." These views were expressed by W. H. Armstrong, of Cornwall, Ont., to an editorial representative of The Horticulturist, who visited him recently. "I always preserve tomatoes," continued Mr. Armstrong, "in the same way I do cucumbers. Instead of the salt brine I use one quart of good vinegar, such as white wine, to five quarts of water. If the solution is made stronger than this the tomatoes do not keep as long. With the strength one to five they remain fresh and solid for slicing or using in any way until April, and are fairly good as late as June. Great care must be taken in preparing the tomatoes for the barrel. Always break off at the first joint from the fruit, and never put in one with the stem and calyx detached or which is broken. This method has proved very satisfactory with me."

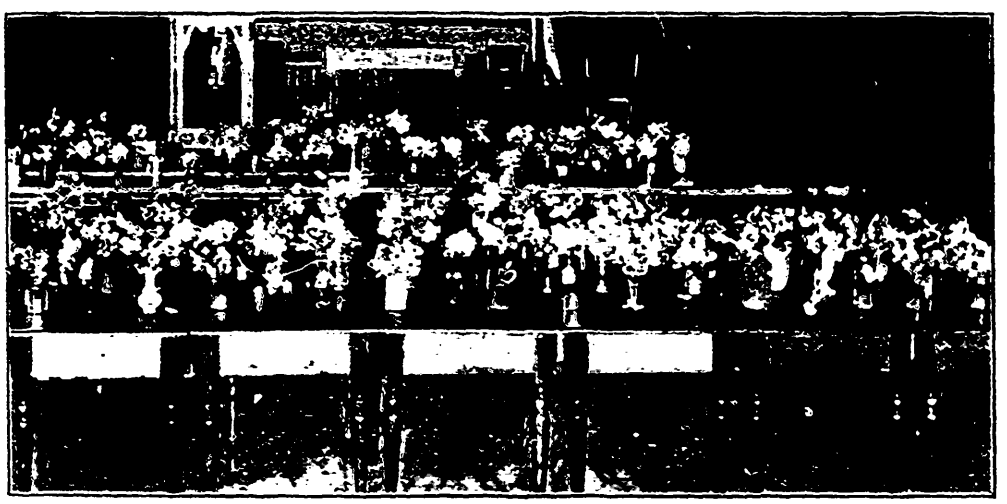
Smith and Reid's article on mulching in the June Horticulturist was to the point, but should we have the mulch as thick as they say from year to year? Would not such a thickness encourage the roots to come to the surface to breathe, as they must have air at their roots as well as their tops? It is possible that they might be encouraged rather too near the surface, and jack frost might nip their toes.—(R. Cameron, Niagara Falls South, Ont.

Our township produces very little fruit, which I think is a pity, for the soil and climate is well adapted for apples, plums, pears, strawberries, raspberries and any hardy fruit.—(R. C. Fowler, Lennox and Addington Co., Ont.

A CERERY GROWER'S METHODS

WM. MORRIS, RODNEY, ONT.

I BEGAN growing celery with some 3,500 plants. Of these plants 3,000 were ordered from Kalamazoo, Mich., with the remainder from a local home grower. The latter were set out first, and although they were extra well rooted, the Kalamazoo plants are fast catching up to them. The first plants were set out six inches apart, but spread over the ground. The United States plants were only put about two inches apart. These latter plants grew much straighter than the local plants. A good plan, after the plants are in place, is to tramp the ground down hard on each side of the plant and leave them for three weeks or more, until they get well rooted. For cultivation purposes I use a Planet Jr. five fly plow and a garden rake. Keep a fine silt on top to draw the moisture. Draw the fine dry earth up to the plant, but do not cover the heart, or the centre will grow down instead of up. I did not trench the celery after the plants got nicely started. I experimented on a portion on top of the ground next to the plant, putting some lime on part of a row, some wood ashes on part, and left some ground with nothing on. I cannot see much difference in the results as yet. The plants are kept well soaked with Bordeaux mixture for rust. Twelve inch boards were placed against the celery on top of what dirt I have pulled up to blanch the plants. I use no water only to dibble in plants. The colder the ground, the better. The plants do not want too much hot sun ; the shadier they are the better. The soil best adapted for celery growing, I find to be a sandy loam. Any ground that will raise good potatoes will grow good celery. Manure the ground in fall, plow in, and put on a top dressing of wood ashes. Let this leach down during the winter and spring and then plow in. This I intend doing in the fall, after taking up my crop."



An Exhibit of Sweet Peas Made By Ottawa School Children.

Great interest has been taken in Ottawa during the past couple of years in a school children's Sweet Pea competition which has been conducted as the result of the generosity and through the active efforts of Mr. R. B. Whyte. Several hundred children started in the competition this year, there being considerably over 100 entries in the exhibition which was held a few weeks ago. Good is being accomplished by this line of work which will be continued next year.

The Canadian Horticulturist

The Leading Horticultural Magazine in the Dominion.

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 and a share of its annual distribution of plants and trees. 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

AN ENCOURAGING VICTORY.

The action of the railway companies in voluntarily making material reductions in their charges for handling fruit is a victory for the fruit growers. The fact that the companies have not waited for the decision of the railway commission but have lowered the rates of their own volition shows a willingness to make concessions on their part and demonstrates the strength of the case presented by the fruit growers.

The principal witnesses for the fruit interests, Messrs. W. H. Bunting, E. D. Smith, M. P., W. H. Dawson and ex-Mayor Graham, are to be cipal witnesses for the fruit interests, are to be congratulated on the success of their efforts. The reductions that have been made in rates will infuse new life into the growers and pave the way towards securing the further improvements still required. The benefits of organized effort on the part of the growers and of having a railway commission are now apparent.

ENFORCING THE SAN JOSE SCALE ACT.

Several cases of great interest to fruit growers were tried during September before Police Magistrate Comfort, of St. Catharines. The cases were brought by San Jose scale Inspector Beatty, who charged several parties with neglecting to destroy or properly treat fruit trees on their premises infected with the scale.

After hearing considerable evidence the magistrate decided not to punish the defendants in view of the fact that these were among the first cases which had come before him, and he was pretty well convinced that the delinquents had acted as they did through ignorance. The announcement was made, however, and it was a welcome and important one, that as the scale is widespread and there seems no way of stopping its progress a more severe view will be taken of such cases in future and fines will be imposed where there are convictions. The minimum fine is twenty dollars.

Infested orchards that are not cut down or properly sprayed are an injury to the whole neighborhood. The imposition of a few fines may convince some growers of the benefits of spraying who have not yet learned this lesson through injury to their trees.

A CHANCE FOR THE SOCIETIES.

The various horticultural societies of the province should not fail to appoint as many delegates as possible to attend the horticultural meetings which will be held at the time of the Provincial Fruit, Flower and Honey Show in November. Two matters of great importance to all horticultural societies will have to be considered. One is the advisability of forming a provincial horticultural association, and the other the need for a change in the act granting aid to horticultural societies.

There is no doubt that there is room for a good, live horticultural association. The fruit growers, bee keepers, dairymen and poultry fanciers all have provincial associations; why should not members of horticultural societies be equally well organized? Were such an association to do nothing more than succeed in evolving some method by which copies of the best papers presented at society meetings can be circulated to the advantage of other societies it will have shown good cause for its existence. Greater enthusiasm in horticultural matters is needed. This enthusiasm can be materially promoted by means of a central organization.

In the Agricultural and Arts Act horticultural societies are classed with agricultural societies. Every horticultural society that is established means a reduction in the government grant to the agricultural society or societies of the district. This often works to the disadvantage of both. It seems as if the time has come when horticultural societies are of sufficient importance to warrant their separation in the act from agricultural societies and their being placed on a footing of their own. It will be well for the delegates who attend the convention in November to consider this matter carefully. The appointment of a committee to lay the matter before the Minister of Agriculture may be in order. Members of societies should think this whole question over very carefully and be prepared to act, through their delegates, at the meeting in November. See that your society, if it has not already done so, appoints delegates.

The announcement that Mr. H. H. Groff, of Simcoe, is to give an address at the convention of horticultural delegates at the Provincial Fruit, Flower and Honey Show in November, will be a most welcome one to all who expect to attend. In addition to being the president of the Simcoe Horticultural Society, Mr. Groff is undoubtedly the most noted originator of gladioli on the continent. His remarkable success in this line of work should be a matter of pride to all true Canadians, and his presence at the convention will undoubtedly add greatly to its success. As will be seen by the program, published in this issue, there will be a number of other well known speakers at the convention. The gatherings should prove interesting, instructive and successful.

Fruit growers and florists all through the province unite in extending their heartfelt sympathy to Mr. T. H. Race, of Mitchell, in the recent death of his wife. As a director of the Fruit Growers' Association and a speaker at horticultural society meetings Mr. Race has become widely known throughout Ontario. The interesting letters from Mr. Race, while at the St. Louis Exposition, which have appeared recently in The Horticulturist, have been greatly enjoyed by many, who will hear with deep regret of his heavy bereavement.

Several hundred notices have been sent out during the past two weeks to readers of The Horticulturist, and more will be mailed shortly, informing them that their subscriptions have expired. Owing to several changes made in the business management of the magazine since the first of the year mistakes may have crept into the mailing lists. We trust such subscribers as may be wrongly billed will be lenient in regard to the error and drop a few lines to the office to set things right. The subscription lists are now being placed on a basis that will practically prevent such mistakes in the future.

It has been pretty generally understood for some time that the lime-sulphur wash is an effective remedy for the San Jose scale. The definite announcement by Prof. R. Harcourt, in this issue, that the lime-sulphur wash, when properly applied, will control the scale, is nevertheless most important, as it is authoritive and should remove any remaining doubts on that score. The results of the experimental work yet to be completed will be watched with keen interest by fruit growers.

It is practically impossible to publish a successful magazine without advertisements. To encourage readers of The Horticulturist to patronize our advertisers a handsome calendar for 1905 will be given to all readers who purchase goods to the value of one dollar or more from advertisers. This includes growers who make consignments to buyers advertising in The Horticulturist. The only condition attached to this offer is that readers must inform advertisers that they saw their advertisement in The Horticulturist.

The very best peaches and grapes the business staff of The Canadian Horticulturist has tested this year were received from Mr. Robert Thompson, of St. Catharines. They were Mountain Rose and St. John peaches and Champion grapes, and were most luscious as well as the only ones (of all those we presume have been sent), which have yet reached the office.

Great damage was caused in many orchards last winter by mice owing to neglect in the fall, to properly protect the trees. The serious loss sustained by many growers should be a warning to others to see this work is properly attended to this season. Some good articles on the subject appear in this issue.

The annual reports for 1903 of the Ontario Fruit Growers' Association and of the Fruit Experiment Stations are being distributed. Fruit growers who do not receive copies in the near future should write to the Ontario Department of Agriculture as the reports are valuable and should not be missed.

Rules for the Fruit Exhibit.

The following arrangements have been made for exhibits of fruit at the Provincial Fruit, Flower and Honey Show in November:

Special prizes of $25 and $15 will be awarded to the agricultural or horticultural society or fruit growers' association exhibiting the best general collection of fruit, the same to be placed on the tables by a member or members of the exhibiting association. When desired exhibits will be placed by an official of the show. Entry fees in all classes are as follows: Single entries up to four, 25 cents each; five entries, $1; all additional entries, 10 cents each. Entries close November 5.

Transportation charges to Toronto on all exhibits will be paid by the Ontario Fruit Growers' Association. It is provided, however, that all prize winning packages shall become the property of the association. All packages forwarded prior to the time of the exhibition shall be addressed to Toronto Cold Storage Co., care of P. W. Hodgetts. Such packages will be held in cold storage free of charge till required.

Bulb Culture Described.—The Ottawa Horticultural Society during September issued an extremely handsomely gotten up and valuable bulletin entitled "Bulb Culture for the Amateur." The bulletin, which was compiled jointly by Mr. W. T. Macoun, horticulturist of the Central Experimental Farm, and Mr. R. B. Whyte, of Ottawa, was distributed to all the members of the society. It gives complete yet simple directions in regard to the fall planting of bulbs both for garden and indoor cultivation, with lists and descriptions of the best varieties. Societies may secure copies at low cost by writing the secretary, Mr. J. F. Watson, Ottawa. The Ottawa society deserves credit for its enterprise.

RAILWAYS HAVE LOWERED THEIR RATES

Some material reductions have recently been voluntarily made by the railway companies in their transportation rates on fruit. The new rates will be of decided value to fruit growers, although it is generally felt other important changes are needed. The changes have been made as a direct result of the evidence given recently before the Railway Commission by representatives of the fruit interests.

The following statement has been given The Horticulturist by Mr. W. H. Bunting, president of the Ontario Fruit Growers' Association. "After some correspondence with the railway commissioners and with the railway companies, the latter have voluntarily ceded a material reduction in the rate on mixed car loads of fruit from the principal shipping districts to the larger centres of distribution, such as Toronto, Ottawa, Montreal, Quebec and Winnipeg. They have also made a special rate on half car lots, or 10,000 pounds or over. These concessions are equal to about $10 per car to Ottawa and Montreal on full car lots, and about $36 per car lot to the northwest. In addition the flat rate for icing cars destined for Manitoba has been abolished, and hereafter shippers will be charged for only the actual amount of ice supplied. Apples, whether in boxes or barrels, will be carried at the same rate, and it is expected that pears in boxes or barrels will be in the same class as apples in future. These concessions, while by no means all that the committee representing the fruit industry asked for and considered reasonable, are, however, a measure of relief to a very serious situation, and will no doubt be received as an earnest of the desire of the railroad companies to meet the wishes of the fruit men as far as seems to them practicable.

With the view of ascertaining what other leading fruit men think of the new rates The Horticulturist has secured the opinions on the subject of Messrs. E. D. Smith, M. P., and H. W. Dawson, both of whom gave strong evidence before the Railway Commission.

REDUCTION TOO LIMITED.

Writing to The Horticulturist, Mr. E. D. Smith, M. P., of Winona, gives his views as follows:

"I don't think anything of what has been accomplished. The reduction on fruit rates to four principal cities only is more in the interests of the commission houses in those four places than the fruit growers and shippers who are shipping very largely to all the towns and cities in Ontario, Quebec and the Northwest. The reduction is too limited to be of general benefit to the majority of fruit shippers."

BETTER SERVICE WANTED.

The Dawson Commission Co., of Toronto, has written The Horticulturist as follows:

"The railways have done no more than they should do in regard to the reduction on rates and shipping charges, but we are satisfied that after a little time the Railway Commission will be able to adjust rates and charges so as to be advantageous. What we should impress upon the railway companies and the Railway Commission is the need for better service than they are giving us. While there is some little improvement this year, it is a long way from being what it ought to be.

RESULTS OF THE TRIAL SHIPMENTS TO IRELAND

The following letters have been received by Mr. W. T. Macoun, horticulturist of the Central Experimental Farm, Ottawa, in regard to the two trial shipments of apples he recently made to Belfast, Ireland.

THE FIRST SHIPMENT.

I have received the 100 boxes of Duchess apples this week, and the quality of the apples is rather disappointing, as it is not good enough for eating, and for cooking buyers prefer our own Irish apples, which are an exceptionally good crop this year and very cheap. Had they been a nice good keeping eating apple and a good color I could have sold them, I think, very well. They are certainly very well put up, and the packing is very good; in fact, one of the largest buyers told me he would take the whole of the apples if they had been suitable, but he would not take a box when he saw them. He said he was quite prepared to pay me 4d. for as many of the empty boxes as I could get him, but the apples to him were useless, as they would not suit his customers at all. What he wants is a nice dessert apple; we have plenty of the cooking grades here. There was only one buyer that would make me an offer at all, and the best he would make me was 2s. per box, ex quay. (Signed) HUGH GORDON.

THE SECOND SHIPMENT.

The second consignment of apples have arrived, and as requested I have examined the boxes and notice the way you have them packed. They are certainly very well put up, but some of the largest fruit merchants here state that they are the wrong kind of apples you are shipping, as they will keep no time, and would have to be disposed of immediately they arrive, and as there is considerable risk to the buyer he will not be willing to give a very big price for them. The Pointed Pipka apples are very well put up indeed, and they have arrived here in splendid condition, but I will not be able to get a very big price for them as the Irish apples are so plentiful and are being sold at very low prices. One of the largest fruit merchants in Belfast informed me that if you could get him any barrels of Alexander apples he would have a ready sale for them, in fact, he said that the demand was entirely on barreled apples, as the boxes were difficult to place, as there is so very little bulk, and of course the prices must be higher in consequence of the expense of packing.

(Signed) HUGH GORDON.

P. S.—Have only been able to get 3s. 6d. for Pipkas and 2s. for Duchess, ex quay, Belfast.

PRICES BEING PAID FOR APPLES

Careful inquiries have been made by The Horticulturist during the past few weeks to ascertain the size and condition of this year's apple crop and the prices growers, more particularly those in Ontario, should realize for their apples. The total crop this year is somewhat smaller than last season, both in this country and in the United States. In Great Britain there is a fairly large crop, which will not materially affect the demand for high-class Canadian fruit. There is no reason apparent why prices of apples this year should not reach the average figure of 75 cents to $1 per barrel on the trees.

In the United States orchardists generally are more sanguine regarding market prospects than dealers. Buyers are reporting large crops, but as growers do not seem inclined to accept these estimates, comparatively few purchases have been made to date for delivery of winter apples. In New England buyers and sellers are wide apart. Dealers have been offering an average of $1 per barrel, while farmers are holding for $1.50 to $2. Throughout New York buyers are talking $1 and $1.50, while growers refuse to listen to anything less than $1.50 to $2. The same condition generally exists throughout Pennsylvania and Ohio.

In Ontario there appears to be almost a combination between brokers and buyers to depress the price in the interest of the dealers. As the quality of the crop is fairly good, in spite of much poor fruit in some sections, there is no strong reason why the average price should not reach 75 cents to $1 per barrel on the trees for No. 1 and good No. 2 apples.

The fruit division at Ottawa reports to The Horticulturist that as a result of inquiries it finds 75 cents is being offered in the best apple districts for winter stock. In some sections of Ontario where the fruit generally has not been sprayed, and only a small proportion of which grades No. 1, growers are finding it difficult to make sales as buyers refuse to take their crops at any price.

Special reports received by The Horticulturist from various sections of the province are here given:

In Ontario county Elmer Lick reports all kinds of prices are being paid, ranging from 50 cents to $1 per barrel picked off the trees. Sales have been made at these prices. The average by the barrel will probably be between 50 and 75 cents for the fruit on the trees. The quality of the fruit was never better. In this same county Mr. George Toole, of Brock Road, reports 50 cents has been paid for fall apples and Greenings on the tree, while winter varieties are bringing 75 cents on the tree, the grower to board the pickers and pay the teaming to the railway stations. Some few sales have been made at this figure.

In the northern part of Huron county, according to Mr. A. E. Sherrington, of Walkerville, there have been but few buyers up to date. For fall apples 60 cents per barrel has been offered, with no quotations as yet for winter apples.

Buyers in the vicinity of Warnoch are offering 75 cents per barrel for fall and winter apples. In this district Mr. George Fothergill reports he does not believe that there will be more than one-half as many winter apples as last year. Offers of 50 cents to 75 cents per barrel for winter apples are being made in Perth county. One grower, Mr. Joseph Chantler, states that winter apples are scarce, he having been offered as high as $1.50 per barrel for good Spys by a neighbor. Few buyers have put in an appearance in this vicinity.

Near Barrie, in Simcoe county, one buyer generally takes most of the crops at about $1 per barrel. A second buyer in this district, who purchases crops in sugar barrels with open heads, recently offered Mr. George Ottaway $1 per barrel for large sugar barrels, and sales are being made at that price. The crop of winter apples will be less than 70 per cent. of last year's crop, and growers seem to think that they should realize better prices than are being offered. A report from Mr. Herbert Stratton, of Durham county, shows buyers are offering 75 cents per barrel.

EUROPEAN APPLE CROP AND PRICES

The following special reports have been received by The Horticulturist from leading British apple importers and commission dealers:

The autumn and winter crop is a heavy one in most of the English apple growing districts, the crop of Blenheim Orange Pippin being the heaviest for many years. Not being gathered in, we cannot say how the winds may affect them. At present they are growing fast and are showing fine quality.—(George R. Smith & Co., Manchester, England.

There is an extra heavy crop of English and continental fruit. English growers are offering finest large samples of fruit, selected at $5 to $6 per ton, and are quite prepared to contract forward of this price for the next three months. We therefore do not expect that your early Greenings, and such like varieties, will command high prices.—(Clark & Sinclair, Dundee, Scotland.

The apple crop in this country, as well as on the continent, is an exceptionally good one, both as to quantity and quality, and, while it must to some extent prejudice early importations from your side of the Atlantic, it can hardly influence much the later arrivals or winter varieties reaching us by the end of October. Indications from some Canadian shippers point to anticipations of prices equal to those of last season, and although it is quite possible that for best varieties we may realize as high prices as were obtained last season, it will be better, nevertheless, to reckon upon general averages of from 10s. to 14s. per barrel, and for choice varieties 12s. to 16s. or 18s. for arrivals to end of December. It must be borne in mind, however, that these prices can only be taken as applying to best fruit packed by men well up to the requirements of tight packing, grading and selecting. Common or badly packed sorts will

lose money, since fruit of that class will not be wanted. It cannot be too strongly impressed upon intending shippers that fruit packed by bad or inexperienced packers is at all times unsatisfactory, but more especially so in seasons when apples are not actually in short supply, as will be the case this season.—(J. B. Thomas, Covent Garden Market, London, Eng.

Prices will rule much lower than they have done for the last two or three years, but Canadian apples have obtained a firm footing in our English markets. Previously to 1895 very few Canadian or American apples were sold in London, but dealers are now alive to the fact that Canadians honestly meet their requirements better than English.—(Garcia, Jacobs & Co., London, Eng.

ONTARIO'S APPLE CROP

A pretty good idea of this year's apple crop, both fall and winter, may be gained by the following reports received by The Horticulturist from growers in the counties mentioned. It will be seen that the statements made by buyers, that the apple crop this year is a very large one, are hardly borne out:

YORK COUNTY.

Fall apples are about equal to last year's crop except in size, not being as large. Late varieties will improve. Winter apples are of good quality, but only about half a crop.—(Joe Armstrong.

Apples have not colored up yet, being about two weeks' late. Snows and Colverts are on the small side.—(A. H. Crosby.

There will be a full crop of early apples. Alexanders will be light. Fameuse and St. Lawrence a medium crop, with Colverts a full yield. Winter apples are a good crop, excepting Spy, Ben Davis and Pewaukee.—(J. D. Evans.

ONTARIO COUNTY.

Apples are generally of a fair quality, there not being much fungus. The crop is 60 to 75 per cent. of last year.—(George Toole.

The amount of apples for export will be about 90 per cent. of last year. Fruit, although smaller in size, is very clean and will average up well. Baldwins and Fameuse are particularly heavy.—(R. L. Huggard.

The early apple crop was heavy., Late apples are not so heavy as last year, although the quality perhaps is better.—(P. Christie.

Apples only about three-quarters of last year, except fall and early varieties, but of excellent quality.—(Thomas Conant.

Our section will yield about one-half last year's crop.—(E. Lick.

VICTORIA COUNTY.

Fall apples are plentiful, but winter apples are a light crop.—(Geo. Smith.

Summer and autumn varieties generally are of rather better quality than usual and a full crop. Many of the staple winter apples, such as Spy, Ontario, Russet, etc., are almost a total failure. Other varieties promise well.—(Thos. Beall.

Apples about 40 per cent. of a crop. Quality equal or better on the whole than last year.—(William Robson.

DURHAM COUNTY.

Apple crop is about 80 per cent. of last year's; quality better.—(Henry Edson.

Fall apple crop a full one. Winter apples only half of last year's crop.—(Herbert Stratton.

Early apples a full crop. Apples on the whole not likely to be more than quarter of last year's crop. Quality fair, size smaller than usual.—(E. Mitchell.

NORTHUMBERLAND COUNTY.

About half the crop of last year. Apples generally clean.—(J. Weatherson.

Crop about 75 per cent. of last year. Quality as good or better.—(H. J. Scripture.

Crop not two-thirds of last year. Quality not of the best.—(Hugh Ross.

HASTINGS COUNTY.

Apples will be rather poor in quality and not a large crop.—(P. D. Aitkens.

Very light crop of winter apples all along the front of the Bay of Quinte, there not being over a third of a crop. Farther inland crop is about up to the average.—(F. S. Walbridge.

The average of all varieties of winter apples will be about 50 per cent. of a full crop. Quality good. Fairly good crop of most varieties of fall apples.—(W. C. Reid.

SIMCOE COUNTY.

Winter apples light in all orchards.—(J. Chantler.

Apples a light crop, hardly 50 per cent. of last year.—(Geo. Ottaway.

Early apples an average crop; later varieties not as large a crop as last year.—(S. Robinson.

GREY COUNTY.

We will have a full crop, but over half will be fall apples. Wind storms are reducing the quantity of winter apples.—(J. W. Graham.

BRUCE COUNTY.

Apples about three-quarters of a crop, but better in quality than last year.—(Alex. Shaw.

WENTWORTH COUNTY.

Apples about 85 per cent. of a full crop, and of better quality than last year.—(J. Fred. Smith.

Apple crop about one-half of last year, the fruit being small but of good quality.—(L. Buck.

LINCOLN COUNTY.

Apples not 50 per cent. of last year, but quality better.—(W. D. Culp.

Winter apples a good crop, free from scab and few worms.—(E. G. Stewart.

We have the largest crop of apples, fall and winter, we have grown for a number of years, of good size and almost perfectly clean.—(S. E. Secord.

LAMBTON COUNTY.

Winter apples will be about two-thirds less than last year, but quality much better.—(E. S. Richter.

Apples not such a large crop as last year, but quality better.—(F. Chalk.

CANADA'S GREATEST FRUIT AND FLOWER SHOW

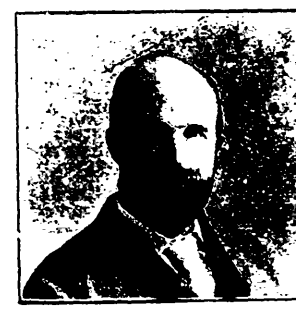
The Provincial Fruit, Flower and Honey Show, which will be held in the Church street rinks, Toronto, November 15-19, will undoubtedly be by far the largest of the kind that has ever been held in Canada. This was indicated by reports presented at a meeting of the general committee in charge of the show held September 22. Flower growers reported that there are thousands of chrysanthemums as well as other flowers being grown, in the vicinity of Toronto alone, for exhibition at the show, in addition to which entries have already been made from outside points, including such centers as Chicago. As the date of the show will be most favorable for the fruit men (all previous exhibitions having been held at too early a date in the season), the fruit exhibits will be the largest that have ever been made in Canada.

Those present at the meeting included the president, Mr. R. J. Score, Messrs. J. McP. Ross, W. G. Rook and Edward Tyrrell, of the Toronto Horticultural Society; A. McNeill, of Ottawa, Chief of the Fruit Division; G. A. Putnam, Supt. of Farmers' Institutes, Toronto; P. W. Hodgetts, Toronto, secretary Ontario Fruit Growers' Association; T. Manton, W. H. Foord and E. F. Collins, of the Toronto Gardeners' and Florists' Association; H. R. Franklind and Bernard Saunders, of the Toronto Electoral District Society, and Sec. H. B. Cowan, representing the Department of Agriculture.

A brief statement was given by Mr. Cowan, outlining the arrangements that have been made for the exhibition. It was announced that the prize lists for the fruit, flower and honey sections have been in circulation for several weeks and that from replies already received indications are that the number of exhibits will be very large. The experiment stations throughout the province are arranging to make large exhibits of both natural and preserved fruit. As these stations are scattered throughout Ontario, the exhibits made by them will be very representative of the fruit capabilities of the different portions of the province. The Dominion fruit division at Ottawa purposes making an exhibit of fruit from the different provinces and will also demonstrate the grading and packing of fruit for local and foreign shipments. It is expected these demonstrations will be one of the best features of the show. Under the direction of Mr. G. A. Putnam, superintendent of Farmers' Institutes, several ladies of the farmers' institute staff will give demonstrations in the cooking and preparation of fruit.

Prizes have been offered agricultural and horticultural societies for the best collective exhibits of fruit made at fall exhibitions and brought to the big show. Already a number of societies have signified their intention of forwarding large exhibits. These exhibits will be kept in cold storage in Toronto until the time of the show in November, at no expense to the exhibitors. One of the best features of the show will be the exhibits of spraying machines, cultivators, apple boxes and other appliances utilized by fruit growers. American firms will be allowed to make exhibits under bond.

Representatives of the Bee Keepers' associations have visited the rink and selected their space and purpose making a very large exhibit. Mention was made of the meetings which will be held at the time of the show, including the annual meetings of the Ontario Fruit Growers' Association and the Ontario Bee Keepers' Associations, representatives of horticultural societies, a gathering of farmers' institute workers, etc.. A mass meeting will be held Tuesday evening in the Y. M. C. A. hall.



T. Manton.

Readers of The Horticulturist have frequently heard of Mr. T. Manton, of Eglinton and Toronto, whose reputation as a florist is well-known throughout Canada. His first experience in gardening in Canada was gained as gardener for Hon. R. R. Dobell at Quebec 28 years ago, with whom he was connected for one year, later acting in the same capacity for two years for Hon Geo. Brown at Bow Park, Brantford, and for four years for the Hon. John MacDonald in Toronto. About 1898 Mr. Manton, in partnership with his brother, Geo. D. Manton, started in business for himself in Toronto, his first location being near Reservoir Park. Five years later the business was removed to Eglinton at which point it has since been conducted. With his brother, Mr. Manton looks after some 12,000 feet of glass, as well as a considerable collection of hardy Perennia's, shrubs, climbers etc. At the time of the Chicago World's Fair, Mr. Manton acted as the superintendent of the floral exhibits for two months. Among the offices he has held are the Presidency of the Toronto Gardeners' and Florists' Association, the Canadian Horticultural Association and Toronto Horticultural Society, which societies he has represented for many years at the Industrial Exhibition Association. At present, Mr. Manton is the Vice-President of the Toronto Electoral District Society and a valued member of the general and printing committee of the fruit, flower and honey show to be held in Toronto in November.

It was decided at the meeting that members of horticultural societies, the Fruit Growers' Association, etc., will be sold members' tickets at 50 cents each, which will entitle them to admission at all times during the week.

Wednesday will be made "apple day," when all attending the show will be given an apple free. Friday will be "carnation day," when all at the show will be given a carnation free.

Located at Manchester.—In the September Horticulturist a statement from Craze & Goodwin was published concerning fruit prospects in the British Isles. The firm's office was given as London; it should have been Manchester.

Nova Scotia Apple Crop.—Allow me to correct an error that has gone abroad concerning the quality of the apple crop in Nova Scotia. We are credited this year with a great deal of scab. While in some parts of King's county considerable fungus is present, it is chiefly confined to the early varieties, such as Gravensteins, but the whole western end of the Annapolis valley is producing fruit of exceptionally fine quality.—(R. J. Messenger, Bridgetown, N. S.

WHAT THE HORTICULTURISTS WILL DISCUSS

The following extremely interesting program has been prepared for the meetings of the delegates of the horticultural societies that will be held at the time of the Provincial Fruit, Flower and Honey Show, in Toronto, in November. Owing to there not being suitable accommodation in the Granite rinks, Church street, where the show will be held, the meetings will take place in the members' committee rooms at the Parliament buildings, which are within a few minutes' walk from the rink:

Tuesday afternoon, November 15, 2.30.—Chairman, Edward Tyrrell, president Toronto Horticultural Society.

The planting of the home and school grounds, Prof. H. L. Hutt, O. A. C., Guelph, Ont.

How can we best interest our young people in floral and horticultural matters? Mr. A. K. Goodwin, Cayuga, Ont.

Horticultural societies: what they are doing. Addresses on this subject will be given by representatives of the different horticultural societies present at the meeting.

Wednesday, November 16, 10.30 a. m.

The Agricultural and Arts Act; how it affects horticultural societies. Supt. H. B. Cowan, Toronto.

Discussion—Shall we form a Provincial Horticultural Association? General business.

Best annuals and perennials for cut flowers. R. Cameron, Niagara Falls South, Ont.

Wednesday afternoon, November 16, 2.30 p.m. Chairman, Hon. John Dryden.

Hardy vines for the house and garden. W. T. Macoun, Horticulturist C. E. F., Ottawa.

Plant improvement by Hybridization. H. H. Groff, Simcoe, Ont.

The care of window plants. Wm. Hunt, O. A. C., Guelph, Ont.

The relation of birds to horticulture. C. W. Nash, Toronto, Ont.

Wednesday evening, November 16, 8 p. m.

What may be grown in a small garden during one season. R. B. Whyte, Ottawa, Ont.

Border flowers. J. C. McCulloch, Hamilton, Ont.; illustrated by stereoptican views.

Kingston's Fine Exhibition

For the first time in several years the Kingston Horticultural Society, in September, held a show separate from that of the agricultural society. The weather was very unfavorable both days, but the exhibit outclassed anything of the kind ever held in Kingston.

Leman A. Guild.

The Secretary-Treasurer of the Kingston Horticultural Society, Mr. Leman A. Guild, is a graduate of the Brockville Collegiate Institute, Athens Model School and the Brockville Business College. After teaching school for a time he went to work on the daily British Whig. His experience as reporter, city editor, and advertising solicitor, preceded his appointment last April as business and advertising manager. He is 26 years of age. Last March Mr. Guild became Sec.-Treas. of the Kingston Horticultural Society and has brought the membership up considerably over 100 within five months. He finds plenty of hard work attached to the office of secretary-treasurer during a show, especially one like the one described in this issue, where the entries in three departments, flowers, fruit and vegetables, were all equally large. The unanimous success of the late show was ample compensation to Mr. Guild for the hard work put forth.

The society offered prizes amounting to $427.50, distributed as follows: Plants and flowers, $107.50; fruit, $140; vegetables, $120; amateur flowers, $50. Special prizes of $5 each were given by citizens for the best collection of apples, fruit and grapes, respectively. The president of the society, Lieut.-Col. Kent, donated a special prize of $2 for best collection of potted plants, and another of $2 for best collection of cut flowers.

There is every prospect for a splendid show next year. This year's exhibition may be regarded as very much of an experimental one. Great interest and enthusiasm has been aroused, and the amateurs especially are planning for larger and better things next season.

Did St. Catharines Beat Ottawa?

One of the most attractive organizations in St. Catharines is the horticultural society of that place. This was strongly evidenced by the late flower show and exhibition given by that society, with results that far surpassed the ideals of any of those interested in its success. A high compliment was given by Mr. W. T. Macoun, of Ottawa, who said the show was the finest he had ever attended.

The school children's exhibits were a most important feature of the show. Aster seeds had been previously distributed to the children of ten different schools. There were awarded to the best four collections of 24 blooms each, three colors in a collection, shown by the individual schools, prizes of 15, 12, 9 and 6 canna bulbs for planting in the grounds of the successful schools. Prizes were also awarded for the best individual bunch of four blooms by any scholar from the seed distributed in schools by the society. The exhibits from the children were all very fine. The principals of the schools were given the task of arranging and placing the exhibits on the tables, which was most pleasingly done.

The great beauty and effectiveness of the displays were added to by Mr. Roderick Cameron, who brought some beautiful blooms for cut flower pieces, which were purely decorative, not entering for competition. One of the objects of much interest was a black hollyhock displayed by Miss Douglas.—S. Richardson, Jr., Secretary.

Good Exhibit at Preston

The occasion of the 17th annual exhibit of the Preston Horticultural Society, in early September, was a great success. The display of plants, cut flowers, fruit and vegetables was a very fine one. At the end of the building was stationed the Preston band, which rendered choice musical selections both evenings.

One or two exhibits might, perhaps, be picked out for special notice, including a collection of about 75 coleus plants grown by the school children of Preston. Very creditable plants were in this exhibit. Another excellent exhibit included 100 different varieties of outdoor cut flowers, shown by T. Hobden, gardener to G. Pattison, Esq., president of the society. This was really a superb collection, the outdoor grown roses in the collection being very fine for the late season of the year. The awards were made by Mr. W. Hunt, of the O. A. College, on the plants and flowers, and by Mr. Lane, of Galt, on the fruit and vegetable display.

A successful exhibition and flower show was held by the Elora Horticultural Society early in September, being an annual affair. In August it was voted to hire rigs to convey plants and flowers to and from the building in safety free of charge to the exhibitors. This was a most welcome innovation to those sending specimens to the show. The society has been doing very good work all season, and interest in the work is increasing.—(J. W. Love, Sec'y Elora Hort'l Society.

London Florists Outdid Themselves

The flower show held by the London Horticultural Society the last of August (too late to be reported in the September Horticulturist), was the most successful ever held by that society. Over 50 exhibitors showed 1,000 jars and bottles of cut flowers, exclusive of the specimens shown by J. Gammage & Sons and Messrs. Darch and Hunter. The president of the society, Mr. C. J. Fox, had a fine exhibit, consisting of over 200 blooms, with some 29 varieties. The display perhaps attracting the most notice was that of W. H. Groff, of Simcoe, and his wonderful gladioli, with Mr. John A. Campbell a close second. Some change was made this year in the arrangement of the flowers, they being placed according to their varieties, thus sweet peas, verbenas, dahlias, stocks, etc., were all in a class by themselves. This arrangement seemed to be more pleasing in every way and resulted in the exhibits being more tastefully and pleasantly arranged.

Exhibits Were a Surprise

Hespeler horticultural society held a very successful flower show September 15. Last May 200 geraniums and coleus were distributed among the school children, and these plants were among the recent exhibits. Some very fine plants were shown, and great surprise was expressed by visitors around the children's table. Magnificent specimens of house plants

were on exhibition. The hall proved far too small, as a number of people were not able to obtain admittance. A larger hall will be secured next year, and if possible the prize list materially increased.—(E. Gurney, sec'y.

Sp'endid Floral Exhibitions

The Grand Trunk Employes Horticultural Society, organized in 1902 in Stratford, gave its annual floral exhibition during September, when the united efforts of all members resulted in a fine display of plants, flowers, fruits and vegetables. Some choice ferns and palms were shown, as well as gladioli, pinks, pansies, phlox, etc. A large assortment of begonias was also noticeable. Many prizes were awarded by judges Messrs. Robert McLagan and W. Sanderson, secretary of the society.

A similar society, located at Port Huron, held a similar show at that place the past month, at which the society from Stratford made a fine display, consisting of over 42 varieties of flowers. The erecting department of the railway had three special exhibits, a locomotive, a bell, and a pumpkin. The first was over five feet long, and one of the finest floral pieces ever seen in Port Huron; the bell was made of pansies and smilax. Several exhibits from the other branches of the work were a trip hammer, from the blacksmith shop; from the pipe shop, a perfect miniature of the institute building.

Deseronto Horticulturists Beat Their Record

The eighth annual exhibition and flower show of the Deseronto Horticultural Society was held August 31, and was by far the finest and largest attended show in the history of the society. The number of entries was larger than ever before, and the quality of the exhibits far better. Two large collections of greenhouse plants from the houses of Mrs. E. W. Rathbun and F. B. Gaylord, attracted much attention, as also did the vegetables presented by the same exhibitors.

A new departure this year was a "best kept grounds" competition, in which keen interest was taken. The first prize was awarded to F. B. Gaylord, and second to Mrs. E. W. Rathbun, of the professional classes; in the amateur, with assistance, first prize fell to Mrs. E. W. Rathbun; without assistance, to D. R. Jones.—(H. W. Clew, Pres. Deseronto Hort'l Society.

Believes in Distributions.—Our last meeting was for the purpose of selecting premiums for our annual fall distribution of bulbs, plants, seeds, etc. The order was given to Col. Bog, who imports these direct from Holland. The order consists of about 1,400 narcissus bulbs and over 400 hyacinth bulbs. Distributions of this kind for the fall usually prove very satisfactory. The bulbs are of the best quality, and arrive in good condition. The members take pride in producing the finest flowers for winter blooming.—(Walter T. Ross, Sec'y Picton Hort'l Society.

Canadian National Exhibition

In these days of dear labor every labor saving device is of value to fruit growers and gardeners. In this connection some excellent exhibits were made at the Toronto Exhibition in September. A representative of The Canadian Horticulturist was interested in displays made by several of our advertisers.

PARIS PLOW COMPANY.

This progressive company of Paris, Ont., had a grand display of different lines of farm implements, including the famous "Success Manure Spreader." This machine is noted for light draft and simplicity in construction. It is fitted with direct beater chain drive instead of a complication of gears. When thrown into gear the beater is shifted from the load about two inches, thus giving free action to start. Another important feature is the apron returning device, by means of which the apron is returned to place simply by moving a small lever. Gardeners and fruit men should write for free catalogue and particulars about this labor saving machine.

SICHE GAS COMPANY.

All styles of Siche gas machines, from the 200 pound special "K" to the 5 pound stereo generator were on exhibition, and Mr. Sims, the manager, informed The Horticulturist representative that the whole exhibit was sold. "In fact," said Mr. Sims, "Siche seems destined to become the light of the future in Canada." The general opinion of visitors was that Siche Building and C. P. R. were the best lighted buildings on the grounds. Greenhouse men should write this company and get quotations, as Siche is an excellent light for greenhouses. Cooking stoves, instantaneous hot water heaters, radiators, etc., run with Siche gas, formed the minor lines of this exhibit.

GRIMM MANUFACTURING CO.

This company had a fine exhibit of the famous Champion Fruit and Syrup Evaporators, and Mr. Grimm said that business was brisk and the factory kept busy. Readers of The Horticulturist should get particulars about these fruit evaporators.

WAGGONER LADDER CO.

In this age of conveniences and handy contrivances fruit growers should be specially interested in a light, strong, handy ladder for picking and pruning. The Waggoner Ladder can be telescoped to half its length and again shot up among the branches quite easily. The company makes all kinds and all lengths, and have a handy extension step ladder, which drew much attention during the fair.

ARNDT TREE PROTECTOR.

The Arndt Tree Protector shared the tent of Mr. E. D. Smith, nurseryman, Winona. The agents distributed pamphlets and business cards and had samples on trees in the vicinity of the tent, which were examined by thousands of fruit growers, many of whom had never before seen the band, but who readily saw the practicability of this simple device to stop the ravages of creeping and climbing insects. Many large orders were received.

CANADIAN PORTABLE FENCE CO., Ltd.

No other fence at the Canadian National was such a centre of attraction as the one built by the Canadian Portable Fence Co., Limited, of Toronto. Although only a new company, the sales have been large during the past season, and will no doubt increase after the fine exhibit of different lines and designs shown at the exhibition.

LITTLE GIANT SPRAYER.

An exhibit which interested many farmers and fruit growers was a handy and complete spraying outfit manufactured by Perkins & Paine, of Port Dover, Ont. The machine on exhibition had a capacity of two and a half barrels, and all power is derived from the horse. When the horse is stopped two air chambers supply power sufficient to spray a large tree. It is fitted with a double action pump and a practically perfect agitator. From one to six lines of hose may be used, and everything is so handy and so simple that a boy can operate it quite easily.

THE SPRAMOTOR CO.

The Spramotor Co., of London, Ont., had a most complete assortment of spraying appliances, from the small hand power implement to the latest development in power machines. Their large automatic sprayer has a capacity of 24 nozzles, and they claim that 240 trees can be sprayed in one hour.