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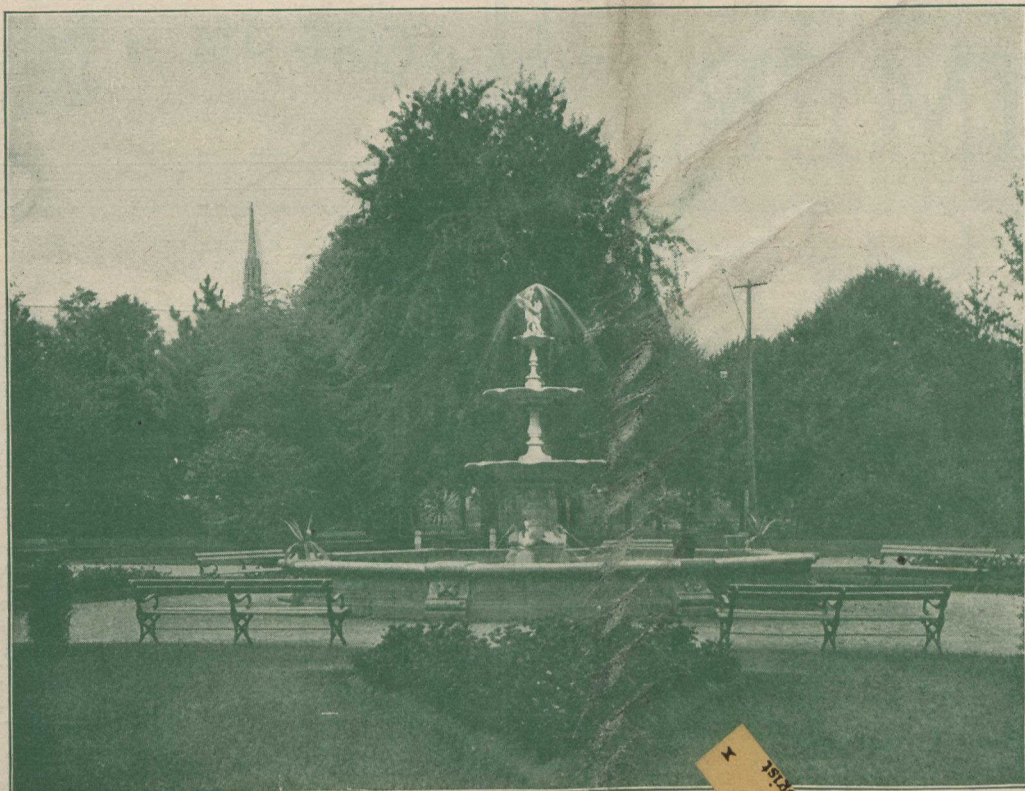
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APRIL, 1906

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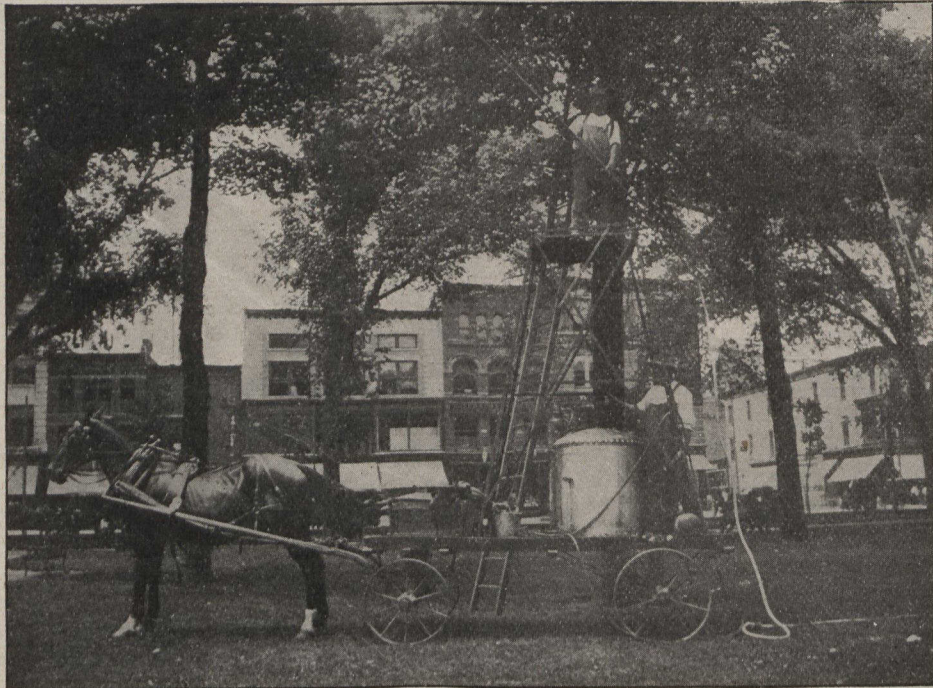
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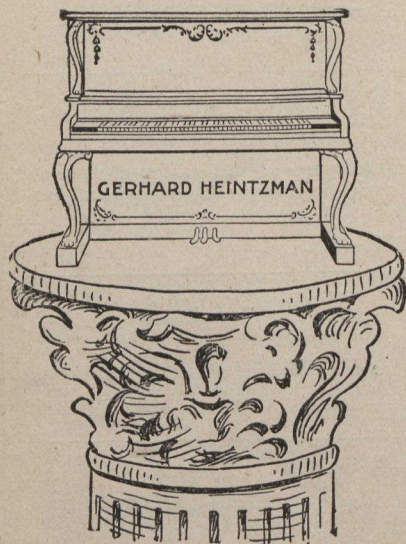
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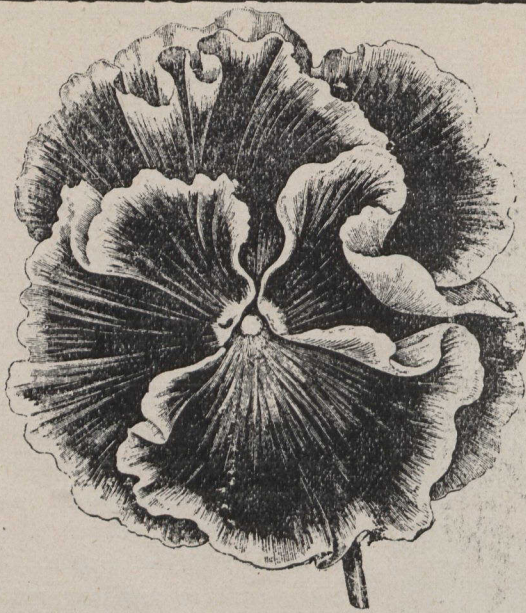
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The Canadian Horticulturist

Vol. XXIX

APRIL, 1906

No. 4

The Dominion Fruit Conference

THE Dominion Fruit Conference that took place in Ottawa March 20, 21 and 22, was the most important gathering of the kind ever convened in Canada. In spite of the fact that the meetings should have been extended over a week, instead of over only three days, many matters of vital interest to the fruit industry were dealt with, and decisions concerning same reached and recorded. Owing to the short time available for the consideration of the numerous important points raised, it was not possible for those present to draft as carefully as was desirable some of the resolutions that were adopted. In the form in which they were passed, however, together with the discussions that took place concerning them, they will serve to make known the opinions and desires of the most thoroughly representative gathering of fruit growers that, as yet, has been held in the Dominion. Owing to lack of time many important matters that were on the program for discussion were not touched. This was unfortunate, but the disappointment of those present was dispelled, in a large measure, when Hon. Sydney Fisher, Minister of Agriculture for the Dominion, announced that he would arrange for similar gatherings every two or three years in future. This announcement brought out hearty applause.

Put briefly, the most important recommendations passed were the following: That in the Fruit Marks Act a new grade, to be known as "fancy," shall be established, which will include perfect fruit only.

That the act define a number two apple. A definition of a number two was adopted.

That in future the numbers 1, 2 and 3 only shall be used in grading fruit, and that the marking x, xx or xxx shall be discouraged.

That the penalty imposed in the case of third convictions for infractions of the act shall be increased.

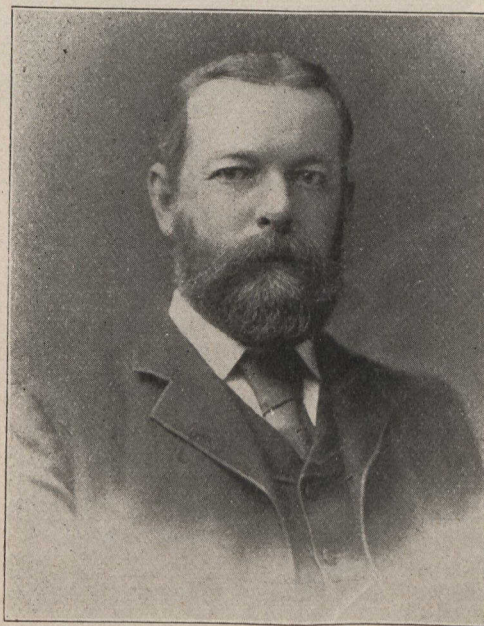
That the 28 inch barrel shall be made the standard barrel, and the use of larger barrels be discontinued.

That the standard box used for the export of fruit shall be made the standard box for inter-provincial trade as well.

That the department prepare and distribute widely regular reports on fruit crop conditions throughout Canada, and in the United States and Europe as well; these reports to be issued twice a month during the late summer and fall. Hon. Mr. Fisher expressed his willingness to undertake work of this nature.

That cars of apples for export be iced at the government expense, as is now done in the case of dairy products. Hon. Mr. Fisher promised that this will be done.

That direct sales by growers to retailers be encouraged, and that the



Hon. Sydney Fisher, Minister of Agriculture
Who presided with great ability at the sessions of the
Dominion Fruit Conference

government appoint men whose duty it will be to develop markets for fruit in Great Britain and on the continent.

That express companies shall be placed under the control of the Railway Commission.

That railway companies be required to give a service with fruit cars of not less than 12 miles an hour; that they be held responsible for damage to fruit when they fail to furnish cars within six days after the cars have been ordered; that they establish icing stations at divisional points; that protection

from sun and rain shall be furnished at all stations where fruit is loaded in carload quantities, and that shippers shall be kept informed of the location of cars in transit.

That the Pure Foods Law be enforced in regard to the manufacture of jams and jellies.

That the making of exhibits of Canadian fruit at foreign exhibitions shall be encouraged.

That spraying demonstrations in the various provinces be continued and extended, and

That several improvements shall be made in the shipment of fruit across the Atlantic.

The resolutions committee also brought in a resolution calling for the separation of the fruit from the dairy division of the Dominion Department of Agriculture, but, as described elsewhere, through some clever manipulation on the part of the chairman, Hon. Sydney Fisher, this resolution was not dealt with.

A resolution recommending the provincial governments to enact legislation that will protect growers from being defrauded by commission dealers was adopted.

THE CONFERENCE

The conference was called by Hon. Sydney Fisher, Dominion Minister of Agriculture, as a result of requests made during recent years by the various provincial fruit growers' associations. Growers have long felt the need for the convening of such a gathering, that matters of national importance pertaining to the fruit interests, which could not be discussed satisfactorily at provincial meetings, might be considered and dealt with.

The most noticeable feature of the sessions was the national spirit that manifested itself in the remarks of the various delegates. There was a subdued enthusiasm all through the meetings, and an apparent desire to harmonize the various conflicting interests of the different provinces. Again and again delegates expressed a willingness to give way on minor matters relating to their province or provinces in order that harmonious action might be possible on the part of all the provinces. This assisted in the solution of several

knotty problems, and finally resulted, at the close of the convention, in the spirit of national pride finding a vent in the giving of hearty cheers for Canada and the fruit interests of the Dominion.

THE DELEGATES

While it might have been possible to have had a larger number of delegates in attendance, a gathering more representative of the fruit industry of the Dominion, and of its various subdivisions, could not have been convened. Every province was represented by its full number of delegates, there not being an absentee. The delegates in attendance were:

Ontario—Harold Jones, Maitland; W. H. Bunting, St. Catharines; Elmer Lick, Oshawa; F. G. Stewart, Homer; M. Pettit, Winona; A. W. Peart, Burlington; D. Johnson, Forest; A. E. Sherrington, Walkerton; W. D. A. Ross, Chatham; P. W. Hodgetts, Department of Agriculture; Prof. H. L. Hutt, O. A. C., Guelph; Linus Woolverton, Fruit Experiment Stations, Grimsby.

British Columbia—Jas. A. Grant, Victoria; J. C. Metcalfe, Hammond; W. J. Brandrith, Ladner; Martin Burrell, Grand Forks; R. M. Palmer, Department of Agriculture, Victoria.

Nova Scotia—Ralph Eaton, Kentville; R. W. Starr, Wolfville; G. C. Miller, Middleton; S. C. Parker, Berwick; B. W. Chipman, Department of Agriculture, Halifax; Prof. F. C. Sears, Agricultural College, Truro.

Quebec—G. Renaud, La Trappe; J. M. Fisk, Abbotsford; Robert Brodie, Westmount; R. W. Shepherd, Como (Montreal); N. E. Jack, Chateauguay Basin; J. C. Chapais, Department of Agriculture, St. Denis; Prof. S. Blair, Macdonald College, St. Anne de Bellevue.

New Brunswick—J. C. Gilman, Kingsclear; I. W. Stephenson, Sheffield; Thos. Peters, Department of Agriculture, Fredericton.

Prince Edward Island—Reverend A. E. Burke, Alberton; A. E. Dewar, Charlottetown; J. C. Ready, Department of Agriculture, Charlottetown.

Manitoba—David S. Manson, Winnipeg.

Saskatchewan—R. T. Goodfellow, Prince Albert.

Alberta—A. E. Clendennan, R. J. Hamilton.

In addition to the foregoing, who had been appointed by the various fruit growers' associations, departments of agriculture and agricultural colleges of the different provinces, the various commercial interests were well represented by such leading apple buyers and shippers as Messrs. E. D. Smith, M.P., of Winona, Ont.; R. J. Graham, of Belleville, Ont., and A. S. Chapin, of Toronto. The commission dealers were represented by Mr. G. W. Hunt, of Ottawa and Winnipeg, and by Mr. D. S. Manson,

representing the McPherson Produce Co. of Winnipeg. The barrel manufacturers were represented by Mr. J. Innes, of Chatham, and the canning interests by Mr. Robert Anderson, of Montreal. In addition to these parties, several members of Parliament were in attendance at several of the sessions. The presence of all these gentlemen made it possible for the various subjects to be discussed from all sides, and assisted greatly in the intelligent consideration of the various points raised.

Those who may have thought that the fruit interests in the different provinces are too widely divergent to ever be harmonized, had their fears dispelled as a result of the unanimous action taken by the conference on practically every point raised. Not a jarring note occurred. The delegates have scattered to their homes to spread the news that the interests of the fruit growers of the Dominion, from the Atlantic to the Pacific, are identical, and that in future national interests, in every case, must take precedence over those of local importance. The outcome of the future conferences that have been promised will be looked forward to with greater confidence.

OPENING SESSION

The conference was opened Tuesday morning by Mr. J. A. Ruddick, Dominion Dairy Commissioner, who is in charge also of the fruit division. After a few words of welcome, Mr. Ruddick introduced Hon. Sydney Fisher and asked him to preside. In accepting the chair, Mr. Fisher explained that while it might be unusual for the Minister of Agriculture to preside at such gatherings, he felt that the conference was going to be one of national importance, and that the best way he could take of gaining the views of the delegates was to preside at their meetings that he might the more closely follow the various discussions.

The first business taken up was the appointment of committees, which resulted as follows:

Resolutions, Messrs. Martin Burrell, M. Pettit, J. M. Fisk, G. C. Miller, A. E. Dewar.

Program, Messrs. W. H. Bunting, D. S. Manson, R. W. Starr, Rev. Father A. E. Burke, J. C. Metcalfe, and J. C. Gilman.

Credentials, Ralph S. Eaton, Robert Brodie, Harold Jones, W. J. Brandrith, and A. E. Dewar.

FRUIT STATISTICS

The first subject considered was statistics, which was handled most ably by Mr. A. W. Peart, of Burlington, who submitted an exhaustive report containing statistical information relating to almost all branches of the fruit industry in Canada. This report helped

to show the delegates the relative importance of the fruit interests in the different provinces. In submitting these figures, only a brief outline of which can be given in this report, Mr. Peart said:

"In these statistics an attempt is made to give some idea of the extent of the fruit industry in Canada and in the various provinces as well. The figures given are derived partly from the Dominion census of 1901, from the Dominion trade returns for 1904-1905, partly from the opinions of practical and well-informed fruit growers in Ontario, and partly from calculations made by myself from the census figures and other data. The need of some such statistics, both from a commercial and an academic standpoint, is apparent. No attempt has been made in these tables to boom the fruit industry. A just and seasonable presentation of the case, based on all the facts available, has been the constant aim. The inherent difficulties of such a task are obvious and while there are undoubtedly errors still, I believe that the figures here submitted are in the main reliable."

The report then went on to show that the year 1901 was a very short apple year, the bearing trees yielding scarcely two bushels each. Last year, 1905, was nearly the same. During the intervening years the crop was heavy, so that it is estimated that the annual average value of the apple crop in Canada during the five years, 1901-1905 inclusive, was \$6,984,819, on the basis of 25 cents per bushel, as the apples were picked from the trees.

Total fruit trees of all kinds in Canada, 1901=21,201,239. Adding 10 per cent. for increase since then on the basis of an increase of two per cent. per year (the estimated increase in Ontario), the number for 1905 would be 23,321,362. Total fruit trees in Ontario in 1901, 14,087,936. Add 10 per cent. equals 15,496,729 for 1905.

Total fruit trees in 1901: Quebec, 3,055,805; Nova Scotia, 2,294,780; New Brunswick, 761,834; Prince Edward Island, 360,060; British Columbia, 567,782; Manitoba, 63,637; North-West Territories, 9,405. Average annual value of apple crop these last five years estimated at \$6,984,819 (1901 to 1905 inclusive) on the basis of 25 cents per bushel as picked from the trees.

The total apple trees in Ontario in 1901 were placed at 9,541,619 and bushels at 13,631,264; Quebec, 2,256,752 trees and 2,025,113 bushels; Nova Scotia, 1,975,575 trees and 2,065,104 bushels; New Brunswick, 675,364 trees and 503,214 bushels; Prince Edward Island, 202,100 trees and 159,421 bushels; British Columbia, 391,644 trees and 240,012 bushels; Manitoba, 8,332 trees and 571 bushels; North-West Territories, 2,488 trees and 1,487 bushels.



Delegates and others who were in attendance at the Dominion Fruit Conference, as photographed specially for *The Canadian Horticulturist*
 (The names of the delegates are published on page 106, and may be traced by the numbers on their hats. Mounted copies of this photograph may be had for 75 cents each by writing to *The Canadian Horticulturist*)

Apples exported from Canada during the years previous to June 30, 1904:

Crop Year	Barrels	Total Value
1899	956,458	\$ 2,578,233
1900	678,651	1,482,927
1901	516,215	1,566,808
1902	1,000,528	2,758,724
1903	1,598,614	4,590,793

It was estimated that approximately 815,000 barrels of apples have been exported from Canada since the opening of the apple season of 1905.

Value fruit crop in Canada in 1901 was \$8,236,500; number of acres, 370,998; capital value of land and trees, \$66,537,650; proportion of capital earning, \$44,358,433. Were 25 per cent. added to the value in 1901 to find the value in 1905, the value would be \$10,295,625. Add 10 per cent. to the number of acres to find number in 1905, would be 408,097. Were 10 per cent. added to the capital value in 1901 to find capital value in 1905, it would be \$73,191,415, and the capital earning \$48,794,276.

Other estimates placed the total value of fruit in Ontario in 1901 at \$6,004,905, and in 1905 at \$7,505,636; the number of acres in fruit in 1901 at 279,571, and in 1905 at 307,528; the capital value in 1901 at \$50,347,150, and in 1905 at \$55,381,865, the capital earning in 1901 at

\$33,564,766 and in 1905 at \$36,921,242.

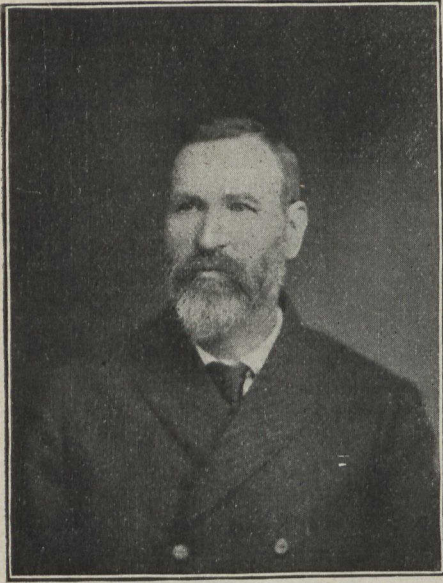
Mr. Peart suggested that the Dominion census should be amended as follows: Where it now gives only total acres in orchard it should give acres in apple orchards and acres in other tree fruits. Where it now gives acres in vegetables and small fruits together they should be divided. Where it gives the value of fruit and vegetables together it should give the values separately. In Ontario, where acres in orchard and garden are given together, they should be so divided as to show the acres in apple orchards in other tree fruits and in small fruits.

In conclusion, Mr. Peart submitted the following resolution: "That the delegates to this convention from the several provinces petition their respective governments to collect, classify and publish henceforth in detail in their annual industrial reports the statistics bearing on fruits and (b) that the Dominion Government in the next census give further sub-divisions of the tables and figures relating to fruits; (c) we appreciate and recognize the valuable information given heretofore by the Dominion and various provincial governments on fruit statistics."

In the discussion that followed a delegate from each province was asked to

speak in regard to the fruit interests of his province. For Quebec Mr. Jack reported that he was not furnished with statistics for the province, but in his locality during the past five years, there had been an increase of 30 to 40 per cent. in the amount of fruit produced. Mr. Gilman, the delegate from New Brunswick, said that as yet the production of fruit in that province is not equal to the consumption. So little fruit has been grown that reports on fruit conditions have not been made in the annual reports of the department, but this will be remedied in the near future. For Nova Scotia, it was reported by Mr. Starr that the average number of barrels exported during the past three years had been 405,813; about an equal amount was raised for home consumption. Rev. Father Burke, speaking for Prince Edward Island, reported that that province had no machinery for collecting and tabulating reports concerning its production of fruit. The industry has been advancing by leaps and bounds.

The Pacific Province, British Columbia, was heard from through Mr. Burrell, who stated that the fruit industry there is growing with extraordinary rapidity. He agreed with Mr. Peart, as did the other speakers, that each



J. W. Brandrith, Ladner, B.C.

One of the Delegates and Secretary of the B.C.F.G. Assn.

province should endeavor to publish annual reports showing the amounts of fruit raised, acreage under the different fruits, etc. About 12 years ago, British Columbia shipped its first carload of fruit. Last year the C.P.R. alone handled 4,000 tons by freight. In 1903, there were one million trees, in 1904 there were 1,750,000; in 1905 2,500,000, and this year, it is probable nearly 1,000,000 trees will be planted. He looked forward to the time when, 10 years from now, British Columbia will have assumed first place among the provinces for fruit production. Its possibilities in this direction are only beginning to be realized. As an evidence of what can be done, he stated that 10,000 crates of strawberries were shipped last season from the Kootenay district alone, where a few years ago it was thought to be impossible to raise any strawberries. He spoke of the eight medals that have been won by British Columbia fruit in Great Britain in competition with fruit from the other provinces, and concluded by saying that however much British Columbia growers may brag of their ability to grow fruit, they are one with the growers of the other provinces in their desire to promote the fruit interests of the Dominion as a whole.

Brief reports were presented from Manitoba and Saskatchewan by Messrs. Manson and Goodfellow respectively. Dr. Saunders, of the Dominion Experimental Farm, described the experiments that have been conducted to find varieties of fruit which can be raised in the Northwest, and reported that Mr. Stevenson, of Morden, Man., last year raised 70 barrels of different varieties of fruit, showing that it is possible to raise fruit in that district. While the results at the Experimental Farms have not been very satisfactory,

he felt encouraged with the success which has attended their experiments.

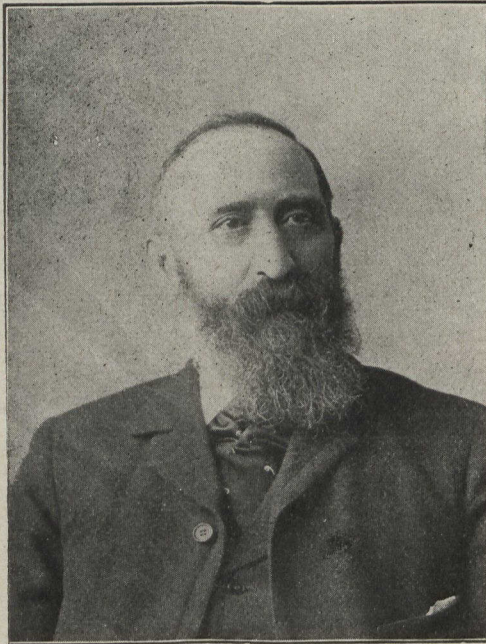
FRUIT CROP REPORTS

The first business taken up Tuesday afternoon was the consideration of the gathering of fruit crop reports. The following motion was submitted by Mr. Peart: "Resolved that the Fruit Division be asked

1. To issue monthly reports from May to August inclusive, and semi-monthly from September to December inclusive.

2. That the reports should include weather, general condition of trees, plants, vines, bushes, insects, fungous diseases, outlook or probable quantity of crop and market quotations for each of the provinces.

3. That there be set forth the outlook or probable crop of apples in those



J. M. Fisk, Abbotsford, Que.

A Quebec Representative to the Fruit Conference

countries to which Canada exports such as Great Britain, Germany, France, South Africa, Mexico, and other countries where profitable markets may be secured.

4. That Canadian representatives in the above countries be instructed to cable weekly, at the proper season, the prices ruling for apples and pears in those countries, said cables to be published in a weekly report, and in such newspapers as may be willing to print them.

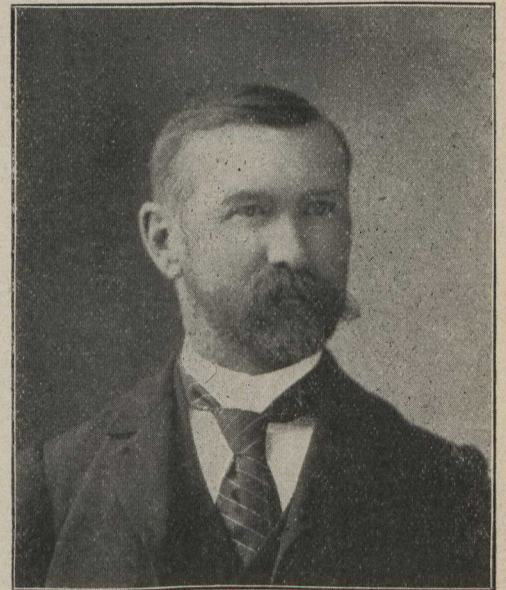
Mr. Graham, of Belleville, said that the apple dealers spend large sums of money each year to gain information as to the crop conditions throughout the United States and Europe, and claimed that the dealers will be as glad to get these reports as the growers. Mr. Fisher asked what Mr. Peart meant by the words, "the proper season," in clause 4 of the resolution. Mr. Peart

replied, that what was desired was that just before making shipments to Germany, he would like to be able to consult a government cable to ascertain if it would be wise to do so.

Mr. Graham was afraid that cable messages would not be as valuable as crop reports, as were a cable to be received saying that the Liverpool market was in a satisfactory condition, it might lead to a lot of fruit being shipped there and the market being glutted. He thought an effort should be made to do away with the auction sales rooms, believing that they are productive of great harm to the Canadian fruit industry. This remark was applauded. Mr. Fisher asked how such reports could be secured in other countries. Mr. Graham suggested that the commercial agents in such centres as Paris and Hamburg should place themselves in touch with the fruit interests and make reports. Mr. E. D. Smith asked if the Department could not appoint paid crop correspondents in those countries.

Mr. Fisher asked if the delegates would like to discuss further the auction sales method of selling fruit in Great Britain. Mr. Graham said that fruit has a standard value, and should not be sold at prices varying from 15 to 20 shillings a barrel. The differences in price are due to large shipments being received one week, glutting the market, while the following week, owing to fewer arrivals, prices are forced up. If British retailers knew they could get all the fruit they wanted in regular quantities, they would be able to contract for it in advance, which would ensure the fruit being sold at more uniform prices, thereby enlarging and steadying the market.

(CONTINUED ON PAGE 99.)



A. W. Peart, Burlington, Ont.]

An Ontario Delegate to the Fruit Conference

Pruning the Fruit Trees

R. W. Starr, Wolfville, N.S.

PRUNING should be considered as a system of education for the tree or plant—an effort on the part of man to assist nature in developing the form and shape that we wish, or as near to that as possible, without doing violence to its natural habit. To best accomplish this we must commence with the young tree as it comes from the nursery, either before, or immediately after it is set in the orchard, decide on the height at which to form the head, and prune as near to that as possible. Next, the position of the branches forming the head must be considered. They should spring from a single leader. Never allow two equal branches to struggle for mastery, or there will be trouble in the future. Select such branches as will give a desirable shape and a well-balanced head, cutting off the rest to relieve the root system injured in transplanting, and possibly shortening the side branches if necessary, in order to preserve the balance between roots and foliage during the first year.

As the tree grows older it should be carefully examined each spring and all superfluous branches, like bad habits, be suppressed or removed before they do serious injury. The aim of the pruner should be to keep the branches from crossing and crowding, to keep the tree standing fairly on its feet. If the tree has been carefully and judiciously pruned when young, so as to carry a well-shaped, evenly-balanced head, but little severe pruning will be found necessary in later years, except the annual cutting out of such small limbs as are crowding or crossing, and thus preventing the

full development of that perfect form which allows the sunlight to find all portions of the tree.

These may be considered as general principles that may be applied to all orchard trees. It must be borne in mind, however, that it is impossible to make trees follow any set pattern or form; not only has each tree its own individuality but each variety has its own peculiar habit of growth. These habits and peculiarities should be carefully studied, so that pruning may be done to advantage, without doing too much violence to nature.

Old trees that have been neglected will frequently need more severe treatment. Dead and diseased branches must first be cut off, and others that are in the way or too much crowded taken out. Care must be taken, however, not to overdo the thinning. In passing through the country looking at orchards in general, I see more overpruned, or butchered trees, than those in need of severe pruning. This is especially the case in some of the older orchards where a system of cutting from the inside has been used, and a cluster of bare branches is all that remains in the centre of the tree. All the foliage, and the fruit is borne on the ends of those limbs, and frequently they are interlocking with the branches of the adjoining trees, so that the nearest approach to sunlight to be found in such an orchard is by looking skyward from the trunk of the tree. In such case the pruning should be done from the outside. The ends of the branches should be cut back and thinned, and what are usually called "water sprouts" encouraged to start from the large bare limbs. These should be thinned to such as have room to grow and bear fruit. They may need to be pinched back or summer

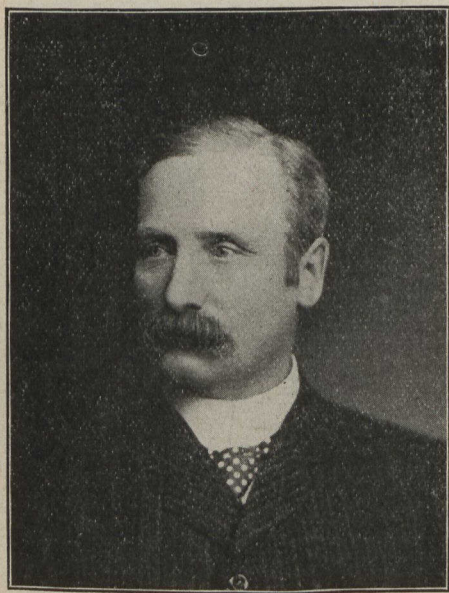
pruned in order to throw them into bearing. This can frequently be accomplished in the third year. In this way the bare centres can be clothed with foliage and eventually with fruit.

Extra care must be taken to preserve all the fruit spurs possible. Many varieties form fruit spurs on large limbs and continue bearing for several years. These in time become brittle and are easily broken, but are seldom replaced. Pickers and pruners are apt to be careless and thoughtless. They must be taught to have more respect for those little spurs, and, instead of destroying them, try to induce the growth of more. This may not seem to come within the purview of pruning as a subject, but it is of too much importance to be lost sight of.

In cutting branches from trees there is usually only one place where it can be advantageously done; that is as close to the trunk or main branch as possible, without making the wound larger than necessary. By this method the wounds heal over most quickly, and the trees are least disfigured. This rule holds good for limbs of all sizes.

All pruning tools must be in good order and perfectly sharp; otherwise the work cannot be neatly done, and the wounds will not heal readily. All wounds over one inch in diameter should be painted immediately. Many years' experience has shown that nothing is better for the purpose than pure white lead and linseed oil.

In this branch of horticulture there can be few fast rules. Every tree is a study by itself, and every man must work according to his conditions, and the amount of brain power he can afford to devote to each special case, for he will find no two specimens exactly alike.



J. C. Metcalfe, Port Hammond, B.C.
One of the Delegates from the Pacific Province

Planting Orchard Trees

AS the Canadian fruit industry develops, orchardists are paying more attention to planting and to the distances apart for trees and bushes of the various fruits that will bring best returns. The general tendency with all fruits is to wider planting, so that cultivation, spraying, pruning and other cardinal orchard operations may be carried on more easily and to better effect. In this way only can the high quality of fruit now in demand be produced. Fillers are being commonly used by leading growers.

In a letter to *THE HORTICULTURIST*, recently, Mr. W. H. Bunting, of St. Catharines, wrote:

"Apple trees should be set not less than 40 feet each way for permanent trees. If fillers are used, 40 by 50 feet would be more profitable. Early varieties, such as Duchess, Yellow Transparent, Wealthy, Ontario and others, could be used as fillers between the wider distances. I prefer the well-known and tried winter varieties, suitable for the export market, to any other for profit. A practice that is being advocated by many is to set an orchard with Talman Sweet or some such hardy free-growing stock, and later, top-graft to the varieties desired.

"Growers have been planting peaches too close. Peach trees should be given

not less than 20 feet each way, and 20 by 24 would be better. The same applies to cherries and plums. Pears may be set closer.

"I would emphasize the necessity of a thorough preparation of the soil before planting. It is hardly possible to give too much attention to this essential. A reasonable trimming of the roots and low heading are now the slogans, on account of the great necessity of thorough and careful spraying, and the greater ease in gathering fruits of all kinds. The tops should be cut back severely and the tree started as near the ground as possible, not more than two feet. With modern labor-saving machinery it is possible to cultivate a low-headed orchard much more easily than formerly."

In discussing essential points in planting fruit orchards, Mr. Joseph Tweddle, of Fruitland, says: "Having selected site and soil suitable, the next in order is the preparation of the soil. Contrary to general expert advice and practice, we have found it profitable to plant on fresh plowed sod land instead of soil which previously has been cultivated to destroy all grass. True, it does require more work to prepare and put in good tilth and dig the holes and plant the trees or vines, and more thorough cultivation the first season to kill the grass or sod, but think of the advantages to be gained from the decaying humus in the soil holding the soil moisture from the spring rains during summer. It also affords winter protection to the roots for the first and second winters following planting. The little extra labor is many times repaid. This method applies only to trees and grape vines where the necessary work of hoeing is but trifling and not to small fruits, where the grass might cause endless trouble. Humus is just as requisite in the young orchard and vineyard as anywhere else on the farm, and will push the trees and vines into a vigorous and healthy start in life if properly handled. Most growers delay planting because their land is in sod. By working it for a year or two they destroy this humus-producing element.

"With increasing wealth comes an ever growing demand for higher quality, and this applies in planting as to distance apart. The close planting is gradually giving way to more liberal space so necessary to the perfect development of fancy fruit and the consequent high prices to be obtained. Without an abundance of light and air for the foliage and the soil no tree can produce high quality of fruit. Peach orchards 12 by 12 feet are being replaced by others 20 by 20 feet, and even more by some of the leading growers. Wider planting is being practised, too, with other fruits.

"Fillers are not so much used as formerly, growers preferring to grow some

hoe crop at a safe distance from the trees till the trees require the whole space. Few growers have the courage to cut out the fillers in time and by crowding the permanent trees they cause them to grow tall. This is disastrously expensive in pruning, spraying and picking later on. If fillers are planted they must be of heavy bearing, short lived varieties, suitable to the soil and climate of the locality. Selection must be left largely to the wisdom of the grower. In sections where Wagener and Ontario thrive they can be used for fillers. In pears, dwarfs can be used between standards or possibly currants, gooseberries or raspberries can be planted in the rows of trees. Peaches grow so rapidly that it is scarcely profitable to plant fruit as fillers. In some cases raspberries and strawberries are used.

"Planting should be done as early as the soil can be prepared in the spring. Trees should be dug early and well heeled in. It is best to open the bunches and stand the trees in a large furrow, covering the roots so that no air can reach them. Many trees are ruined by careless heeling in. If planting is delayed into warm weather the young rootlets start and the trees can scarcely be got to the field and planted without destroying them, or at least causing a great check to the growth of the tree.

We must emphasize early planting for good growth the first season. In case of unavoidable late planting, keep the trees wrapped in a damp cloth if necessary. In dry soil use half a pail of water to a tree when the hole is filled within four inches of the surface, then fill in the balance with fine dry soil, mulch with coarse manure and keep the cultivator going."

Mr. J. C. Harris, of Ingersoll, wrote THE HORTICULTURIST as follows: "I would suggest to intending planters that they set a number of trees in one corner of the orchard at close distances—say 12 feet apart—or between the standard trees. These can be used any time before they are 12 years old to replace standards that have died or are not doing well. In this way a thrifty orchard of even size can be secured.

"During the past two years I have moved over 100 trees 11 years old and there is little difference between them and the others planted the same year.

"I prefer spring planting as soon as the ground is fit for cultivation. Standard varieties should be set at least 35 or 40 feet apart. Where fillers are used, Wealthy, Wagener and Ontario are the most desirable in this section. The directions and instructions for planting by nurserymen are usually satisfactory and can be followed with safety."

The Currant Patch

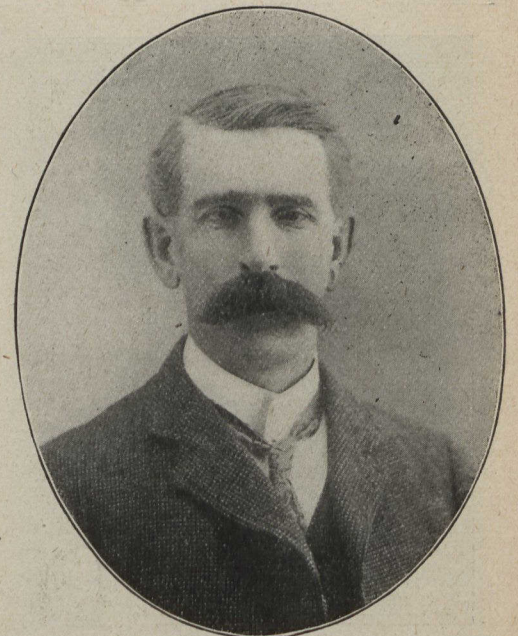
W. E. A. Peer, Freeman

A FEW years ago currants were receiving little or no attention on the part of the commercial fruit grower. The price realized was so small that only under favorable conditions and convenience to market was it possible to receive sufficient returns to pay for the cost of handling and marketing this crop. Such a state of affairs discouraged the planting of currants, and led to the destruction of many plantations in existence. This check in the development of the currant industry and the increasing demand for this fruit has once more placed it among the desirable crops to have included in the fruit plantation.

The selecting of varieties of currants for planting is a very important consideration, and one that if carefully attended to will give ample returns in cash and satisfaction for the trouble taken. From a commercial standpoint appearance has a great deal to do with the final returns. Size plays an important part in establishing the price. There is frequently a difference of two cents a quart in the price paid for large-sized currants in preference to small ones. I have known buyers refuse to handle the product supplied by growers whose plantations were known to con-

tain a large percentage of the smaller varieties of currants.

Among the varieties that might be mentioned as undesirable on account of their small size are Brayley's Seedling,



S. C. Parker, Berwick, N.S.

One of the Delegates from the Land of Evangeline

New Victoria, Raby Castle, Red Dutch and Versailles. Among the better class of currants it would be difficult to select a limited number of varieties to recommend under all circumstances. If the reports of the experiment stations are studied and the opinions of other growers considered, a diversity of opinion in regard to this vexed question will be noted. The man who is making currant growing a business will find it to his advantage to investigate closely for himself those varieties recommended by experiment stations and make his own selection of those best suited to his conditions.

The soil for currants should be thoroughly prepared before the plants are set out. It must be rich and deeply tilled in order to give the best results. Currants are a shallow-rooted plant, spreading out their rootlets near the surface, hence deep cultivation cannot be given after the plants have become established without doing severe injury to the bushes. For best results they require a rich, damp, but not wet, soil, preferably a sandy or gravelly loam. When setting out the bushes give them plenty of room. There is some variation of size of bush in the different varieties, but generally speaking, six feet each way is close enough. Care should be taken to get the plants set deeply enough; a good guide is to plant them somewhat deeper than they were in the nursery row.

Before planting the roots should be made in proper condition for setting out. When digging the plants many of the roots become broken and torn. These should be pruned back, leaving a clean, oblique undercut which will fit closely to the soil, and from which new rootlets will more readily spring than they would from the bruised and muti-

lated ends as they come from the nursery.

Currants will adapt themselves to a great amount of neglect, but for large currants and productive bushes, the plantation must receive proper attention. They will respond liberally to careful cultivation and enriching of the soil. Owing to the shallow-rooted system of the currant, cultivations must be frequent and shallow to conserve moisture, keep down weeds and avoid injury to the roots. Stable manure is one of the best fertilizers that can be used in a currant patch, as it also serves as a mulch. If necessary, it may be supplemented with a small amount of bone dust and potash fertilizer.

To get the best results it is necessary to prune annually and systematically. There must be a gradual removal of old wood, and a constant supply of new wood developed to take its place. Keep the branches as well distributed as possible, and the bush symmetrical. Do not allow branches to become long and straggly, or they are apt to bend over and break at the time of maturing the fruit, so that it is soiled in the dirt and made unfit for market. Under branches that have a tendency to sweep the soil should be removed. The fruit on these is almost sure to be splashed with soil when a heavy rain-storm comes.

Raspberry Culture as Practised at the Lake Huron Station

A. E. Sherrington, Walkerton

RED raspberries are grown in rows six feet apart, the land is first put into good condition by either plowing in clover or barnyard manure the fall previous to planting. As all planting is done in the spring, the land should be plowed deep as soon as fit to work, then well worked with disk or cultivator, so as to have a fine surface. The rows are made by plowing a deep furrow, throwing the soil out both ways; the plants are then set in the bottom of the furrow, putting in sufficient soil to cover the roots well. The furrow is gradually filled by the process of cultivation. Frequent and shallow cultivation is practised so as to control the soil moisture and destroy all weeds.

As the red raspberry propagates by suckers, the rows are allowed to fill with plants and spread to about 30 inches. The rest of the space is kept clean by frequent cultivation. Plowing or deep cultivation should never be practised in a raspberry plantation. For fertilizers, barnyard manure and wood ashes are used. Some growers are using commercial fertilizers alone so as to avoid weed seeds, but under this system the land will soon become deficient in humus, which is such an important factor in the production of plant growth. The soil, when depleted of its humus, dries out much more readily than when well supplied with humus or vegetable matter.

After testing some 70 varieties for the last eight years, the following varieties has proven to be the best all-round sorts for either market or home use: Marlboro—plant of dwarf habit, strong and hardy, fruit large, firm, rather dry and seedy for a good table berry; color, bright red; quality fair, ripe July 13. Herbert—a new berry of recent introduction, plant a good grower, hardy,

fruit large, firm, but not nearly so dry as Marlboro; color, bright red; quality good, ripe July 17, very promising. Cuthbert—the Queen of all berries, plant strong and very vigorous, hardy, fruit large and firm, dark red, quality of the best, ripe July 19. Phoenix—plant strong, vigorous and hardy, fruit medium to large, color, dark red; quality good, ripe July 22, a good cropper. These four varieties are given in order of ripening, and will cover the raspberry season.

BLACK CAPS

The blackcaps are grown in rows six feet apart and three feet in the rows. As they propagate from tips, they do not spread as the reds do. It is very important that they should be planted in a deep furrow; if not set deeply they are liable to be blown out by the winds. Cultivation is the same as for the reds. The pruning is done by pinching off an inch or two of the terminal points of the young canes the first year, when about 18 inches high. This will cause them to grow stalky, and establish a good root system. The laterals should be cut off the next spring to about 10 or 12 inches. The second year the canes may be allowed to grow to 24 or 30 inches before pinching back. By this method strong canes will be formed with the laterals near the ground. The laterals at this pruning can be left about 24 inches long; they should be cut back in early spring. This treatment will produce a strong upright bush that will need no tying. It is also a system of thinning, which is necessary if first-class fruit is wanted.

The two best varieties are: Conrath—plant strong and vigorous, fairly hardy, fruit large, quality good, and Hilborn—plant vigorous and very hardy, fruit large and of good quality.



Rev. Father A. E. Burke, Alberton, P.E.I.
One of the Delegates from the Garden of the Gulf

How a City May be Made Attractive

THE need for improving the existing conditions in and around cities and large towns was depicted clearly and with force by Mr. J. Horace McFarland of Harrisburg, Pa., who spoke in St. George's Hall, Toronto, on March 20, under the auspices of the Toronto Horticultural Society. That much can be done in a short time to improve these conditions was proved by the success that has attended the efforts of Mr. McFarland and his co-workers in Harrisburg. Excellent views were thrown on canvas to illustrate unsightly spectacles commonly found as a city is approached. Among these were such public nuisances as the repulsive signboards, the odoriferous

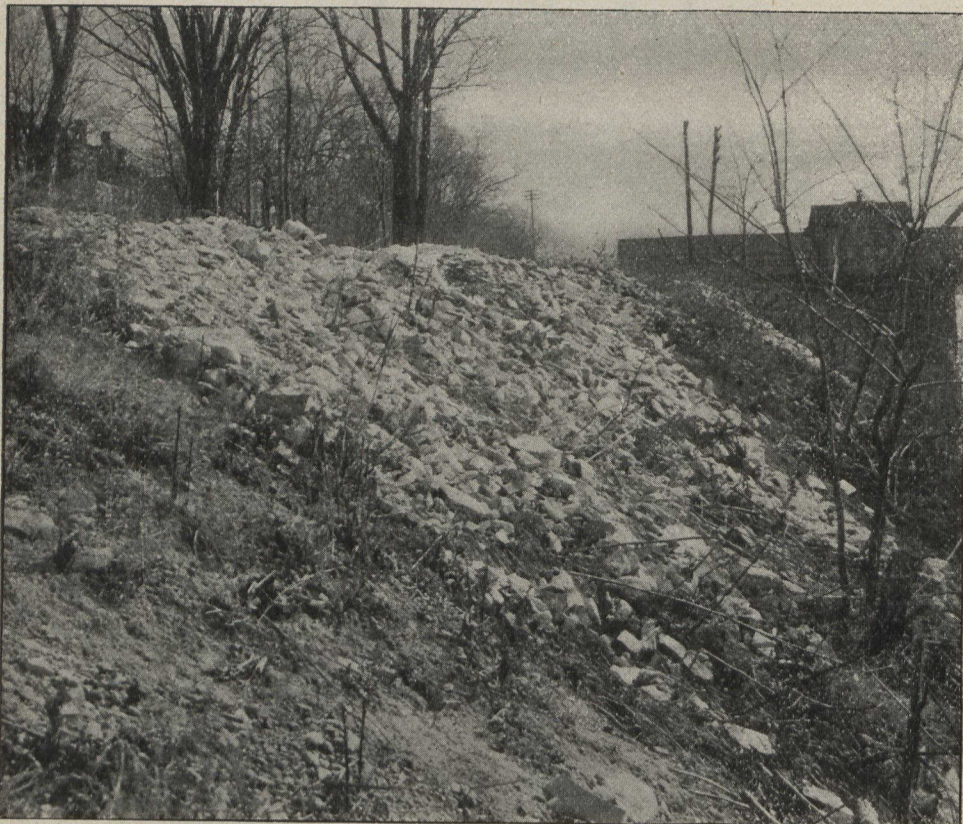
Before dealing with civic improvement proper, Mr. McFarland discussed the Niagara Falls problem, and advised the citizens of Canada to put forth every possible effort to prevent that great scenic wonder from being destroyed to fill the pockets of 1,000 stockholders representing six development companies. Those financially interested claimed that by using this power to develop electricity, a great public benefit would result. It was shown, however, that in Buffalo light was more costly than in Harrisburg, where no such means of developing power is at hand. Views were presented showing the beauties of the falls and the rapids at present, and others showing what a hideous sight

citizens should be proud of, because they think it may result in a paltry gain. Pressure should be brought to bear on those in authority. Letters should be sent to your premier, and to the members of your parliament urging that steps be taken to prevent these development companies from destroying such a magnificent production of nature."

The methods adopted in forwarding civic improvement in Harrisburg were outlined. In 1902, \$5,000 were subscribed by 60 citizens to be devoted to formulating a scheme for general improvements. Three men were selected, one of whom was given charge of water and sewage systems, another control of paving, and the third charge of parks, drives, etc. These three men drafted a plan of the various steps that should be taken to make Harrisburg what it should be. The report recommended the expenditure of \$1,090,000.

The people had to be convinced that the benefits that would result warranted the use of so much public money. The \$5,000 that had been subscribed were spent in educating the people to the need of this. A copy of the report containing the suggested improvements was sent to every citizen; clergymen and principals of schools co-operated; every organization in the city was approached, and the newspapers gave valuable assistance. Women workers formed committees and sent representatives to the schools to talk to the children and distribute pamphlets. In this way many parents were won through the children. Everything possible was done to have the people vote intelligently.

It was pointed out to the voters that if this scheme was carried out it would mean an increase in the tax rate of about three and a half mills under the most unfavorable conditions, but if everything prospered as they hoped it would, the increase would not be over two mills. In return for this expenditure they offered beautiful parks and streets, and, more important from the standpoint of economy, a pure water supply and a perfect sewage system. In this connection views were used to show the condition of the streets, the extent of the garbage dumps, and the prevalence of large signboards hiding natural scenery that should be open to the view of wayfarers and travellers. Statistics were given showing the ravages of typhoid fever and other diseases due to using impure water and to an inadequate sewage system. Unfiltered water from the Susquehanna River was being used throughout the city. This water had received the sewage from cities and towns farther up the river, with a total population of over 522,000. At certain seasons the waters of the river lowered



An Unsightly Dump at Harrisburg, Pa., Before Improvement

dump heaps and the death-dealing sewage systems.

The executive of the Toronto Society are to be congratulated on securing the services of such an authority on civic improvement as is Mr. McFarland. Great things are promised by the society in the way of improvements in Toronto's streets, parks, etc., and it can only be expected that Mr. McFarland's address will stimulate that body to still greater work than had been proposed. President Frankland introduced the speaker of the evening as the president of the American Civic Improvement Association.

will replace them if these companies are allowed to carry on operations at their own free wills.

"The people," said Mr. McFarland, "have the power to run the country's affairs, and they should set to work to save the falls. Every year finds an expenditure of \$15,000,000 by those who visit this greatest scenic wonder of the world.

"Citizens of Ontario also benefit from the visits of these sight-seers who spend considerable money. When the waters of Niagara are harnessed, all this is lost. People lose sight of the fact that this is a sight that American

and stones, etc., along the banks remained covered with a foul, unwholesome and death-dealing slime.

The people gradually became awakened. The day previous to the election large streamers were used on the street cars, urging the citizens to vote for pure water, better sewage system, less diseases, playgrounds, parks, beautiful streets, etc. No attention was paid to politics. Those men who had the welfare of the city at heart were elected and the entire project was a huge success.

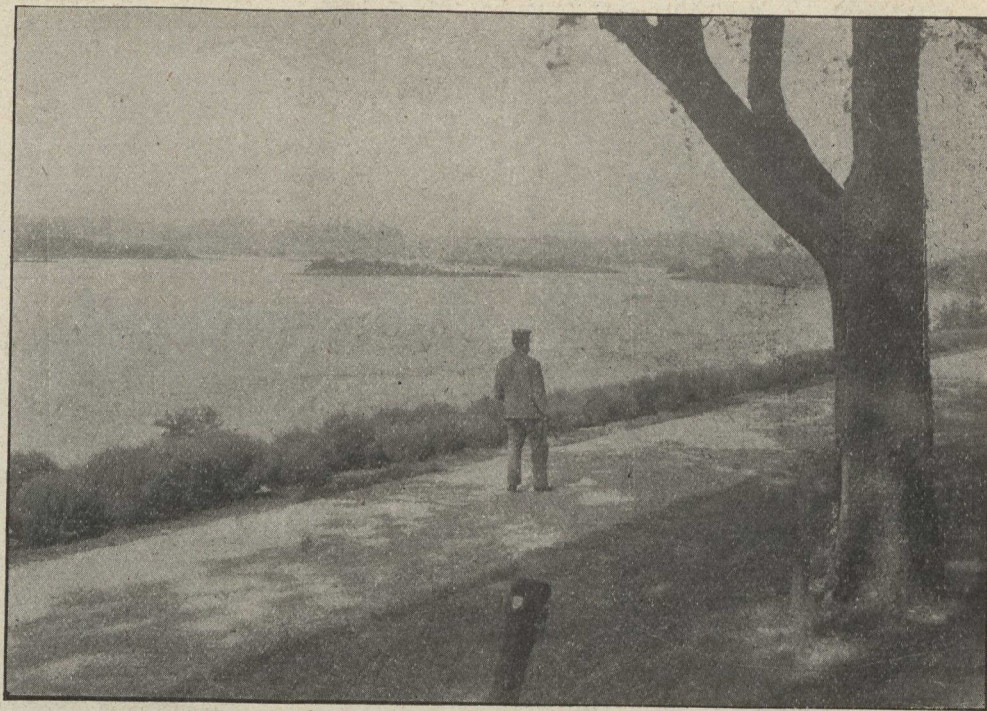
The results have been greater than was anticipated. In four years a filter system has been installed by means of which pure water is supplied. Already 21 miles of streets have been paved and are kept perfectly clean. At first the citizens on various streets rushed to the city buildings to ask that their streets be left out. All this is changed. More paving is to be done this spring and the residents rush to ask that some of the work be done on their streets. Slum streets have been converted into veritable gardens. The railroad station surroundings have been improved so that the new comer is at once convinced that Harrisburg is a lovely city. Mr. McFarland pointed out that Toronto Station could easily be made a place of beauty. Commerce was important, but to some extent should be subordinate to beauty.

A notable change has taken place where the old dump shown in the accompanying illustration was in evidence with its conglomeration of tin cans and garbage as well as its horrible odors. This has been converted into a beautiful river front one and a quarter miles long. Recently 3,800 feet have been added, and this, too, will be made into park ground. Grass now replaced the garbage, and shrubs the tin cans.

A formal city entrance, shown in the third illustration, also has been constructed. Two stately pillars were obtained from the old state capitol. On the bases of these pillars are inscriptions of historic importance. The surroundings have been improved in keeping with the importance of such an entrance.

Everything has been done quickly and systematically until the city is surrounded by playgrounds and park grounds accessible from every point.

The practice of butchering shade trees was strongly condemned, as was also the erection of signboards and public dumps, which showed the lack of necessary attention by the citizens to public duties. Slides were used to impress the evils of these practices. Telephone and telegraph companies were charged with undue destruction of trees in many cities and frequently in the country as well. City councils were advised to force these companies to place the wires underground. In some



The Unsightly Dump Transformed into a River Front Park

parts of the United States this method had been tried and it was being adopted altogether as the most economical. City governments were advised to allow none but experts to prune the shade trees. Mr. McFarland said that the time was not far distant when the ruthless cutting of trees would be prevented by law. The management of trees should be in the hands of a competent person who could fight fungus and insect pests, and otherwise look after the best interests of these shade-producing, health-giving forms of plant life.

Views were shown of streets with trees trimmed in telegraph pole fashion, and contrasted with streets lined with shapely trees. Streets with poles on which were hundreds of wires were compared with streets where all wires were underground. It was mentioned that the easiest way to make the streets of any city 10 feet wider without widening the street was to remove the telegraph and telephone poles. Just as soon as the citizens said it must be done, and cut down the poles, the companies would find that it was possible, and would learn that it was in their own best interests.

In illustrating and describing the signboard nuisances, the utter disregard of private rights in Boston and other cities was shown. Such nuisances to the eye should be as strongly objected to as foul odors or loud noises.

Garden plots for school children were mentioned as worthy features of any school management. The dandelion and apple blossom children were much superior to those brought up in the gutter. Each city should provide something better than dirty lanes and dreary school yards for the children. Parks

were cheaper than policemen. If the children were to be allowed to become wild and reckless parks should not be sustained. In the winter the same parks could be used for curling and tobogganing.

Mr. McFarland referred to the annual pilgrimage to Paris and to Rome to see the beauties of those cities. American cities could be made as great centres of attraction if the citizens submitted to spending money that would return tenfold because of the increased number of visitors. Besides there was the satisfaction of living in a beautiful city. In Harrisburg the housing problem, as well as walks, lawns, flowers, trees, etc., was being given thoughtful attention. Each city must be beautified in its own way. No two cities could be treated similarly. Nature unadorned proved to be most attractive. Harrisburg in four years had done great work. Toronto or any other city could do as well or better if an earnest effort were made. The taxes had made no appreciable increase. In 1902 the rate for city purposes was $7\frac{1}{2}$ mills, whereas in 1906 it was but 8 mills. Citizens had been assured that the increase would not be over three and a half mills; instead it had increased only one-half mill. In return for this extra levy they had pure water and hence less disease; they had an excellent sewage system, beautiful streets, beautiful parks, and a general change for the better in and around the city. Mr. McFarland closed by saying he was proud of the development in his city, and hoped that the success following efforts put forth there would stimulate other cities and towns to do likewise.

The president of the society, Mr. Frankland, urged Toronto citizens to



Formal City Entrance at Harrisburg, Pa., as Improved by the American Civic Association—to be Dedicated April 20

begin earnest work along the lines referred to by Mr. McFarland. For the present he said the society would labor with work it knew could be accomplished.

He asked the co-operation of the citizens.

A vote of thanks to Mr. McFarland was moved by Mr. R. J. Score, a director of the society, and seconded by Park

Commissioner Chambers, who pointed out the excellent natural facilities that were afforded in and around Toronto for successful civic improvement work.

A List and Description of Leading Perennials

Roderick Cameron, Niagara Falls South

HAVING received a number of letters from readers of THE HORTICULTURIST enquiring about the most desirable perennials for all purposes, with the season of blooming, color and duration of bloom and height of the plants, I submit the following list for publication, that readers of THE HORTICULTURIST may have a catalogue from which to select with some degree of intelligence. By the time the April issue appears it will be time to procure the desired specimens.

Arabis alpina, Rock or Wall Cress, single white flowers, grand for the edge of a bed or border, also for the rockery. Grows to six inches high, spreading.

Arabis alpina flore pleno, double white flowers, and begins to bloom after the single one is done, therefore plant time about with the single one to prolong the season of bloom, May and June.

Lychnis plenissima semper florens, rose flowered, double, in bloom all summer, grows 18 inches high.

Lychnis viscaria splendens pleno,

Lamp Flower, double, red. Grows a foot high, blooms continually for six weeks.

Tunica saxifraga, a pretty and useful plant producing light pink flowers all summer, which resemble a small campanula, grows six inches high, good for the edge of the border and the rockery.

Gypsophila paniculata, Baby's Breath, in bloom during July and August, height 18 inches, flowers white—in panicles.

Spiraea aruncus, Goat's Beard, in bloom June and July, flowers creamy white, three feet high.

Spiraea Chinensis, light pink flowers, very pretty, three feet high, bloom in July.

Spiraea palmata, bright pink, flowers during July, two and a half to three feet high.

Spiraea palmata alba, a pure white variety of the preceding, otherwise the same.

Saxifrage umbrosa, London Pride,

pink, flowers during June and July, 18 inches high.

Lythrum salicarium, Spiked Loosestrife, purplish flowers, grows four feet high, in bloom July and August.

Clematis Davidiana, in bloom August and September, grows three feet high, flowers light purple.

Clematis recta, in bloom June 26 to July 15, flowers white like *paniculata*, height four feet.

Anemone Japonica, Wind Flower, bright pink, and height two feet, in bloom from August to late fall.

Anemone Japonica alba, a pure white one of the preceding, but six inches taller, in bloom the same time.

Anemone, variety Queen Charlotte, claret-colored flowers, otherwise like the last, blooms the same time.

Anemone, variety Whirlwind, semi-double white flowers. This is the best variety, blooms at the same time as the others.

Peonies can be got in a hundred different varieties, and in as many colors,

three feet high, blooming in June and July.

The Tree Peony also can be procured in a number of varieties. I prefer the variety Moutan, light salmon in color, grows four feet high, woody or shrubby, blooms during June, tenderer than the herbaceous varieties.

Bocconia cordata, Chinese Salendine, grows six feet, flowers creamy white on long terminal spikes, from July to September.

Papaver orientalis, scarlet, large flower, nine inches in diameter, three to four feet high, in bloom June and July.

Papaver nudicaule, blooms all season, should be planted time about with the oriental to keep up a display during the season, two to two and a half feet high, color from creamy white to bright yellow.

Dicentra eximia, purple flowers all summer, a foot to 15 inches high.

Alyssum saxatile compactum, yellow flowers, 18 inches high, blooms in May and June.

Boltonia latisquama, aster-like flowers, light pink, in bloom during September and October, height four to five feet.

Stokesia cyanea, Stoke's Aster, large purple flowers, much like asters during August and September, 18 inches high, a good plant when climate and soil suits it.

Inula ensifolia, Sword-Leaved Elecampane, grows six inches high, flowers yellow like a small sunflower during July to frost.

Coreopsis lanceolata grandiflora, Tick Seed, grows two to three feet, yellow flowers, large, from July to fall if the seeds are kept off.

Coreopsis senifolia, grows three to four feet, flowers yellow, small, sweet scented, during August and September.

Helianthus multiflorus flore pleno, Double Flowered Sunflower, grows four feet, in bloom from the end of July to late fall, yellow.

Helianthus sparsifolia, grows four to six feet, and is the best of the single flowered varieties, August and September.

Campanula persicifolia gigantea Moerheimi, blooms large double white, during July and August, two feet and one of the very best perennials grown.

Campanula lactiflora, milk flowered, grows two to three feet, blooms during end of June to August, also one of the best perennials.

Platycodon grandiflora, in blue and white colored blooms, grows to three feet, in flower during July and August. This is also a grand plant of the campanula family.

Statice latifolia, Sea Lavender, a grand plant to grow, in bloom from July to frost, flowers purplish, heath like, good to dry for winter bouquets.

Veronica spicata, purple flowers, all

summer and fall, grows two to three feet high.

Veronica spicata rosea, the same as the last but rose flowered.

Lysimachia clethroides, white terminal spikes, from June to August, three feet high.

Cephalaria Tartarica, grows four to eight feet, flowers during July and August, straw color, resembling a scabiosa.

Rudbeckia triloba, also called Californica, in bloom August and September, flowers dark yellow, four feet high.

Rudbeckia purpurea, purple flowered, in July and August to September, grows three feet high.

Rudbeckia laciniata flore pleno, Golden Glow, grows six to eight feet, double yellow flowers in profusion from July to September.

Achillea ptarmica, The Pearl, produces double white daisy-like flowers in abundance during July to frost, grows two to three feet high.

Achillea tomentosa, produces single yellow flowers, grows six inches high, a good edging plant, in bloom now and again all summer.

Pyrethrum maximum superbum, one of the best of the Ox Eye Daisies, grows three feet, large white flowers with yellow centres, in bloom from June to frost.

Pyrethrum uliginosum, Great Ox Eye Daisy, grows five feet high, making a grand display of white flowers from the end of August to the middle of October.

Delphinium cashmerianum, and *D. grandiflorum*, the former dark blue, single, the other dark blue, double, flowering in July. After they are done blooming if they are cut back they bloom the second time in September; height anywhere from three to six feet.

Liatris pycnostachya, Blazing Star, grows four feet, purple flowers, in August and September.

Helenium autumnale grandicephalum, Great Sneezewort, grows six feet high, flowers single, yellow, like an Ox Eye Daisy, blooms in abundance during August and September.

Helenium grandicephalum striatum, flowers striped with brown, otherwise like the last, blooming at the same time.

Chelone Lyoni, Red Turtlehead, grows four feet, in bloom August and September.

Chelone obliqua alba, White Turtlehead, blooms in August and September.

Pentstemon barbatus Torreyi, Scarlet Beard Tongue, bloom scarlet, from the middle of June to fall, grows three feet high.

Pentstemon ovatus, a white variety of the preceding, height three feet, in bloom June and July.

Physostegia Virginiana, False Dragon Head, a native plant of Ontario, none better under good cultivation, grows four feet, flowers bright pink, in bloom August and September.

Monarda didyma, Scarlet Bergamot, and *Monarda purpurea*, Purple Bergamot, both very good and useful perennials, growing three feet, in bloom July and August.

Mertensia Virginica, Virginian Cowslip, a great favorite, blooming through May and the first of June, 18 inches high, blue flowers.

Phlox, can be got in 100 varieties, any shade of color desired.

Asclepias tuberosa, Pleurisy Root, grows two feet, flowers orange yellow during August and September.

Alstroemeria Simsii, Chilian Lily. Where this plant thrives there is nothing prettier, flowers lily like, yellow with dark veining, in bloom during July and August, height two to three feet.

Tritonia, formerly called Montbretia, can be procured in a half-dozen varieties yellowish flowers, resembling small gladioli, grows two to three feet, bloom in August and September.

Gladiolus communis. This is the type, or wild one; it is quite hardy, and should be grown by all lovers of flowers, blooms much smaller than the present-day hybrids, in bloom in June, flowers reddish purple.

Iris can be procured in a hundred varieties, but I prefer the Japanese and German varieties, Germans in bloom in June, Japanese in bloom in July, all shades.

I would highly recommend the violas or tufted pansies to be grown more extensively. They are nearly as large as the common pansies, and sweet scented like the violet, and in self colors. They can be secured in many named varieties, and bloom more freely than the pansy. Make the bed half leaf mould and the other half sandy loam with a good sprinkling of sharp sand, mix well, and sow the seeds thinly where they are to bloom in the spring.

Every person wants to grow a few lilioms. My choice in variety is *Lilium candidum*, *Lilium Isabellinum*, *Lilium speciosum*, var. *alba*, var. *rubra* are good. To grow them successfully they must be planted at the foot of a north sloping bank, shaded on the south side with trees, plant about one foot deep, never let the frost get at the bulbs, rather cover them with boards, tin or any material to turn the water from them in winter. Give the lily bed one or two inches of a mulch of leaf mould.

Taking everything into consideration I am well satisfied with the steam spraying outfit used in my orchard. It is rather heavy, but with a good team of horses and wide tires does not cause much trouble. Compressed air outfits have to be loaded too often, and gasoline are a little uncertain. I prefer the steam, but the gasoline may be so improved they will ultimately prove the best. (D. J. MacKinnon, Grimsby, Ont.)

Begonias and Their Culture

M. B. Templin, Calla, Ohio

BEGONIAS derive their name from a noted French patron of science, Michael Bégon, who lived between 1638 and 1710. They were first introduced into England in 1777. Are indigenous to Asia, South Africa, Mexico, Central America and South America.

There are hundreds of species known, of which about 150 have proved to be of value. In recent years there has been a great improvement in many plants, but few have been improved so rapidly as the begonia. Many hundred varieties are known and are in cultivation, but the number worthy of general cultivation and dissemination does not exceed a few dozen. For horticultural purposes begonias are usually divided into three general classes: (1) Fibrous-rooted, or winter blooming; (2) Tuberous-rooted, or summer blooming; (3) Rex, or ornamental leaved.

FIBROUS-ROOTED

The first class embraces the flowering begonias, so-called in florists' catalogs. The variety, brilliancy and beauty of their foliage, and their remarkable free-flowering quality during the winter, combine to make them one of the most desirable and most popular plants. As pot plants for the window, garden and conservatory they have few equals. While they are exacting in their requirements, these requirements are simple and easily supplied. They respond very readily to intelligent treatment. Most varieties are rapid growers, a few months—or at most a year's—growth will produce beautiful specimens from cuttings. They are among the most satisfactory plants for the living room.

Among the most popular varieties that appear in florists' catalogs and in local greenhouses, are the following: Alba perfecta, Argentea guttata, Diadem, Metallica rubra, Sandersonii, Thurstonii, Vernon, etc., with new varieties of merit being added from year to year. One of the most valuable of the recent introductions is Begonia Templinii. By all who have seen it

it is acknowledged to be the most beautiful. It is positively new and distinct in its class. The accompanying illustration, made from a photograph, gives a fairly accurate idea of the characteristics of the plant. It is an upright, vigorous grower; leaves varying in



Begonia Templinii

length from six to ten inches, with wavy margins; glossy, metallic green, profusely and irregularly blotched and variegated with various shades from creamy white to golden yellow, beautifully tinged and flushed with flesh-pink, deepening towards the edges to the richest crimson; under side bright coppery crimson. It possesses the most remarkable combination and blending of colors ever found in a begonia or any other plant. The flowers are a beautiful pink. As a bedder, when exposed to partial sun, it is wonderfully effective.

Gloire de Lorraine is a grand and wonderfully profuse bloomer that is being illustrated and described in glowing terms in magazines and trade papers. Unfortunately, however, it does not give satisfaction under ordinary house culture, being especially adapted for forcing in greenhouses and conservatories.

Flowering begonias, as a class, are of very easy culture. A soil compost consisting of three of good loam to one of thoroughly rotted manure and one of sand, will produce excellent results in growth and flowers. Cuttings taken from a healthy growth will root readily in sand, if given bottom heat. With reasonable treatment as to light, moisture, fresh air, and repotting when needed, they soon become fine plants.

TUBEROUS-ROOTED

The second class, tuberous begonias, were introduced about 35 years ago from the South American Andes. When first grown in the United States it was thought they would be a fitting companion for the geranium, but this was an error, as they would not withstand the dry atmosphere and hot sunshine. They require partial shade to come to perfection. During the past few years

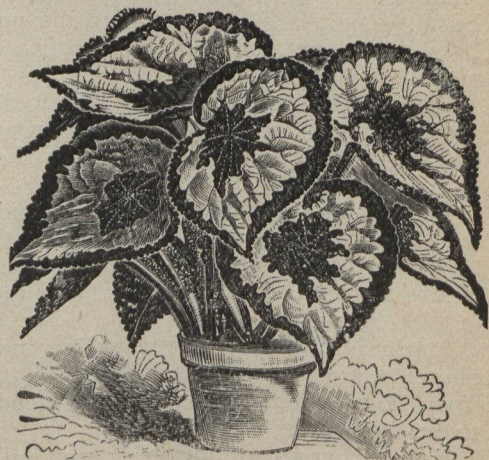
the improvement in size, texture and coloring of leaves, and the size and colors of the flowers, has been phenomenal. The flowers are of enormous size, often five to six inches in diameter; the petals are thick and wax-like, and often creased and wrinkled most beautifully. In addition to the beauty of the flowers the foliage has been so improved that it is difficult to find two plants alike as to foliage. They bloom very freely all summer. They may be propagated from seed, but the most satisfactory way is to buy tubers from some reliable florist.

Their culture is very simple, and they are exceptionally fine either for pot plants or for bedding, being easily raised and requiring but little care. The soil should be composed of rich loam, leaf-mould and sand, and should be kept moist, but not wet, and always well drained. They succeed best in a partially shaded situation well protected from strong winds. Tubers can be procured in both single and double varieties, in shades of rose, red, yellow, and pure white. Start tubers from February to April.

REX BEGONIAS

Rex begonias are grown expressly for the beauty of their foliage. The original type, introduced from Asam, India, was first illustrated in Flore des Seres, published in Ghent, Netherlands, about 1857. From this type, by crossing with a few other species, and then from hybrid seedlings from their progeny, they have been so improved as, in some instances, almost to have lost resemblance to the original, except as to habit of growth.

In no other class of plants are the rich metallic shades and various colors so satisfactorily blended, while the size, color, and form of the leaves are of the greatest variety. Some show bright green, pure silver, bronze and velvety green; others have a distinct zone of bright, rosy-plum color; and others a



Rex Begonia

zone of light, dull red. As pot plants they have few equals, though their flowers are small and inconspicuous. They are propagated from either whole or segment-leaf cuttings, but do not root readily for the amateur.

The culture of the Rex is simple. Soil should be similar to that for other

begonias. They require a moist, but not wet, rather warm, shady situation, protected as much as possible from strong winds. I know of no other plant that affords more pleasure and satisfaction when grown as a pot plant under favorable conditions.

Begonias, generally speaking, are in-

jured by too much sunshine during the summer; they are benefited by all the sunshine they can get during the winter and spring months. Their culture is simple and they are seldom attacked by insects. With fair treatment, they will always prove satisfactory.

What Can be Grown on a Small City Lot

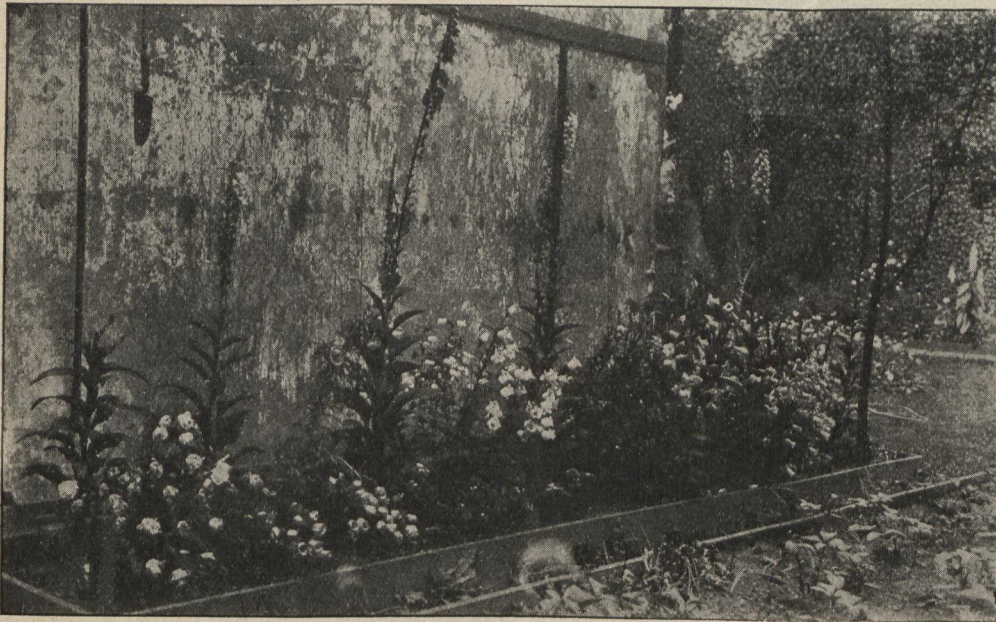
Dr. Douglas G. Storms, Hamilton, Ont.

MY lot on which the numerous varieties of plants and flowers are grown is $91\frac{1}{2}$ feet deep with $45\frac{1}{2}$

close together and arranged so that the colors are mixed. These include Persians, white and lilac, also the cut-

double cream, pink and very dark purple. This hedge is not allowed to grow more than five feet high. What pruning is required is done as soon as the flowers fade, cutting off the old flower stalks at the same time.

In the north-west corner of the garden, in the shade of a large pear tree, is the wild flower garden where we have—beginning in the earliest spring and coming in succession until the late fall—some rare beauties. This collection comprises: Hepatica, Liverwort, March to May; Claytonia Virginica, Spring Beauty, March to May; Sanguinaria Canadensis, Bloodroot, April and May; Trillium nivale, Early Wake Robin, March to May; Trillium erectum, Purple Trillium, Wake Robin, April to June; Trillium grandiflorum, Large-Flowered Wake Robin, May and June; Viola obliqua, Common Purple Violet, April to June; Viola pedata, Birds' Foot Violet, April and May; Viola pubescens, Yellow Violet, April and May; Arisæma tryphyllum, Jack-in-the-Pulpit, April to June; Polygonatum biflorum, Solomon's Seal, April to June; Vaguera racemosa, False Solomon's Seal, May to July; Cypripedium hirsutum, Yellow Lady's Slipper, May to July; Orchis



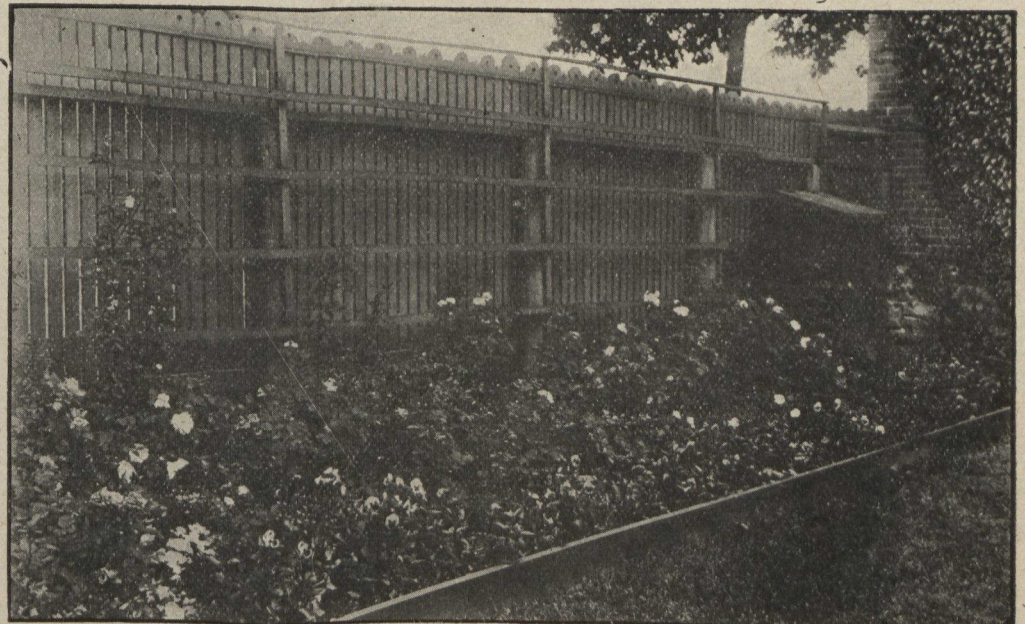
Digitalis and Canterbury Bells in Dr. Storms' Garden

feet front facing the west. In the north-west corner $31\frac{1}{2}$ by $25\frac{1}{2}$ feet is taken up by the house. This leaves a block in the rear 46 by $45\frac{1}{2}$ feet, and a strip along the south side of the house $25\frac{1}{2}$ by 14 feet. The lot is shut in on the east by a large building, presenting a blank wall the whole width of the lot. This wall I have covered almost completely with Ampelopsis Veitchii. A bed runs the full width, $45\frac{1}{2}$ feet by eight feet, filled along the wall with such hardy perennials as Anemone Japonica, six varieties; aquilegias, 10 or 12 varieties; Coreopsis grandiflora, helianthus, gaillardia, rudbeckia (Golden Glow), and R. hirta, Papaver orientale, digitalis, 12 perennial phloxes, a corner of Lily of the Valley, and a few others, and in front of these rose trees, including a bed along the north side about 10 feet wide, to the number of 127, comprising about 100 varieties of roses.

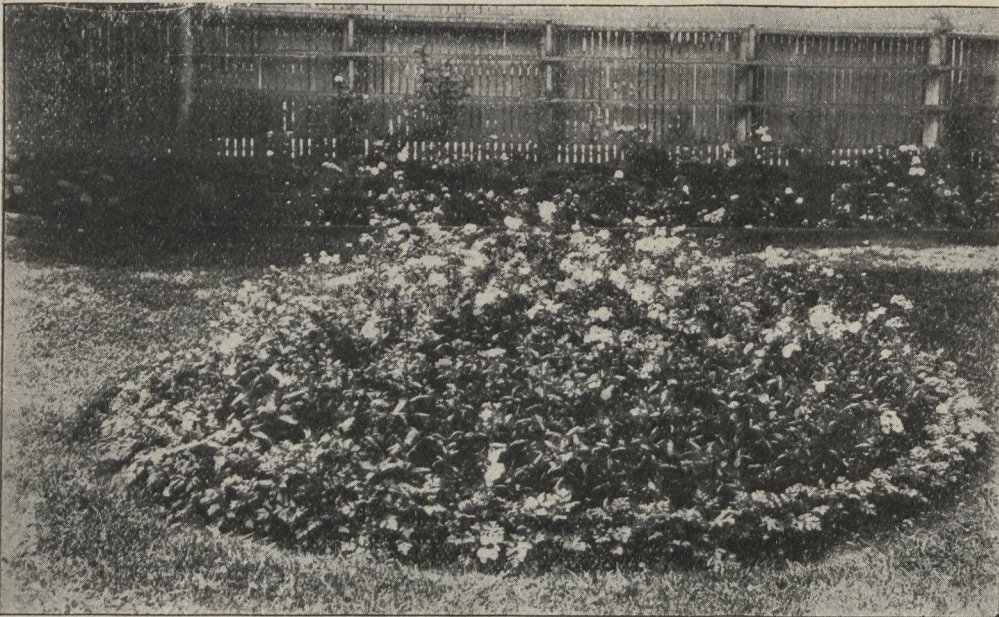
Along the south side and in a bed in the strip south of the house, there are over 40 varieties of native ferns.

Protecting the fern bed is a hedge comprising 23 varieties of lilacs planted

leaf which is rare, single and double blue, single and double white, and



One of Dr Storm's Rose Beds



Centre Bed of Phlox Drummondii and Verbenas

spectabilis, Showy Orchis, April to June; Uvularia perfoliata, Straw Bell, May and June; Erigeron annuus, Daisy Fleabane, May to November; Anemone quinquefolia, Wind Flower, April to

June; Thalictrum dioicum, Early Meadow-Rue, April and May; Thalictrum polygamum, Tall Meadow Rue, July to September; Impatiens biflora, Jewel Weed, July to October; Eupatorium

ageratoides, White Snakeroot, July to November; Solidago speciosa, Showy Golden Rod, August to October; Solidago caesia, Wreath Golden Rod, August to October; Solidago bicolor, Silver Rod, July to September; Rudbeckia hirta, Black-eyed Susan, May to September; Aster patens, Purple Daisy, August to October.

Along part of the west end is a bed of 21 varieties of Japan Iris, and on the north side of the plot south of the house a bed of digitalis and Canterbury Bells, one of the most charming beds in the garden.

In the centre space a round bed 10 feet in diameter, filled with Phlox drummondii and verbenas, was made. This gives a wealth of bloom the whole season, and comes in nicely for cutting. In the strip beside the house, too, was a bed of strawberries be'onging to the boys.

To be able to go into the garden and cut a bouquet of 56 varieties of roses, or six or eight varieties of lilacs, or any number of perennials is a pleasure I would be loath to be deprived of. With such collections as I have here referred to there is no dearth of flowers from early spring until late fall.

The City Vegetable Garden

Rev. P. C. L. Harris, Guelph, Ont.

VEGETABLES fresh gathered from your own garden! No mean dream, is it? A few people in the crowded portions, and most people living on the fringes of a city, can successfully grow vegetables, and, in the growing of them, will develop good cheer, swift blood, muscle and refreshing sleep. They are few who cannot get very "Near to Nature's Heart" at small expense and—a little trouble.

There are many reasons why some people do not make a success of the vegetable garden in the rear of a city house. When that house was built, the earth of the cellar excavation was used to level the lot surrounding the house. That earth is lifeless. To spade it, and sow seed means failure from the start. Trenching well, so as to bring the good soil to the top, the use of well-ripened stable manure, thorough spading, good seed and continued cultivation, spells success from the start.

One prominent reason for failure is—poor seed. It pays to buy your seed from a reliable house. Many so-called seedsmen know very little about the life of seeds, and keep them from year to year. These, when sown, fail to germinate, and consequently the amateur gardener is disappointed and disheartened. Let me repeat, it pays to buy your seed from a reliable house, and we have a number in Canada.

If one has had no experience in growing vegetables, it also pays to hunt up some one who has been successful and ask for pointers. Gardening is a very friendly subject, and the novice will find even a professional always glad to give advice. That pays. It will prevent many unnecessary failures.

Do not sow what you do not like to eat. Some people can eat all varieties of vegetables. Others like only a few varieties. Do not sow a large bed of lettuce, when all you need is a couple of short rows. Plan your plot, be it large or small. It pays to measure. I measure for every row and all beds. Your garden will look the neater and you will be better pleased with your efforts. The neater the garden the greater the inspiration to engage in the labor the following year. Leave a little space for flowering plants. They will assist the interest. They will brighten your life. I have been cultivating a vacant lot for two seasons. For years before it was a dumping ground for old harvesters and—weeds, burdocks, thistles and marsh mallows. It has not been a picnic, but I have come out on top, and it has paid. People have stopped to look at my garden. Last season we lived on vegetables and saved a meat bill.

What shall I grow? Well, let us see. A few potatoes—Burpee's Extra Early,

Rural New Yorker and the old Early Rose—good varieties. Corn?—well, if you are after something choice and early, try Burpee's Golden Bantam. It's small but, oh, my! There's no mistake about it. The Cory corn is another early variety, and succeeds well where the season is short. For main crop, try Stowell's Evergreen. For Peas—dwarf and early, try American Wonder and Alaska; Burpee's Extra Early, 18 to 24 inches high, a grand pea. Stratagem is a fine pea of medium height, as is also Burpee's Profusion, three feet—one of the best peas to grow. It is a great mistake not to grow some of the taller varieties. Telephone, or its improvement—Boston Unrivalled, Champion of England and Laxton's Evolution. Use four feet wide chicken fence netting, or alder brush, which is much more suitable, if you can get it. Yorkshire Hero is another fine pea. You do not know what peas are like until you have a dish of these large peas on your table.

Beets—Early Egyptian, Dark Stinson, and the Long Smooth Blood-red. I like the dwarf beets, and, for summer use only. When small, served up with butter, pepper and salt, they are delicious. Carrots—Early Scarlet Horn, Oxheart and Danver's Half Long. Do not wait until winter before using the carrots; try them when very young. Long Smooth or Hollow Crown parsnip

is as good a variety as you will want to grow.

I would not advise any one, with a limited plot, to attempt either cabbage or cauliflower.

What about beans? Well, of the dwarf varieties, try Early Yellow Six Weeks, and Burpee's Saddle Back Wax. If you want a dwarf bean quite ornamental, as well as delicious, try Burpee's Blue-podded Butter Beans—tall growing or climbing; White Creaseback—for eating or pickling, none better; White Dutch Case Knife—young pods for eating and beans excellent for shelling; Horticultural, and Lazy Wife's—of fine flavor and valuable for snapshirts. Lettuce—Grand Rapids, Tom Thumb, Hanson, and many others. Onions? Well, yes, try them, but first ask some one who is successful with them. Danver's Yellow and Prizetaker are hard to beat. You will need a row of cress and mustard, and several rows of spinach—the Victoria being a good variety. If you have a rich mellow soil, try a few rows of salsify, or vegetable oyster. A few plants of Scotch Kale will give you fine greens after the frost has come. Cucumbers? Yes, Everbearing, Boston Pickling, Giant Pera and Fordhook White Spine. Emerald is also worth growing. If you want a few squash, try Mammoth White Bush for summer use, and Hubbard for winter.

Now for tomatoes. Buy well-established plants and give them the hottest spot in the garden. Work the ground well. If it is a heavy soil and you can easily get sand, mix quite a lot into the soil, with a liberal supply of manure. After the plants have been well established, put a coating of sand on the ground all around the plants. Use stakes or trellis wires to tie the plants to, and cut out all lateral branches below the fruit. Varieties?—Well, Spark's Earliana, Matchless, Acme and Golden Queen. Try a hundred or so of Paris Golden celery if you want to. The experiment will be interesting.

The quantity of vegetables you can get off of a small plot will amaze you. It is difficult to tell you how to do it. I could shew you how. You will learn, best of all, by going at it yourself. It is an excellent tonic.

How to Start Ferns

Thos. Manton, Eglinton

How can Asparagus and Maiden Hair Ferns be best started?—(Mrs. A. P. H., Prince Edward Co.)

Asparagus Plumosus, generally called the Asparagus Fern, is best raised from seed. The seeds can be procured from any of the leading seedsmen. They germinate quickly if soaked for an hour in water as hot as the hand can be held in, and then sown in rich garden soil and placed in a warm window. As soon as the plants are large enough to handle, they should be potted each into a very

small pot and kept in a warm, light place. As the pots fill with roots larger pots should be given and extra rich soil supplied. Maiden Hair Ferns are started from ripe spores gathered from strong, well-grown plants.

BULB DEPARTMENT

Questions Answered by
Mr. Herman Simmers

Uncovering Bulbs

What is the best time to uncover bulbs which have been protected during the winter, and how should it be done?—(C. J. K., Picton.)

To give a definite date one cannot do so; generally towards middle of April if weather continues good. After they have been uncovered for a few days should a frost come afterwards they will not be damaged. To uncover the bulbs remove the litter with a fork, taking care to avoid breaking shoots that are coming through the ground.

Best Bulbous Plant

Is there any bulbous plant more desirable for perennial borders than *Lilium candidum*.—(H. C., Orangeville.)

Lilium candidum has always done remarkably well in this climate. Others have done fairly well but do not increase as rapidly. *Lilium auratum*, *Lilium speciosum*, *album*, *roseum*, *rubrum*, *punctatum*, have been successful, and follow the *Lilium candidum* in their blooming period.

Cutting Crocus in Lawn

How long should crocus bulbs in the grass be left to ripen after flowering, before the lawn is mowed?—(H. G., Guelph.)

It seemingly makes no difference at what stage the tops are cut off, especially if the bulbs are planted deep enough. They are more likely to increase than diminish if cut off early.

Early Spring Work

What work should be done with bulbs during April or early May?—(J. C., Simcoe.)

Very little work is necessary except to carefully remove the litter placed there in the fall. All the other work should have been done to the bed in the fall at time of planting.

Bulbs After Flowering

Will you kindly tell me whether a tulip or hyacinth bed can be utilized after the bulbs are done flowering, for cannas, gladioli, Tuberous Begonias, etc., without removing the bulbs?—(A. E. B., Stirling.)

This depends very much on whether you have planted your tulips, hyacinths, etc., deep enough. If you have you may plant gladioli or Tuberous Begonias in the beds, but cannas had better not be as they root very deeply. They are

apt to take too much nourishment from the soil for the bulbs to do well another season. As soon as the bulbs have bloomed and tops withered somewhat you can fork the bed lightly and dig some well-rotted manure or artificial fertilizer in the bed. With this treatment good results are assured.

April Planting

Are there any bulbs that should be planted in April?—(S. A., Burlington.)

Assuming this to be open air planting there are none that can be planted with safety.

Seeding Down a Lawn

Prof. H. L. Hutt, O.A.C., Guelph

I desire some advice in the matter of seeding down for a school lawn. The soil is very sandy but not barren sand. Garden crops do fairly well in it. Which is it more advisable, to sow the seed in the fall or in the spring? I have heard that if seeding is done in the fall, one bushel of rye per acre should be used with the lawn grass to serve as a foster crop. The rye would come up in the spring and help to form a sod. Would it help to scatter some commercial fertilizer and should it be applied with the seed in the fall, or could that be done as well in the spring? Would a top dressing of manure in the fall, if the seeding is done then, be of much advantage? I have used barley with fair success as a foster crop when seeding in the spring.—(J. W. G., Kingston.)

In seeding down a lawn, it is not advisable to use anything as a foster crop. Rye would grow so strong and rank as to nearly choke out the smaller grasses sown at the same time. The best way to get a well-seeded lawn is to use a mixture of the hardy native grasses of fine growth. We have found Red Top, Blue Grass, and White Clover, equal parts by weight, make an excellent mixture. The best time to seed down for a lawn is early in the spring, as there is then sufficient moisture to cause early germination of the seeds, and in a favorable season there should be no difficulty in getting a good green sward in a couple of months. The older it gets the thicker it becomes.

When seeding is done in the fall the plants usually have not time for much growth, and a great number are destroyed in the winter. If fall sowing is resorted to, I would recommend giving the soil a liberal dressing of well-rotted manure before winter comes. The coarsest of this can be raked off in the spring before the seed is sown.

The seed should be raked into the soil, and in case of sandy soil in a dry season, it would be best to roll the land after seeding. If the ground is poor and the grass does not come up evenly, this can be remedied by occasional top dressings of well-rotted manure in the fall and raking in additional grass seed in the poorer spots in the spring.

Fertilizing the Market Garden

Prof. R. Harcourt, O.A.C., Guelph

BEFORE the market gardener can intelligently and economically use commercial fertilizers it is essential that he have, first, a clear conception of the needs of the soil under cultivation; second, a definite idea of the nature of the growth wanted, whether for large development of leaf and stem, or for seed and fruit, and how this may be forced; and third, a knowledge of the function of the various constituents of a fertilizer, and the value of different forms of these constituents as found in the various brands of fertilizers on the market.

It is not an easy matter to express exactly what is meant by soil fertility as so many conditions are involved, all of which have more or less influence. A fertile soil must contain, at least, a fair quantity of those constituents that are removed from the soil in maximum quantities by the crops grown. Experiments have demonstrated that plants require at least 10 chemical elements for normal growth and development. Each of these substances has its own particular work to perform and no one can take the place of another. Fortunately, most soils are abundantly supplied with all these essential constituents, nearly all of which are held in such forms that they are not readily leached from the soil.

Plants, however, take up comparatively large quantities of nitrogen, phosphoric acid, potash, and lime, and, as they are removed with the crop, it must follow that in time the soil be-

comes more or less depleted of these constituents. The organic matter of the soil is the source of nitrogen to the majority of plants, and in its decay the nitrogen is converted into a soluble form which is quickly lost in the drainage water unless taken up by plants. Lime, also, as a result of the many chemical changes taking place in the soil, is continually being carried away in the soil water. Evidence of this is seen in the fact that water collected from the soil or rock contains lime, or is "hard." These, then, are the four constituents which must receive the greatest amount of attention in the cultivation of the soil.

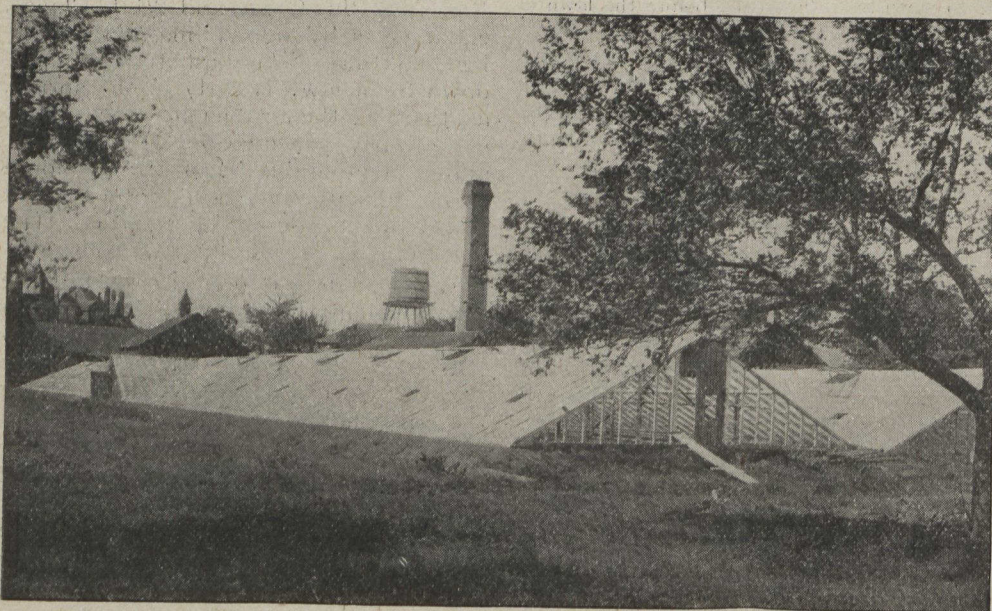
But the presence of the chemical elements of fertility in themselves is not sufficient to insure fertility. To serve as food for plants they must be in a form available to the roots. Water is absolutely essential both for the solution of the food elements in the soil and for their distribution in the plant after they are acquired. As we understand soils, they are made up of particles of various sizes. When it is well drained, the water is held on the surface of these particles, and the interspaces are open, thus making it possible for the air to penetrate into the soils and supply the oxygen essential to the life of the various types of micro-organisms busily engaged with the decomposition of the organic matter. The amount of water held on the surface of the particles depends on their size and shape; the smaller and more irregular

the shape, the greater the amount of water they will hold. Consequently, a drained clay soil will hold more water than a sand, and a soil rich in humus more than one poor in that constituent.

Humus not only increases the water-holding power of the soil, but it also appreciably effects its general physical condition, and, further, in its decay causes potash and phosphoric acid to be rendered available to plants. Humus apparently has a wider influence on the fertility of a soil than any other one factor. The various essential elements of plant food may be supplied in inorganic forms, but unless humus is present to regulate the general physical conditions and to supply the essentials for the breaking up of the insoluble salts formed in the soils, good remunerative crops cannot be produced. This fact must not be lost sight of, for unless humus is present we cannot hope to get good results from the fertilizers applied.

Nitrogen forces leaf and stem growth and tends to retard maturity; phosphoric acid aids in the formation and transportation of the proteids and seems to hasten maturity, and potash appears to be essential to the formation and transportation of carbohydrates. With many of the crops of the market gardener, especially those sold in the immature state, quality is dependent upon, or measured by, both appearance and palatability; and palatability is determined by succulence and sweetness of the vegetable, or its freedom from bitterness, stringiness, and other undesirable characteristics that frequently exist, and that can be largely eliminated by providing an abundance of food for a continuous and rapid development of the plant. Any delay in the growth of radish or of lettuce is largely responsible for the sharp taste and pungent flavor of the former, and the bitterness and toughened fibre of the latter. For crops of this nature, a generous supply of potash and phosphoric acid is essential, but nitrogen is the constituent that should predominate.

Owing to the wet fall and open winter and the consequent leaching away of nitrates, it is possible that nitrate of soda will give unusually good results this year, especially on crops sown in the early spring. While nitrogen may be used freely on some crops when maturity is required, as with the tomato, corn, potato, sugar beet, etc., a soluble form of nitrogen, as nitrate of soda, may be used early in the season to insure a good start, but it should be withheld during the latter stages of growth in order that the ash constitu-



Where Vegetables are Forced

These greenhouses are owned by Mr. John Westwood, of Todmorden. The chief crops grown in them are lettuce and radish. At present they are filled with lettuce, radish, parsley, cress and mint, but the last three crops in small quantities. Mr. Westwood claims that lettuce and radish are the most profitable. The tank in the rear is used for high pressure in the spring and fall. In winter, however, the water supply is taken from a tank in the boiler house. A windmill is used for lifting the water to the tanks, and the pipes are underground and away from danger of freezing.

ents may have a chance to hasten maturity. Too much nitrogen, or nitrogen applied late in the season, will cause a large growth of stem, and prevent the setting and development of fruit.

Regarding the value of the various forms in which the different constituents exist in mixed fertilizers, it may be said that most soluble and active manures produce their principal effect at once and are of little benefit to subsequent crops. Ammonium salts or nitrates give all their effects the first year. Sparingly soluble substances, and those that must suffer decomposition in the soil before they are of service to the plant, as coarse tankage, ground bone, and Thomas phosphate, will, on the contrary, continue to produce an effect over many years. Consequently, the soluble substances give the quickest returns for the money invested. It is hardly necessary to say that soluble manures, as nitrate of soda, should not be applied until planting time, and even then it is best to save part of the fertilizer and apply small portions at intervals of two or three weeks.

As the vegetable growers understand the true nature of the fertilizers and the needs of the soil and crop, the tendency will be to buy a fertilizer containing a single constituent to supply the known deficiency of the soil or the element particularly required by the crop. At present, too frequently so-called complete fertilizers, which are specially recommended for certain crops, are purchased. These may or may not answer the purpose under the particular conditions. Fertilizers are too expensive to be applied at random. It is essential that a clear conception of what is required be formed and then that the constituents that will produce the required effect be purchased. To do this a gardener must study his soil and crops and understand the fertilizer or mixture of fertilizers he intends using.

During the last three months we have received a number of requests to analyze mixed fertilizers. It does not seem to be generally known that according to a law enacted by the Dominion Government at Ottawa, no fertilizer selling at more than \$10 a ton can legally be sold in Canada without a guarantee giving the percentage amount of the various constituents contained in it. While we are willing to do all we can to help the vegetable growers with their fertilizer problems, we must refer this portion of the work to the Inland Revenue Department of Ottawa, and we would advise all purchasers to demand the results of the analysis made in that department.

Guarantees alone will not, however, wholly protect the buyer. He must not only know the percentage composition of the fertilizer and the nature

of the materials from which it was prepared, but he must also be able to determine from the analysis whether there is a proper relation between the guarantee and the selling price.

There appears to be a growing tendency on the part of the vegetable growers to use fertilizers. Before investing much money in them let the grower study his conditions and study the fertilizer. There is a place for them when properly used, but when improperly applied, they fail to give results. They will not take the place of cultivation, and should be looked upon as adjuncts to good general manuring and cultivation.

Growing Cucumbers

"My cucumbers are started about April 1 in six inch pots," said Mr. Geo. Benner, of Burlington, to THE CANADIAN HORTICULTURIST recently. "They need very careful watching for the first three weeks, as too much water when the plants are young is sure to cause damping off. The plants should not be set out before May 24, because a slight cold snap so checks them that much time is needed by them to revive from the setback. When transplanted from the pots without disturbing the roots, the plants go right ahead.

"I set them out in rows five feet apart and four feet apart in the row. When set in this way the runners can be turned to one side and cultivation be kept up longer one way. They need a rich soil of sandy loam that retains moisture well.

"Early White Spine," continued Mr. Benner, "is the best all-round table cucumber. It holds its color well and suits the early market. Last year I let many of my cucumbers ripen and supplied Ontario seedsmen with about 300 pounds of first-class seed."

Fertilizer Formulæ

Frank T. Shutt, M.A., Chemist, Dominion Experimental Farms

With rich garden loam, reinforced with well-rotted manure, there is seldom occasion to use fertilizers. In many instances, experiments alone can answer the question if fertilizers are necessary or will prove profitable. In many market gardens and orchards, however, the soil has become so depleted that special fertilizers are frequently used. Flower beds, and lawns, too, require special applications if satisfactory results are to be obtained. A careful study has shown that the use of the following mixtures gives satisfactory returns.

For general garden crops, including vegetables, small fruits, etc.: Bone meal, 1½ parts; superphosphate of lime, 1½ parts; sulphate of potash, 1 part. This should be applied at the rate of 800 to 1,500 pounds per acre, according to the

condition of the soil. Thoroughly incorporate with the surface soil at the opening of the season. After growth has commenced top dress with 100 pounds of nitrate of soda per acre. If the foliage is yellowish, or the growth lacks vigor, repeat the application of nitrate three weeks later.

For flower beds: Bone meal, 4 parts; sulphate of potash, 1 part. Work well into the soil at the rate of 4 pounds per square rod. During the early part of the season top dress with nitrate of soda at the rate of one-third to two-thirds of a pound per square rod.

For lawns: Bone meal, 2 parts; superphosphate of lime, 2 parts; muriate of potash, 1 part. Apply at the rate of five pounds per square rod. At intervals of two to three weeks during the earlier part of the season top dress with nitrate of soda at the rate of half a pound per square rod.

The Seed Control Act

The question of guaranteed seeds is one of great interest to the market gardener. In some sections a few gardeners believe that the Seed Control Act passed by the Dominion Government in 1905 protects them against impure seeds, seeds that are not true to name or seeds that do not germinate. THE HORTICULTURIST recently wrote to Mr. G. H. Clark, seed commissioner for Canada, asking for particulars regarding this bill and its relation to market garden seeds. In return a copy of the Seed Control Act was sent. Section 3 reads: "Any seeds of cereals, grasses, clovers or forage plants," and section 4 refers to "timothy, red clover and alsike seeds," but no provision is made in the bill that will apply to the seeds of any kinds of crops that are generally considered to come under the category of hoed crops.

In answer to questions asked him, Seed Commissioner Clark wrote: "Judging from the development of the guarantee system in foreign countries, it would seem clear that as soon as there is a sufficiently strong demand on the part of gardeners for seeds of guaranteed germination qualities, so soon will we have Canadian seed merchants rise to the occasion and cater to those demands. As to whether the seed user could secure conviction and damages against the seed merchant, on account of supplying seeds not true to name, would depend largely on the contract between them. Seed merchants, as a rule, take every precaution to guard themselves against liability because of such conditions."

Spraying is becoming more popular every year and every fruit grower in this section will soon own a sprayer.—(C. F. Bailey, Coldbrook, N.S.)

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THE DOMINION CONFERENCE

The Dominion conference, together with Hon. Mr. Fisher's promise to convene similar gatherings at regular intervals in the future, has opened a new era for the fruit industry of Canada. It has injected a national spirit among the fruit growers in the different provinces that has been lacking sadly in the past. The very vastness of this country, of which every Canadian is so proud, has made it impossible for the fruit growers in the various sections of the Dominion to meet together for the consideration of matters relating to their interests, that have been of national importance. This has prevented their understanding each other's conditions as thoroughly as was desirable, and in many ways has retarded the development of the fruit industry.

Now, all is changed. The recent conference not only brought representative delegations of growers from all parts of Canada into close touch with each other, but served to show them that the interests of the growers in the different provinces, instead of being inimical, are, in the main, identical. The friendly spirit that animated the discussions proved that the delegates realized the identity of their interests. It means that in future many matters that hitherto have been discussed from a sectional viewpoint will be dealt with in a broader spirit, while the regular recurrence of these conferences will make possible more rapid improvements in matters relating to the fruit interests of the Dominion as a whole, than has been the case in the past.

So many matters of widespread importance were dealt with, it is impossible, even yet, to fully grasp the effects that will follow from the conference. Possibly the two most important decisions reached were those relating to the adoption of a "fancy" grade for apples, and the defining of a No. 2 apple. The resolutions relating to crop reports, railway regulations, and the development of foreign markets, however, are also of great importance.

It is most unfortunate that provision was not made for the conference to last at least a full week. Even that time would not have been sufficient to have permitted a thorough discussion of all the matters that were on the program. So limited was the time at the disposal of the delegates, many of the resolutions adopted were drafted in a most hasty nature. The delegates realized this, but felt that the resolutions would serve to show the Government what the desires of the fruit growers are, and they felt safe to leave the working out of these desires in the form of practical legislation to the Fruit Division of the Department of Agriculture. One point made manifest was the complete satisfaction that is felt with the results of the Fruit Marks Act. The feeling was that the Act has not only been a complete success, but that it should be strengthened. This was manifested by the various resolutions relating to it that were adopted.

It is regrettable that owing to lack of time many matters that were on the program were not discussed. These include such subjects as those relating to nurseries, fruit conventions and institutes, fall fairs and fruit exhibitions generally, judging and score cards, cooperative selling, commercial agents abroad, and many others. Regret that these were not dealt with is tempered somewhat by the knowledge that there will be another conference at which it will be possible to deal with them.

The action of Hon. Sydney Fisher in presiding at the various sessions of the conference was deeply appreciated by the delegates. Few of those present expected to find the Minister of Agriculture as thoroughly informed on matters relating to the fruit industry as he showed himself to be. Much of the success of the conference is due to the able manner in which Hon. Mr. Fisher fulfilled his duties as chairman, and to the knowledge regarding Dominion legislation and international subjects relating to the fruit industry that he brought to bear on certain of the matters discussed. The growers departed for their homes feeling that they had left their views, as expressed by the resolutions, in the hands of a Minister who thoroughly understands their desires and who can be depended upon to look after their interests.

On the whole, the conference was a decided success. The most important matters were discussed fully and disposed of in an intelligent and satisfactory manner. Questions that long have needed an answer were disposed of in a manner that should benefit the industry. May the national spirit it created grow and prosper until it has cemented the fruit growers of the Dominion in a bond that will benefit them individually and collectively as well as Canada and the Empire as a whole.

BEAUTIFY YOUR TOWNS

Those who read the report of the address by Mr. J. Horace McFarland that appears in this issue, cannot fail to be filled with a desire to do something by which the home surroundings will be made more beautiful. Public-spirited persons should be inspired to stir up some movement that will result in the town in which they belong being transformed. Many Canadian towns and cities need some transformation. The mere mention of the desired changes, however, when associated with the thought of the probable cost, generally results in no action being taken.

The success that followed the efforts of a few high-minded citizens of Harrisburg should tend to encourage towns to make a forward step. In that city \$1,090,000 has been spent in four years, and yet the tax rate has increased only one-half mill. In return for this trivial increase in the tax bill the citizens have pure water, perfect sewage system, lovely parks, clean streets and numerous other pleasure-giving and health-giving blessings that were formerly unknown to them.

This resulted from the earnest labor of a

few. When the council would not grant money to make the beginning, the earnestness manifested itself in a handsome subscription. In a short time \$5,000 were subscribed and a careful and systematic plan of educating the citizen to the needs of their city, culminated in the election of a council with power to grant \$1,090,000 to civic improvements. Have these people regretted the vote of four years ago? The fact that \$800,000 is voted for further improvements in 1906 is sufficient answer.

The expenditure of such a large sum is not necessary in every city. In many cases our horticultural societies could do much to secure funds large enough to make noticeable changes and improvements. Excellent opportunities are offered for educating the people to the advantages of having streets and parks and lawns beautiful, to say nothing of the water and sewage systems. The influence for good on the children, of parks with their trees and flowers, and birds, cannot be overestimated. As Mr. McFarland happily put it, "Parks are cheaper than policemen."

If any proof of the excellence of THE CANADIAN HORTICULTURIST as an advertising medium is needed it is afforded by the frequent requests that are received for the premiums that are given to readers who buy from our advertisers. Here are four received recently: Mr. Philip H. Gardner, of Mitchell, secured a \$500 piano from the Gerhard Heintzman Piano Co., one of our advertisers; Mr. David M. Ross bought \$12.25 worth of nursery stock from the Smith & Reed Co., of St. Catharines; Mr. LeRoy Curtis, of Leamington, purchased \$30.40 worth of fertilizers from W. A. Freeman & Co., of Hamilton, and Mr. J. C. Gilman, president of the New Brunswick Fruit Growers' Association, bought \$82 worth of goods from C. W. Van Duzer, of Grimsby. Each of these gentlemen has been sent a dollar as a premium for buying from our advertisers and for telling them that they saw their advertisements in THE HORTICULTURIST. With such evidences of direct results gained by advertisers who use our columns is it any wonder that our advertising patronage has doubled every year for the last four years?

The directors of the Ontario Vegetable Growers' Association last month showed that they are wide awake to the interests of their members when they arranged to appoint twenty-five or more paid crop correspondents throughout the province, that they may issue regular monthly crop reports next summer. Nothing they can do will be as much appreciated by their members as these reports if they are managed properly.

No man deserves as much credit for the success of the recent conference as the chief of the fruit division, Mr. Alex. McNeill. The careful manner in which the details had been planned reflects great credit on his work. This fact was appreciated by the delegates, although, like many other matters, time did not permit of its being mentioned in the form of a resolution.

One effect of the recent fruit conference will be to arouse greater interest in the affairs of the provincial organizations. The honor of being a delegate to the next conference is likely to be eagerly sought.

Now is the time to start planning for the next Dominion conference.

Shipping apples in boxes is still in its infancy. Boxes cost more and there is more work in packing. The barrel is in greatest favor here, although boxes should be all right for selected stock.—(C. F. Bailey, Coldbrook, N.S.)

Fruit Packing and Fruit Packages

J. J. Philp, Winnipeg, Man.

IN discussing the packing and packages of fruit the fact that different localities have different methods of working, not only as to the different styles of the package used, but also as to the manner in which they are packed, must be considered. Winnipeg is the best place in Canada for studying those several methods as well as for offering opportunities for judging the merits in the light of actual results.

It must not be assumed that because the writer does not approve of any particular style or styles of packages, that he is hostile to the trade of the locality from which those packages come, nor is it to be assumed that in all cases the packages so condemned are a failure as a carrying package; or in other words, that the fruit packed in those packages is going to spoil because it is in those packages. What is wanted is a selection of the best as proven by past experience, and then an almost absolute uniformity on the part of the shippers, not only from a locality, but from the whole province.

The advantage of having a uniform package can be illustrated by supposing a merchant in telephone communication with a customer who wants a few boxes of pears. In the event of the order being for Washington Territory, California, Oregon, or British Columbia pears, the merchant has to give only the name of the place, the variety, and the price, and his customer knows at once what he may expect to get. Those places have a package so nearly uniform that there is practically no variation in the quantities contained, and in every case they will be carefully wrapped in paper procured expressly for the purpose. Supposing, however, the deal is being made for a lot of Ontario pears, the amount of explanation required as to the size of the box or crate, the quantity it contains, and the condition they are in, will take up time, and require the most minute description. Indeed he will be a most optimistic dealer who will in any but very exceptional cases, and then only after the most careful examination, guarantee that what he has to offer can be depended upon to turn out satisfactorily in every particular. Want of uniformity in size and in ripeness often causes a lot that might otherwise, with more care and attention to selection, turn out satisfactorily, to be considered an inferior lot. Their value as a first-rate article for the retail merchant to handle is very much lessened.

That the box used by the California packers

presents the best package for the shipment of pears, and peaches, will be admitted by all who have had an opportunity to judge their merits and compare them with those in use in Ontario. Not a little of their superiority consists in the convenience with which cars can be loaded, by putting the boxes on their side across the car, leaving a space of from one and a half to two inches. Strips should be laid on the top of the boxes flush with end and lightly tacked to each box. Have the ends of the strips come out close to the side of the car. The next row can then be placed on the top of the first. They can be piled six or eight tiers high, and only touch each other at the ends. Bring the piles forward to nearly the centre of the car, and then put in a strong stanchion, nailing firmly. The car is then loaded so firmly that the fruit would hardly be displaced if the car was derailed. In refrigerator cars which would be used for this purpose a perfect system of ventilation will thus be secured, and every box will get the benefit of the circulation of fresh cool air, whereas with the numerous and varied collection of packages in use in Ontario this would be impossible.

This is the way I would recommend for shipping all early apples, such as Red Astrachans, Alexander, Wealthy, and indeed, all varieties, either cooking or table apples, up to the time that the fall apples come in, when they can be more profitably shipped in barrels.

Inquiries made among the merchants throughout the country has shown that not a few of them are in favor of boxes for even the earlier fall varieties. As some of them put it, they can sell a box often where the capacity or the facilities of the customer would not allow him to handle a barrel, and when he finishes that one he comes back for another.

In grapes the present style of baskets is probably as good as anything that can be procured, but something ought to be done to compel a strict uniformity of shape and weight. The manner of loading cars with these baskets can, however, easily be improved on. To pile those light, fragile baskets as they often are, 12 to 14 high, with the weight of all the upper ones resting on the lowest tier, is almost certain to result in those beneath being destroyed. I have seen them crushed almost flat. This could be overcome by a light double deck, which would not only carry the weight of the upper half but secure much better ventilation.

Prince Edward Island Notes

Father A. E. Burke, Alberton

THERE has been little trouble this year in finding a local market for all the apples harvested here last fall, and many more. Still, we see by the press that Mr. F. G. Bovyer, of Georgetown, with Senator Ferguson, has made the usual winter shipment of Ben Davis apples to Britain. The prices for prime fruit of the long-keeping sorts on the other side have been all that could be desired.

NO BREAKDOWNS

In striking contrast to last year, this year has lessened the risk to young and closely planted orchards of any breakdowns from snowbanks to a minimum. The ravages of the past season are, however, quite manifest in places, and something should be done to clear away the damaged and diseased portions of orchards this spring. The instructor could not possibly get round to all who requested his services last season; it is to be hoped that at least the necessary knowledge of his methods will be well within the reach of all this year. It is useless to plant trees if they are not kept in such a way

as to be of use and profit to the growers. Besides a badly kept orchard, like badly kept fields, are a severe reflection on the owners, as well as a general source of disedification. Repair the damaged trees of last year or remove them.

DEFINE TWO'S AND THREE'S

Commercial agent at Leeds, Jackson, writes, asking for a properly packed no. 2 apple as an essential to the British trade. "It is just as necessary that the XX (no. 2) apples should be as well graded and packed as XXX (no. 1), and it is from these apples that the farmers of Canada would make their largest profit, because if they are not shipped they are an absolute loss." However much or little we may assent to this latter opinion, there can be no doubt but that the time is ripe for a more complete classification of our apples under the Marks Act.

BRITISH COLUMBIA APPLES

The ex-president of the Fruit Growers' Association of Prince Edward Island, Mr. Edward Bayfield, is sojourning in British Columbia, and

writes us in glowing terms of the fruit of that rich province. "The sooner we of the east disabuse our minds of the idea that British Columbia cannot grow superb apples," he says, "the better; for now that they have taken to their production in the higher areas among the mountains, they are much superior to the product of the low sections. I have eaten Spys out here that were superior in every way to the best Spys of Ontario. The fruit-growing possibilities of the country are immense. It is more than likely that Japan will afford a good market for much of the coast fruit. By Commercial Agent McLean's report we see that they would gladly exchange their oranges for our apples."

The Fruit Trade at Montreal

E. H. Wartman, Montreal

The apple may well be called the king of fruits. Its longevity under proper conditions makes it bring a large revenue to our country. The juices and tender pulp make it a general favorite. At present Montreal has a very short crop of apples stored. Five thousand barrels would be the extreme figure, and of these perhaps 60 per cent. are second quality.

A large number of barrels are marked Talman Sweets. This apple is best known in country homes where it is called the family apple. In the city it is not thought so much of and usually brings a low price, not as much as it should, considering its good keeping qualities and adaptation to various uses.

One apple a day furnished each inhabitant of Montreal and suburbs, would mean 800 barrels; one week at this rate would completely exhaust present store. However, when prices run \$4 to \$5 a barrel for No. 1, the average mechanic gets a small supply. The price is likely to run much higher before the new crop is fit for use in July.

Bananas and oranges, however, are within the reach of the masses. Fifteen years ago this month I paid 50 cents per dozen for bananas, to-day 20 cents would buy the same. This is due to the large production on banana plantations, encouraged by increased consumption. It is not an uncommon thing to get a piece of banana pie, but 20 years ago it was one of the unknown dishes. The month of March, too, generally brings large quantities of maple sugar and syrup. This has a tendency to make dull sale for fruits of all kinds. Although one kind of fruit may run very high in price, yet there is always a substitute to appease the appetite. The export apple trade has not been as remunerative to some Montreal men as could have been wished this year, but they consider it largely their own fault. Men of 20 years' experience have lost money although it was a record year for making money. No. 1 Spy, Baldwin, King, Russet, and Greening have sold throughout the season at 18 to 25 shillings. What better prices could be expected. Buyers should remember that goods well bought are half sold, but it takes some artisans a long time to master the art of packing fruit. This is the secret of success.

Our Nova Scotia Letter

G. H. Vroom

Perhaps in no other province in Canada is there such a diversity in the methods employed in the fruit industry as in Nova Scotia. The fruit houses along the railway are used for storing as well as packing fruit. I believe I am well within the bounds of truth when I say that 80% of the fruit stored in the fruit houses is packed by the grower and bought by the dealer in that condition, and the result is lack of uniformity and a very irregular pack. From the up-to-date grower the dealer gets a first-class pack, but from the grower who packs his fruit according to the ideas that have been handed down from one generation to another by people who do not realize that the world is moving and that the consuming public are demanding a better article, the dealer gets poorly graded fruit.

On the other hand, when the dealer buys the fruit not packed but just as it comes from the tree "and usually at a big price," he thinks he must pack and sell everything and he puts a lot of trash marked No. 3 on the market, and it is having a depressing effect. This applies to the local market in a large measure. One great fault with the Nova Scotia fruit grower is the tendency to dump an inferior article into the local markets. This grade of fruit should never leave the farm but should be given to the stock. It is the exception and not the rule to find first-class fruit in the local markets.

What is the result of all this? It is that other provinces are sending good fruit into a fruit-growing locality, while that locality is sending its fruit to a foreign market. This is not as it should be. The apples in Nova Scotia were only fair at picking time last fall and the mild winter has not been favorable for keeping fruit in storage, and consequently the output at present is rather over ripe, and in some instances subject to black spot. The No. 1, or first grade, has upon inspection been found good and well packed. The No. 2 grade has been found inferior. Perhaps a definition for a No. 2 would be a good thing.

Toronto Growers' Monthly Meeting

Increasing interest is being taken in each successive meeting held by the Toronto vegetable growers. At a special meeting on March 17, over 70 members were present. Celery growing was taken up by Mr. Harris, the celery king, of Humber Bay. Messrs. Thos. Courtice, J. McKay, Joseph Rush and George Syme took part in the discussion that followed. The cultivation of beets was dealt with by Mr. Albert Shuter. Mr. James Stevens, of Todmorden, gave an interesting talk on growing cabbage, and the shortcomings of the present tariff rates.

The membership of the association has been increased until it is now nearing the 200 mark. This necessitated the election of two more members for the executive board of the provincial association. Messrs. John McKay and Albert Shuter were unanimously chosen. The following correspondents were selected to furnish crop reports during the coming season: Messrs. K. Gibbard for the east, Joseph Rush for the west, and Albert Shuter for the north.

At the next meeting on April 7, Mr. H. Reid will discuss glass in its relation to outdoor work; Mr. James Dandridge will take up the growing of early potatoes, and Mr. James Gibbard will deal with early tomato growing.

New Fruit Growers' Association in Southern Ontario

A number of fruit growers of the Winona-Grimsby district met in February and organized an association, to be called the Southern Ontario Fruit Growers' Association. The purpose of the new organization is to promote the best cultural methods and, by united effort, to seek to apply the principles of co-operation in the packing, sale and transportation of their products. A resolution was passed to the effect that "the members of the Southern Ontario Fruit Growers' Association desire to express their appreciation of the work done by the Niagara Peninsula United Fruit Growers' Association, but as they realize the difficulties that the members of that association in this district labor under in attending meetings at such a distance, they consider that an organization in this district, working in co-operation with the one in the east, would be in the interest of fruit growers in general."

The following officers were appointed: Pres., Jonathan Carpenter, Winona; v.-pres., Geo. Awrey, East Hamilton; sec.-treas., E. M. Smith, Winona. It was decided to have as many directors as there shall be sub-organizations having 10 paid members within its boundaries for the first director; for the second director, 30 members; for third director, 60 members;

for the fourth director, 100 members; for the fifth director, 150 members within the sub-organization, and by whom the directors shall be elected.

Meetings have been held at Stoney Creek, Winona, Grimsby, Beamsville and elsewhere, and sub-organizations have been formed at each of the places. Other sections promise to do likewise before long. The Southern Ont. Fruit Growers' Assn. bids fair to become one of the strongest and most useful organizations of its kind in Canada.—(A.B.C.)

The Basket Situation

The Hamilton branch of the Vegetable Growers' Assn. held a meeting Sat., Mar. 10, and another on Sat., Mar. 17, to discuss the basket situation. It appears that all the basket mfrs. have combined for the purpose of advancing and maintaining a fixed price on baskets for the coming season. Prices have been received from most of the mfrs., and they are all the same, namely: 11 qt. fruit baskets with covers, \$42 per M; without cover, \$34; 6½ qt. grape baskets with cover, \$36 per M; without covers, \$28; berry boxes, \$3.50 per M; 24 box crates, \$11 per M; Lena covers, \$10 per M; wood covers, \$6 per M. These prices are considerably in advance of last year's. On 11 qt. baskets there is an advance of \$7 per M, and on 6½ qt. baskets an advance of \$4. This is a very serious matter, when consideration is given to the large number of baskets required by the members through this district. If the crop should be as large this season as it was last, the members will have to pay about \$25,000 more for their baskets.

The growers as yet do not know what to do, but it is expected they will decide to take legal action as against a combine should the manufacturers not lower their prices.

Important Questions Discussed

The newly formed Southern Ontario Fruit Growers' Assn. held an interesting meeting at Grimsby on Mar. 2. Cooperation, quotations by dealers and shippers, transportation facilities, and the telephone service were ably discussed by leading members of the assn.

In introducing the subject Cooperation in Packing, H. L. Roberts, said that 4 to 10 growers should unite and have their fruit packed in a central packing house by competent men. Then it should be sold direct to the trade or to a local dealer. The telephone question was ably handled by W. H. Brand, H. L. Roberts and S. Culp. It was pointed out that another line is needed between Winona and Jordan, and a committee was appointed to interview the Bell Telephone Co. and see if something could not be done to give a better telephone service between Stoney Creek and Jordan Station.

In dealing with the question of quotations on the various fruit crops, J. A. Livingston pointed out that the fruit business is injured every year and the markets demoralized by dealers under-quoting each other. The general opinion of the meeting was that the dealers should arrange to give uniform quotations. A committee was appointed to interview the dealers regarding this proposal. Transportation facilities were dealt with by E. D. Smith, M.P., who showed that the express rates are exorbitant, and the freight service practically useless. He compared the freight service given in Ont. with that in Eng. and showed that Canadian ry. cos. could give the Canadian growers much better service if they tried. The light and weak baskets, that are being supplied by most of the basket manufacturers also were referred to. It was pointed out that many baskets went to pieces during transportation, and he urged the members of the assn. to make arrangements with the basket firms to supply them with better baskets, even though they had to pay a higher price. In reply, it was

claimed by C. W. VanDuzer that the fruit growers themselves were largely to blame for the inferior baskets that were being made. They did not want to pay high prices, and the manufacturers vied with each other in producing cheap baskets.

Experiments in Orchard Culture

A bulletin on Experiments in Orchard Culture has been prepared under the direction of Prof. W. M. Munson, of the Maine Agricultural and Experiment Station. It contains a report of work done on the farm of Mr. Chas. S. Pope, Manchester, Me., and includes a discussion of cultivation and mulching as methods of treatment for orchard lands; stable manure compared with concentrated fertilizers; the Fisher formula, orchard renovation, top-grafting of orchards, and the effect of cultivation upon the keeping quality of apples.

Results in the "renovation orchard" show plainly that with proper care and food there need be no "off year," even with the Baldwins. As might be expected, better results were obtained from the application of a complete fertilizer than from the use of any one or two of its separate components. The severe winter of 1904-5 injured many trees, but where good cultivation and feeding are practised the trees are rapidly recovering.

About 20 Ben Davis trees which were top-grafted two years ago to Baldwin, Sutton, Jonathan and Spitzenburg, have all made a remarkably strong growth and in some cases fruit buds are developing, but conclusions are not drawn from this work as yet.

Results of the keeping test indicate that while the color of the fruit from sod-grown trees is unquestionably better than that from cultivated trees, there is very little difference in the actual keeping quality of such fruit.

Bulletin 122, giving full details of the work in question, will be sent free upon application to the Maine Agricultural Experiment Station. In writing, please mention this paper.

Presents for Our Readers

Our readers will be given their choice of the following premiums, when purchasing goods from our advertisers, if they will tell them that they saw their advertisement in THE CANADIAN HORTICULTURIST: 3 months renewal subscription to THE HORTICULTURIST; 1 Baby Rambler Rose; 1 Herbert Raspberry; 1 Boston Ivy; Book on Strawberry Culture; Collection of 6 Tuberous Begonias; Sweet-scented Calla Bulb; New Grape Vine; New Fern Nephrolepis Piersoni; Large Size Package "Helen Pierce" Sweet Pea, new; New Dahlia "Mrs. Roosevelt," new; Book on Bulbs and Bulbous Plants; Book on Fertilizers; Book on Injurious Insects, Plant Diseases and their Remedies; Book on Onion Culture; Book on Tomato Culture; Book, Your Plants, House and Garden; Hydrangea paniculata grandiflora; Collection of 3 Canna bulbs; Collection of 6 Garden Vegetable Seeds; Collection of 6 Garden Flower Seeds; Collection of 6 Gladioli Bulbs. To the reader purchasing goods to the greatest value from our advertisers in the April issue, we will give a \$5 cash prize. It is no trouble to win a prize. Just tell the advertiser when writing, that you saw their advertisement in THE HORTICULTURIST, and then make application at once to THE CANADIAN HORTICULTURIST for a premium. Write the Advertising Manager, THE CANADIAN HORTICULTURIST, 507-508 Manning Chambers, Toronto, Ont.

I would canvass for THE HORTICULTURIST for two reasons. First, because I believe it to be the best magazine on horticulture I have yet seen, and secondly because it is Canadian, "made in Canada," a text for which I always have a sermon.—(D. C. Crosby, Berwick, N.S.)

The Dominion Fruit Conference

(Continued from page 82)

Mr. Chaplin, who represented firms in Great Britain interested in the auction sales system, stated it is impossible for British buyers to buy from Canadian dealers all XXX apples, as the Canadian dealers use their XXX apples to sell their inferior grades. When British dealers know that they can get all the XXX apples they want, they will be willing to buy f.o.b. but not until then. This ended the discussion at this point, Mr. Peart's resolution being referred to the resolution committee, and afterwards reported and adopted as here published.

THE FRUIT MARKS ACT

The liveliest discussions of the conference took place in regard to the proposed amendments of the Fruit Marks Act.

A resolution was submitted by the resolutions committee, favoring clause 4 in the Fruit Marks Act, being so amended as to require the markings on the packages to be made in letters of not less than a 1/2-inch in length. The resolution, which read as follows, was adopted:

"Every person who by himself, or through the agency of another person, packs fruit in a closed package intended for sale, shall cause the package to be marked in a plain and indelible manner, in letters not less than 1/2 an inch in length, before it is taken from the premises where it is packed, etc."

The committee also reported in favor of clause C of the Fruit Marks Act being struck out and the following words substituted: "With a designation of the grade of fruit which shall include one of the following four marks: 'Fancy,' 'No. 1,' 'No. 2,' 'No. 3.'" The effect of this would be to do away with the X, XX, and XXX marking that is now commonly used. Mr. Brodie stated that growers frequently marked their apples XX only to have the dealers mark an additional X on the barrel, after they buy it, without taking the growers' name off the barrel. This leaves the grower open to prosecution for fraudulent marking.

Mr. Fisher asked if the shippers would be likely to object to the use of only one grade mark, or if such a change would be likely to affect conditions on the markets to which the apples are shipped. Mr. Graham replied that the trade would quickly learn the change and no ill effects should follow. Mr. Parker said that Nova Scotia growers are strongly in favor of such a change.

Mr. Fisher explained that when the Act was passed there were a considerable number of people in the habit of using the X marks, and they objected to the use of only one set of marks. It was claimed by Mr. Burrell that growers and dealers in the United States have run the X marks to death, until they mean but little. He thought the time had come when Canadian XX 1, 2, 3's should mean more than any XX marks that can be used.

Mr. Manson reported from Manitoba and Mr. Starr from Nova Scotia that the 1, 2, 3 marks have been used in their provinces for years with great satisfaction. The proposed change was adopted unanimously.

THE "FANCY" GRADE

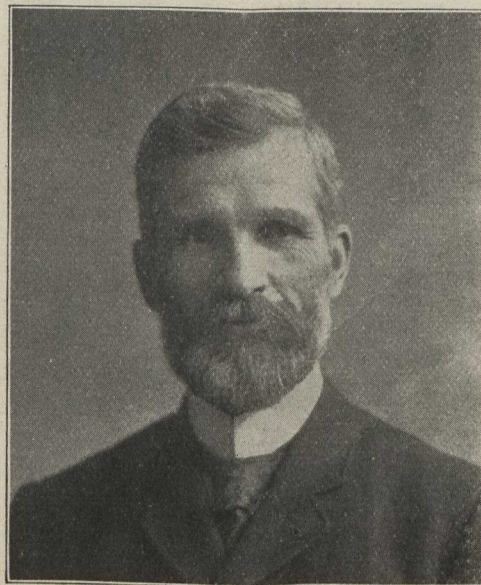
Another resolution reported by the resolutions committee recommended that section 61 of the Fruit Marks Act, which describes XXX fruit, be amended as follows: "No persons shall sell, or offer, expose, or have in his possession for sale, any fruit packed in a closed package, upon which package is marked any designation which represents such fruit as of fancy quality unless such fruit consists of well-grown specimens of one variety, sound, of uniform size, and of good color, for the variety, and of normal shape.

This brought on a lively discussion, in opening which Mr. Burrell said that in British Columbia the growers feel strongly that either the XXX

grade should be made to consist of nearly perfect fruit, or there should be a new class created to include such apples. Ontario growers seem afraid that were this done it would relegate practically all their XXX apples to the XX grade. While this might be the case in Ontario, it was not so in British Columbia where they can produce a much larger proportion of perfect fruit.

FANCY GRADE

Mr. Robert Hamilton, of the Department of Agriculture, reported that for years he had noticed packages of apples that contained fancy apples that had been packed in a lower grade of fruit. Mr. Eaton said that the Nova Scotia delegation was unanimously in favor of the establishment of a grade that would be above the usual XXX grade. They would favor calling it No. 1 extra, rather than fancy. Mr. Graham was willing to favor a fancy grade if the apples were to be of a larger size than the usual XXX. He was afraid that as there is not enough apples now, were fancy apples to be placed in a grade by themselves,



A. McNeill, Ottawa

Chief of the Fruit Division, whose hard work had much to do with the success of the Fruit Conference

there would not be enough good apples left to make a strong XXX grade.

Mr. Burrell: "In British Columbia we can put up thousands of barrels of what you call XXX apples, with this exception, that they are practically perfect. This being the case we feel that it is only right that we should have a grade for such apples, that we may be able to sell them for what they are worth."

Mr. Fisher: "As I read the resolution, it means that 'fancy' must consist of practically perfect fruit, while the definition of XXX fruit requires that only 90 per cent. shall be perfect."

Mr. Grant: "In the Western States, the fruit growers are the most progressive and enterprising in the world, and they force our growers in British Columbia to stay awake nights to study how best to compete with them. We may not be able to beat them, but we are able to hold them. We find we must try to reach perfection. We have thousands of boxes of perfect fruit, and we feel that we should get credit for such fruit, and that there should be a grade for it."

Mr. Eaton: "In Nova Scotia we have been in the habit of packing an extra grade of fruit

and of calling it No. 1 extra. Our best fruit has been picked out and used in this grade."

Mr. Parker: "As I understand the matter, the British Columbia growers make two sizes of their No. 1 as we do in the east. Mr. Boies, the expert from British Columbia who visited Nova Scotia last fall, graded the apples according to color and size. We have never gone into it as thoroughly as that, but believe we must if we are to keep up with the rest."

Mr. Smith agreed with Mr. Graham that the question of size should be considered, and that fancy apples should be above the normal in size.

Mr. Ross: "We Ontario growers appreciate the ability of our British Columbia friends and their desire to put up a fancy article, but if such a grade is accepted they will practically have a corner on it. (Cries of "No! No!") They have thrown down the gauntlet to us and we are inclined to accept the challenge. (Applause). But if the definition of fancy as contained in the resolution is adopted, it will be a great hardship if a grower is fined because there may be a single apple in the box or barrel that is not fancy. It is practically impossible to pack a box of perfect fruit, where growers are troubled with apple scab and codling moth, as they are in Ontario. If I am correctly informed, British Columbia growers are not entirely free from these troubles, and there is no telling how soon their difficulties in this regard will be greatly increased."

Mr. Burrell: "We from British Columbia appreciate the remarks of Mr. Ross, but we feel that it would be dangerous to start to lower the grade." (Applause).

Mr. Fisher: "It strikes me it would not be wise to put such fancy apples in barrels and that they should be packed only in boxes." (Applause).

Mr. Graham: "Mr. Fisher's suggestion is an excellent one. I feel that our No. 1 is going to be our commercial apple, and that if we try to put up fancy apples in barrels they will conflict with our No. 1, but if they are put up in boxes it will be all right."

Mr. E. D. Smith: "Were all the fancy apples to be packed in boxes, it would be a great hardship on the big shippers, as they would be forced to send boxes to every orchard they picked, as well as barrels, which would greatly increase the labor and expense."

It was pointed out by Mr. Sherrington that the system of having buyers send gangs to the orchards is one that should be discouraged, as all apples should be packed in central warehouses, so that a uniform grade can be secured. He was in favor of having fancy apples packed only in boxes, so as to prevent confusion in the minds of packers, many of whom, even yet, do not know what constitutes a No. 1 grade. He favored the abolition of the auction sales system.

Mr. Fisher: "There is no definition of the different grades, except No. 1. If we adopt a fancy grade we will have to define it."

Mr. Bunting agreed with Mr. Fisher's suggestion regarding packing fancy fruit in boxes. He believed the time is coming when the bulk of the fruit of Ontario will be handled on the co-operative principle. While admiring the enterprise of the British Columbia growers, he doubted their ability to put up such a large proportion of perfect fruit. He believed Mr. Ross voiced the feeling of the Ontario growers, when he sounded a warning in regard to the difficulty of packing nothing but perfect specimens. While attending various exhibitions, such as the Pan-American, and the New York State Exhibition, he had carefully examined the fruit exhibited, and although it was supposed to be the best fruits the various States and Provinces could produce, he did not have much difficulty in finding numerous specimens

that would have disqualified such fruits from being considered as fancy. What is needed, he thought, is a grade that will be practical, and not one that will bar out the producers of Ontario and Quebec from attempting to put on the market any considerable proportion of fancy fruit. He felt there should be some elasticity in the definition of fancy, and submitted the following amendment:

"No person shall sell, offer, expose, or have in his possession for sale any fruit packed in a closed package upon which package is marked any designation which represents such fruit as of fancy quality unless such fruit consist of well-grown specimens of one variety, sound, of uniformly large size and good color for the variety, of normal shape, and not less than 95 per cent. free from scab, wormholes, bruises and other defects, and properly packed."

Messrs. Brodie and Jack, from Quebec, agreed as to the difficulty of furnishing nothing but perfect fruit. Mr. Fisher also referred to how nearly impossible it is to obtain fruit that is free from blemishes, and referred to the difficulty his Department has experienced in gathering such fruit for foreign exhibitions. He claimed, amidst laughter, that the same difficulty had been found even in British Columbia. He suggested that the definition of fancy grade be very strict, but that some very slight latitude be allowed in a general clause of the Act, that would relate to the application of the Act as regards the definition of fancy.

Mr. Burrell: "The growers in British Columbia are in accord with Mr. Fisher's suggestion. We do not think that we have reached perfection, but we feel that if No. 1 is to have 10 per cent. of defective apples, it will not do to have anything less than perfect for fancy."

Mr. Graham suggested that the words "in boxes" should be added to Mr. Bunting's amendment. Mr. Jones objected to this suggestion and Mr. Brodie asked why he should be prevented from packing fancy apples in barrels if his customers wanted them packed that way. Mr. Hunt claimed such an addition would be a hardship on the growers in provinces where boxes are dear. Mr. Smith said he was strongly opposed to any clause that would enforce growers to pack their fancy fruit in boxes. Mr. McNeill said he had never seen a fancy apple go into a barrel and come out such, and were the inspectors to examine a barrel in which fancy apples are packed, they would have to condemn them, were they to find injured apples. Mr. Bunting consented to adding the words "in boxes" to his amendment, which was done. This ended the discussion Tuesday afternoon on this subject.

On Wednesday morning, when the discussion was resumed, Mr. Bunting stated that as it was of the utmost importance that the greatest harmony should prevail, he felt disposed to withdraw his amendment. He was strongly of the opinion that there should be a saving clause somewhere, and he thought that Mr. Fisher's suggestion that this might be included in a clause relating to the enforcement of the Act would be sufficient. He favored fancy fruit being packed in boxes, and claimed that as the trade is likely to move in this direction, it would not be a hardship. He then withdrew his amendment and the original resolution as presented by the resolutions committee was finally adopted with a slight amendment, so that it reads, "that fancy fruit shall consist of well-grown specimens of one variety, sound, of at least normal and uniform size and of good color for the variety, and of normal shape and properly packed."

NO. 1 APPLES

Another clause in the report of the resolutions committee recommended that a sub-section A shall be added to section 6 of the Fruits Marks Act, as follows: "No person shall sell, or offer, expose or have in his possession for sale, any fruit packed in a closed package upon which package is marked any designation which represents such fruit as of No. 1 quality, unless such fruit consist of well-grown specimens of

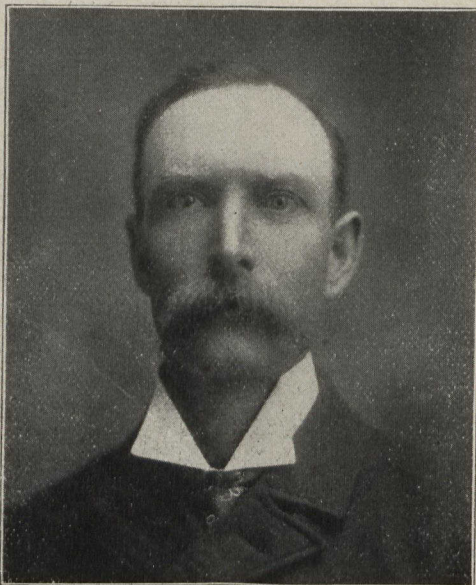
one variety, sound, of not less than medium size and of good color for the variety, of normal shape and not less than ninety per cent. free from scab, worm-holes, bruises and other defects, and properly packed."

This was adopted practically without discussion. This is practically the same definition as has prevailed.

NO. 2 APPLES

A lively discussion took place over the definition of the No. 2 apple, as submitted by the resolutions committee and which read as follows: That a sub-section B be added to section 6, as follows: "No person shall sell, or offer, or have in his possession for sale, any fruit packed in a closed package upon which package is marked any designation which represents such fruit as of No. 2 quality, unless such fruit consist of specimens of medium size for the variety, free from worm-holes, except at the blossom end, and free from such other defects as cause material waste, and properly packed."

Mr. Lick pointed out that if any other words besides fancy, No. 1, No. 2, and No. 3, can be placed on packages, it might cause confusion.



Harold Jones, Maitland, Ont.

One of the Delegates to the Fruit Conference

Mr. Burrell replied that the committee had considered this point and had concluded that these grades would soon establish a position of their own. Were too many definitions placed in the Act, such restrictions would come dangerously near conflicting with private brands.

Mr. Fisher: "It is an important question that has been raised by Mr. Lick. The reason the clause in the Act allowing other marks to be put on boxes was inserted was because many growers have private brands for which they have created a demand. It would be a great hardship to them were they prevented from using these brands." Mr. Lick contended that it was more important that the interests of the majority of growers be protected than the interests of a few. Mr. Fisher pointed out that there is a clause in the Act stating that any marks placed on the packages must not be inconsistent with the standard mark, and that were this clause withdrawn, it would leave the door open for the insertion of private marks on the packages that would not be consistent with the grade of the fruit. Mr. Shepherd said he did not suppose there would be any objection to growers marking the names of their orchards on the packages, and was informed there would not be.

In discussing the definition of a No. 2 apple as submitted to the meeting, Mr. Fisher pointed out that there is a limit of 10 per cent. of defective fruit in the No. 1 grade, but no such limit was

set in the definition of a No. 2. Mr. Graham claimed that the definition of a No. 2 apple required such apples to be of nearly as good quality as No. 1, and suggested that the limit of defective fruit in the No. 2 grade should be defined and that No. 3 apples should not be exported.

It was contended by Mr. Brodie, that if No. 3 apples could not be exported, it might be a hardship on poor people who cannot afford to buy the best fruit. In reply, Mr. Graham suggested that No. 3 apples might be shipped in some other kind of a package. The man who buys a poor apple once is not likely to buy any the next time and the trade is injured. Mr. Eaton thought that if No. 3 grade is ignored, it would be sufficient, as growers who desired could put their apples on the market as culls.

Mr. Manson: "In the past, we in Manitoba have been buying and paying No. 1 prices for cull apples. We are anxious that the definition of a No. 2 shall be made more definite. Under the definition we are considering, it will be possible for every apple to contain a worm. I move that not more than 20 per cent. shall be defective, and that even the defective fruit shall be well colored and of good quality."

Mr. Parker: "No. 1 and No. 2 grades are likely to be the standards for Nova Scotia for many years to come and I think it is well that a more definite standard should be set for No. 2."

Mr. E. D. Smith: "I agree that there should be a definition. As No. 1 and No. 2 apples have to be of uniform size, possibly a slightly smaller size, if perfect in other respects, might be allowed. The words 'permitting worm-holes,' in the definition are too comprehensive. I think that the clause that permits some defect from fungous diseases, while not permitting material waste, covers the question about as well as possible."

Mr. Parker: "We should keep up our ideal. Scab develops after the apples are packed and causes trouble. One trouble is that apples may be O.K. when packed, and become defective afterwards."

Mr. Manson: "When apples get to Winnipeg there is nothing small about the spot they contain."

The representative from Alberta claimed that the western buyers are not likely to buy apples that have any more than 20 per cent. of defective fruit. He claimed that some western dealers repack Ontario apples in British Columbia boxes. A general discussion followed, in which the fruit inspectors took part, after which Mr. Pettit moved an amendment to the definition of the No. 2 apple. It was adopted, practically unanimously, and makes the definition of a No. 2 apple read as follows:

"No. 2 shall consist of specimens of nearly medium size for the variety, and not less than 80 per cent. free from worm-holes, and free from such other defects that cause material waste, and properly packed."

ADULTERATION OF FOOD PRODUCTS

Following the discussion of the Fruit Marks Act, Tuesday afternoon, Mr. McGill, of the Inland Revenue Department, spoke of the adulteration of food products. He pointed out that the best known adulterants have come into use during the past 50 years, which accounts for the great increase that has taken place in the adulteration of food. He claimed that as man's recuperative power is limited, it is essential that his food shall be wholesome. Every man has the right to know what he is eating, and when food products are put up in packages, the packages should bear statements giving a printed analysis of their contents.

Reference was made to the various adulterants commonly used in the manufacture of jams and jellies, including glucose, and attention was drawn to the results of an investigation conducted by the Dept. during 1904-5, to find to what extent jams and jellies are adulterated. In 1904, 74 samples of jam and jelly were tested,

including 59 of jam and 15 of jelly. Glucose was found in 49 samples of jam and 6 of jelly; preservatives in 22 of jam and 5 of jelly, and dyes in 34 of jam and 4 of jelly. In 1905, out of 55 samples tested, 12 were genuine, 43 contained glucose, 11 preservatives, and 18 dyes.

Mr. McGill claimed that adulterants are not being used as extensively as formerly and pointed out that whereas glucose was used in 74 per cent. of the samples tested in 1904, they were used in only 66 per cent. in 1905. In 1904 the percentage of preservatives used was 36, and in 1905 only 15 per cent. The percentage of dyes used in 1904 was 51 per cent., and in 1905 30 per cent. The results of these investigations are contained in Bulletins 96 and 104. It was stated that jams and jellies are successfully made without preservatives. Where they are not used it is a guarantee that nothing but fresh fruits have been used.

A general discussion took place in which the view was freely expressed, that if nothing but pure fruits are used in the manufacture of jams and jellies it will increase their consumption and benefit the fruit industry.

Mr. McGill said that there is not a preservative known that will not injure the digestion in proportion to the quantity of it that is used. This ended the discussion, but on the following day the resolutions committee submitted the following resolution which was adopted:

"Resolved, that whereas a large percentage of the jams and jellies labelled 'Genuine' or 'Pure' that are offered for sale within the Dominion are adulterated;

"Whereas the low prices quoted on these articles secure for them a ready sale, to the disadvantage of the pure article;

"Whereas the interests of the manufacturers of pure goods, the fruit growers, and consumers are thereby impaired;

"Therefore, be it resolved, that this conference urgently requests the Federal Government to secure the immediate enforcement of the 'Pure Foods Act,' and that the Act be so amended as to compel the manufacturers of jams and jellies to print their formulas on their labels."

TUESDAY EVENING'S SESSION.

A public meeting was held Tuesday evening, at which the principal speakers were Hon. Sydney Fisher, who traced the work that has been done by the Dominion Experimental Farms, and what led up to the introduction and adoption of the Fruit Marks Act; Sir Frederick Borden, who dealt mainly with fruit conditions in his Province, Nova Scotia, where he has an orchard of 8,000 trees, and by Prof. Jas. W. Robertson, formerly Dominion Commissioner of Agriculture. All three speakers gave highly interesting addresses of a general nature.

EXHIBITS OF FRUIT ABROAD

The making of exhibits of fruit at foreign exhibitions was taken up at the Wednesday morning session, when the resolutions committee submitted the following resolution, which was finally adopted:

"Resolved, that the thanks of this conference be tendered to the Minister of Agriculture for aid received from his Department in past years in advertising our products in the United States and abroad, through displays at the various exhibitions that have been held from time to time. We would solicit further aid in continuance of this work, and would suggest that exhibits representing all of the provinces of the Dominion be held at the fall show of the Royal Horticultural Society, England, in 1906, and also at any other shows that may be held in the future, and that are considered of sufficient importance by the Minister of Agriculture.

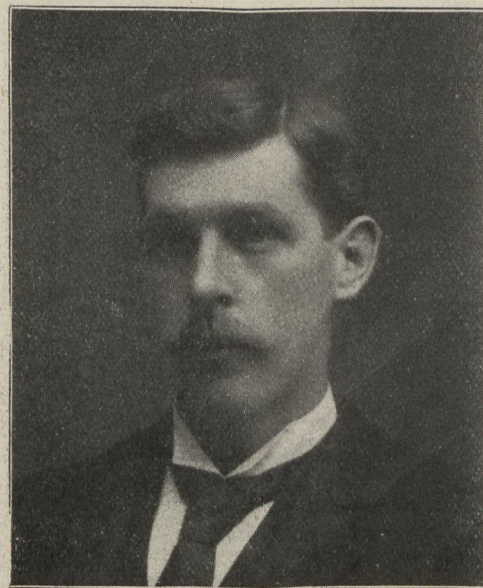
"We would suggest in this connection, that in future the fruit for exhibition purposes, particularly apples, be gathered in the orchards during the picking season, properly wrapped, packed and placed in cold storage, instead of

making selections during the winter months from stock in storage:

"And further, that part of each display be exhibited in the packages generally used in carrying such products to the markets."

In the discussion of the resolution, Mr. Ross suggested that all exhibits be distinctly Canadian and shown as such. Mr. Fisher replied that this has always been done as it has been found that it causes confusion in the minds of sightseers when they see exhibits from different parts of Canada competing one against the other. They do not seem to realize that the fruit from each province is all a part of the Dominion exhibit.

Mr. Palmer: "Our British Columbia growers were very successful with their exhibit at the Royal Show in England. The fruit was picked in the orchards of our best growers. The shipment was made in the usual way and upon its arrival in England it had to be stored for 3 or 4 weeks. It was found that, in order to make the best show possible, it was necessary to display the fruit both on plates and in packages. As we grow different kinds of fruit in the different provinces of Canada, it seems necessary



N. E. Jack, Chateauguy Basin, Que.
One of the Delegates to the Fruit Conference

that, if each section is to receive proper credit for its exhibits, they must be put up in such a way that sightseers will be able to distinguish what part of Canada they are from. Our growers do not fear competition from other parts of Canada, but we do fear that from the Western States, and we would like to have the people who see the exhibits know that we can grow as good fruit in British Columbia as they can in the Western States."

Father Burke: "How long should the fruit be picked before these exhibitions?"

Mr. Fisher: "About a month."

Mr. Fisher explained that the reason the fruit for these exhibitions has not been gathered in the orchards in the past, has been because it was not decided to make the exhibits until after the fruit had been picked. This made it necessary for the department to gather the exhibits the best way it could. He promised that attention would be paid to this point in future.

EXPERIMENT STATION WORK

The work being done by the Depts. of Agri., in the different provinces to encourage fruit production was dealt with at considerable length at the Wed. afternoon session. The subject was introduced by Mr. Linus Woolverton, of Grimsby, the Sec'y of the Ontario Fruit Expt. Stations. Mr. Woolverton stated that whereas

Ont. had only 4 expt. stations in 1894, the number had increased to 13 in 1904. The expenditure connected with these stations amounts to about \$3,600 a year. The results of the experiments at these stations show what varieties of fruit are best adapted for each part of the province, both for commercial and domestic purposes. The experimenters have formulated black lists for various districts to prevent planters from loss caused by the use of unsuitable varieties. The purchase of a central experimental fruit farm has been proposed where all new varieties can be tested. The speaker suggested the collation of information gained by the various provinces upon nomenclature of fruits which ought to be uniform for all parts of Canada. Apples essentially the same had different names in different provinces. Also as to identification of varieties, fruit growers would be glad of a central office to which they might appeal.

The work in N.S. was dealt with by Prof. F. C. Sears. Twenty-eight model orchards have been established, the stock for which is furnished by the Govt. The farmers who look after these orchards furnish 2 acres of land and agree to manage the orchards under the direction of the Dept. for 10 years. The idea has been to introduce new methods rather than new varieties, although each experimenter is given one or two new varieties to experiment with. At Wolfville, there is a plot of several acres that is devoted to experimental work. The work on the whole has been very successful.

Much the same work has been done in N.B., an account of which was given by Mr. Peters, the deputy minister of agri. The experiment stations are visited once or twice a year, that the Dept. may know that its directions are being carried out. In each model orchard, 10 varieties are tested. As a result of the work, one or two varieties that were tried at first have been discarded, including Ben Davis and Rhode Island Greening. The first suffered severely from the cold winters. The varieties that are giving the best results are the Fameuse, McIntosh, Duchess, Wealthy, Milwaukee, Baxter, North Star, Canada Baldwin, Wolf River, and Alexander. The results have been fairly satisfactory. A statement is published each year showing the number of trees set in each section and how they have succeeded. In sections where farmers said it was impossible to raise fruit successfully, these farmers having tried to raise fruit and failed, principally because they did not use the proper methods, these orchards have shown that fruit can be raised. This is likely to lead to a great increase in the amount of fruit produced in the province.

A statement of the work done in P.E.I. was made by Mr. J. C. Ready, sec'y of agri., who stated that in 1902, an experimental fruit orchard had been established which comprised 7½ acres. In the same year, 5 experiment stations were established in different sections of the province, which number has since been increased to 9. The original intention had been to give instruction in the orchards each year, but this has not been done. This year some varieties of apples from Minnesota are being tried, to see if they will suit the Island conditions.

For Quebec, a report was presented by Mr. J. C. Chapais, of St. Denis, who stated that experiments in fruit growing have been conducted during the past 10 years only. There are some 10 experiment stations which are doing splendid work in his section, where they used to think fruit could not be grown; they are raising 49 varieties of apples, 27 of plums and 12 of cherries. Each station receives \$100 from the Dept. of Agri., and a report of its experiments is published by the Dept.

The following resolution was submitted and adopted unanimously: "Resolved, that it would be in the best interests of the fruit growers of the Dominion that the horticulturist of the Central Experimental Farm, or other competent officer, should be authorized to collect information on fruit topics, from the work of the vari-

ous provinces, whether done by the provincial fruit stations or otherwise; to advise with provincial organizations regarding such subjects as nomenclature of fruits; identification of varieties; origination and distribution of new varieties; history of varieties; and to publish a digest every year, giving number and title of the provincial reports in which details may be found."

COOPERATIVE WORK

An interesting account of the cooperative experimental work being done in Ont. was given by Prof. H. L. Hutt, of Guelph, who claimed that no matter how many experimental farms may be established, they cannot begin to cover the field. Even fruit experiment stations cannot fill the bill. By the experimental union in Ont., they have been trying to get growers all through the province to conduct experiments on their farms. There are now 2,000 experimenters growing apples. The Legislature has increased the grant and the work is likely to be extended.

Mr. Peart suggested that the varieties of fruit recommended by committees from each province should be sent to the secretary of the conference for publication in the report of the conference.

Mr. Glendenning warned the delegates that the northern part of Alberta will be heard from in the course of a few years as a fruit producing centre. The following resolution was then introduced and carried:

"That whereas there are many questions confronting the fruit growers to-day which need investigation and experimentation, and

"Whereas the fruit growers, as a rule, have not the time nor the means for such investigation; and

"Whereas many investigations, while of great value locally, are of little or no benefit to other sections of the Dominion owing to the differences of local conditions; and

"Whereas, this is not true of live stock and dairy investigation in which results are, to a great extent, applicable, not only to the section where they are carried on, but to all parts of the Dominion;

"Therefore, be it resolved that we respectfully petition the Honorable the Minister of Agriculture, that new sub-stations be established in the various provinces of the Dominion wherever local conditions and the importance of the fruit interests may warrant it, for experiments in pruning, spraying, irrigating, fertilizing, studying orchard pests, testing new varieties and investigating the many new questions that are constantly confronting the fruit grower."

THE TRANSPORTATION QUESTION

Much interest was manifested in the consideration of the transportation question, in connection with which the following resolutions were submitted:

"That the Railway Commission be requested to order:

"(a) That a time limit for the transportation of perishable fruits of not less than 12 miles per hour be put in force upon the railways of Canada, which time limit, if not maintained, shall place the onus of responsibility upon the carrying company if loss or damage is sustained thereby.

"(b) That when the railway companies fail to furnish suitable equipment for the transportation of fruit within 6 days after the time an order is placed with the local agent, a penalty be provided for each subsequent day's delay.

"(c) That icing stations be established at divisional points on railways engaged in the transportation of fruit and that cars fully iced be furnished when requested by the shipper.

"(d) That at stations where fruit is customarily loaded in car lots, shelter from sun and rain shall be provided;

"(e) That when requested shippers of perishable fruit shall be furnished by the local agent, with a daily report of the location of a car of fruit while in transit.

"(f) That a rate for transportation of apples be put in force that shall correspond with the present rate for flour—until such time as the railway companies furnish satisfactory equipment and service."

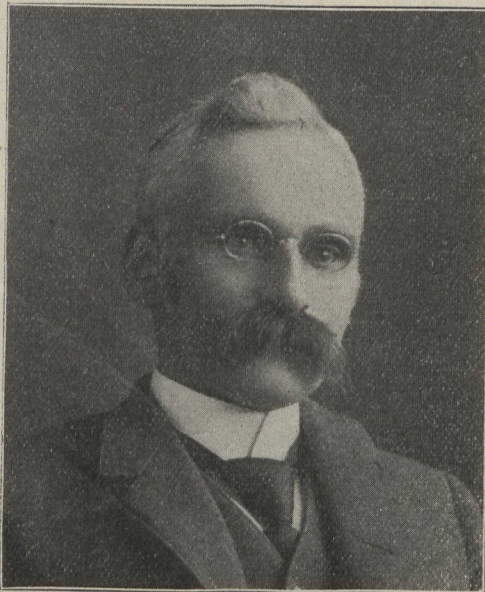
EXPRESS COMPANIES

"Resolved that the Dominion Government be memorialized to enact such legislation as will result in placing the express companies operating in this country under the control of the Railway Commission.

"That we desire to recognize the value and importance of the assistance rendered by the Dominion Dept. of Agri. in improving the conditions prevailing both with reference to the home and foreign trade, and would request a continuation of these efforts as far as possible.

"That copies of these resolutions be forwarded to the Dominion Govt., the Railway Commission, and the various railway and express companies interested."

The discussion of the first resolution was introduced by Mr. W. H. Bunting, who referred to the necessity for fruit growers being given proper transportation facilities for their fruit,



Elmer Lick, Oshawa, Ont.

One of the Delegates to the Fruit Conference

and who claimed that while the railways have been very unjust in some cases, he had always found them willing to remedy matters when they were approached in the right manner. He claimed that when a grower loads poor fruit he cannot expect the railway companies to land it at its destination in a better condition than when it was loaded. At the same time growers feel that there should be some safeguards surrounding the shipment of their fruit. The need for this is shown by the experiences of the growers in the U.S., many of whom have been held up at the mercy of the railway companies. He claimed that there was nothing in the resolutions that had not been embodied already in some form or other, in previous requests made to the government and to the railways. He claimed that the granting of these requests is of vital importance to the fruit industry. Efforts are being made to improve the methods of handling fruit, to secure new varieties, and to obtain better packages. These will all go for naught, if satisfactory transportation facilities are not provided.

Mr. Graham said that the members of the International Apple Shippers' Ass'n have ascertained through careful investigation that the 12 mile limit of speed asked for is not unreasonable, and that it can be easily maintained. Railway companies often sidetrack

fruit, and thus the time for its shipment is much longer than has been the case with shipments that have been sent over the lines for experimental purposes. Many shipments of fruit, owing to unnecessary delay, reach the markets in a ruined condition and the shippers have no recourse against the companies. It also has been the experience of many shippers that large quantities of apples have been ruined by being exposed to the sun and rain at side stations, where suitable accommodation for them has not been provided. Hundreds of thousands of barrels of fruit have reached Great Britain in a damaged condition on this account.

Mr. Graham did not think that the time limit of six days required for the furnishing of cars was unreasonable. Last year the Ont. shippers often had to wait 2 and 3 times that length of time before they were able to secure the necessary cars. The result was that large quantities of apples were destroyed. Where shippers do not load cars or unload them, within 48 hours, they are charged so much a day by the railways, and it is only fair that the shippers should be able to apply the same principle to the companies. A number of railways are not equipped with icing stations. Several pass through sections where apples are shipped in car lots. The case of the Central Ont. Ry. was referred to. Not only should they have these stations in the fruit centres, but also at divisional points. It was claimed that more than half of the stations where apples are loaded in car lots, are without provisions for the protection of the fruit from rain and sun.

The making of daily reports by the companies as to the location of cars in transit was said to be something the growers have been asking for for years. On California lines, shippers and consignees both are furnished with these reports. Apple shippers receive less protection from the railways than the shippers of flour, as when flour is injured in transit, the shippers are able to present claims for damages. Apple shippers are unable to do this, although apples are much more perishable. This being the case, Mr. Graham did not think the rates charged on apples should exceed the rates charged on flour.

Mr. W. L. Smith, of Toronto, advocated the appointment of a committee to wait on the Dominion Railway Commission to urge these matters. He hoped that legislation will be secured at the present session of Parliament that will place the express companies under the control of the commission.

These addresses were heartily applauded, and a committee composed of Messrs. Bunting, Palmer, Graham, W. L. Smith, McKenzie, and Rev. Father Burke was appointed to wait on the railway commission to urge these requests.

Another committee composed of Messrs. Johnson, Shepherd, Eaton, Armstrong, Burrell and Rev. Father Burke was appointed to wait on the Government at the close of the conference to ask for the desired legislation regarding the express companies.

SALES ON COMMISSION

One of the most important discussions took place at a special session that was held Wednesday evening, when sales of fruit by commission was discussed. It was started by the introduction of the following resolution:

"That in the opinion of this convention any person soliciting or receiving consignments of fruit to be sold on commission, should be compelled to take out a license and furnish a bond satisfactory to the government, which license shall be liable to cancellation if at any time he neglects to make returns within 10 days after the date of sale, with a detailed statement showing the price, date of sale, and to whom sold."

Mr. M. Pettit said that an experience of 30 years had convinced him that there are dishonest dealers as well as dishonest growers, and that the growers frequently are defrauded of their just returns.

Mr. G. W. Hunt, who conducts a commission business in both Ottawa and Winnipeg, was called on and said that he was in sympathy with many features of the resolution. There are, he claimed, mushroom dealers, who do a great deal of damage to both growers and dealers. If licensing the dealers will control these men, the rest of the dealers will be much pleased. He could see no injustice to the dealers in their being expected to show their books. He was not acquainted with the methods of selling fruit in England, but believed that the dealers in Gt. Britain are a close cooperation, and that they frequently stack their goods. By stacking he meant making piles of fruit and placing the good fruit in the centre with the bad packages of fruit on the outside, and listing the whole pile as defective fruit. The men who do this give favorite buyers the tip, and they are able to buy in the whole lot at low prices. Such methods, he claimed, are impossible in Canada.

He was in favor of cooperative selling, and claimed that if every barrel of fruit was properly packed and consigned, it would sell for more than were it sold F.O.B. Were it possible to get the transportation that was asked for, goods might be consigned and sold for better prices by auction than F.O.B. The trouble with Ont. fruit is that it is not packed in uniform packages. He did not see any objection for a 10 day limit for report of a sale, as any honest dealer could give it, and it would get rid of the mushroom dealers."

Mr. Graham asked if the resolution was intended to include commission houses abroad, and was informed by Mr. Pettit that it was not. Mr. Brodie and Mr. Hunt said they would oppose it otherwise, as it was not fair that dealers from other countries should be allowed to compete on unequal terms with Canadian dealers.

They also should be required to give a guarantee, and they would be willing to do it, were they honest.

Hon. Mr. Fisher said he thought it was properly a provincial matter. Mr. Armstrong, of Alberta, favored the resolution, and thought copies should be sent the Provincial Govts. One speaker was afraid that the giving of a bond would not work out in the way it was hoped. A dishonest dealer would give a small bond, and would show it to growers as a proof that he was honest. In this way he would buy goods to a much greater value than the amount of his bond, and then skip out. It was finally decided to refer the resolution back to the resolutions committee. This was done, and the following day the following compromise resolution was submitted and adopted:

"Resolved, That in the opinion of this conference the question of controlling commission dealers should be left to the Provincial Govts., and it respectfully urges upon such Governments the necessity of placing such safeguards on the commission business as will protect the legitimate interests of those consigning fruit to the commission market."

OCEAN SHIPMENTS

Conditions surrounding the shipment of fruit to Gt. Britain were dealt with at the Thurs. mng. session in two resolutions that read as follows:

"Resolved that (a) All subsidized lines should have good ships at not less than 12 knots speed, thoroughly ventilated holds for fruit, apart and free from heat and taint of other cargo.

"(b) Close supervision of the stevedores to ensure proper stowage and careful handling in both loading and discharging.

"(c) Just and reasonable conditions in all bills of lading so that in case of loss through breakage or non-delivery of goods the shipper may recover easily such loss from the ship.

"(d) That the Government should hold back part of such subsidy in order to indemnify shippers that may have suffered loss through the failure of the steamship to sail within a

reasonable time after the advertised date of sailing."

MARITIME SHIPMENTS

The second resolution read:

"Resolved, that whereas the export of fruit from the Maritime provinces by sea is not satisfactory on account of the slow service provided by the lines now sailing from Halifax to Great Britain, and

"Whereas, these lines are subsidized by the Federal Government for amounts that should give a satisfactory service:

"Therefore, be it resolved that we ask the Government to combine the two subsidies now paid to two lines in a subsidy to any one line that will give a 12 knot weekly service during the fruit shipping season."

Discussion was lead by Mr. Ruddick, who showed what oversight is given by the Dept. to fruit shipments. He submitted copies of inspectors' reports that showed that the inspectors have to report the date of inspection, the temperature of the fruit on the wharf, condition of the apples, name of the shipper, etc. This is done at Montreal and also in Gt. Britain after the receipt of the fruit. A sample report of a shipment made last Oct. by the steamship Bavarian, showed that she sailed Oct. 26, contained 28,000 bbls. of apples, that the temperature in the shed on the wharf had been 60 to 65 deg., that the temperature of the apples in the barrels before loading had been 70 to 80 deg. Of these apples 105 lots had been inspected, of which 20 per cent. had been found to be in bad condition. Many of the apples were scalded, showed scab and were otherwise defective. The temperature in the hold of the ship during the first 3 days of the voyage was 62 deg., and gradually dropped to 51 deg. after the vessel had been out 7 days. At the end of the voyage the temperature was 57 deg. In the cold storage dept. the apples on loading, showed a temperature of 66 deg., which dropped to 40 deg. by the time the vessel reached Gt. Britain.

Mr. Ruddick was asked if reports were taken regarding the shipments from N.S. points, and was told that reports were received but that thermograph records were not kept. Mr. Ruddick was asked if the Dept. has any control of the temperature maintained in the vessels, and replied that it has not, but that the records of the temperatures on the vessels are filed on the Board of Trade at Montreal, where the shippers are able to see them. Where improper temperatures have been maintained the companies find it difficult to obtain further shipments.

"Mr. Fisher was asked by Mr. Eaton if the Govt. intends to have thermographs put in every vessel, and was told that it does. Mr. Eaton asked if figures could be obtained showing the comparative temperatures on the deck and in the hold. This led to a long discussion, the result of which was that the Govt. claimed that efforts on their part had shown that a satisfactory record of temperatures on deck cannot be secured. Mr. E. D. Smith wanted to know what guarantee the Govt. has that the cold storage machinery on the vessels is not stopped during the course of the voyage. In reply Mr. Fisher stated that the thermograph records would show any variation in the temperature. In a discussion it was decided that 12 knots an hour would be a satisfactory rate of speed where low temperatures are maintained on the vessels. The resolutions were then carried.

ICED CARS FOR FRUIT

Mr. Graham submitted a resolution which claimed that as the Govt. furnishes ice for a certain number of cars, used for the export of dairy produce, it should do the same for the fruit growers. He had frequently been told, when he wanted to use these ice cars for his fruit, that he could not have them as they were reserved for dairy produce. Mr. Parker rather mischievously said, that as the dairy commis-

sioner has charge of the fruit division, he should be able to remedy this matter.

A little further discussion resulted in Mr. Fisher promising to extend the same privileges in regard to iced cars to shippers of fruit for export, as are given to shippers of dairy produce. This announcement was heartily applauded. Mr. E. D. Smith asked if this would include apples and was told that it would. Mr. Brandrith wanted to know if B.C. growers cannot obtain the same privileges for the inter-provincial trade, as they export but little fruit. Mr. Fisher replied, with a smile, that he would consider the matter.

MARKS ON PACKAGES

The following resolution caused a lively discussion: "Resolved, that all the marks required by the provisions of section 4 of the Fruit Marks Act shall be placed on both ends of closed packages." Mr. Starr said that shippers place their mark on one end and consignees on the other end. Were the shippers to be forced to place their marks on both ends it would cause confusion. Fruit Inspector Smith said he was in favor of such a resolution as he found that some shippers were not too scrupulous about putting their marks on the end. They would place part on the end and part on the side, making it difficult to find it. When part of the package was removed, the marks disappeared. The resolution finally carried, the word "either" being substituted for the word "both."

LEGAL APPLE BOX

The following resolution also was carried: "Resolved that the Act legalizing the apple box be so amended as to make the Act apply to internal as well as export trade, but to closed packages only." This was done at the request of the B.C. growers, who pointed out that while the growers in the other provinces conduct an export trade largely, theirs is an inter-provincial trade, and that it is just as important there should be uniformity in boxes for the inter-provincial trade as for the export trade. Mr. Fisher said that such a proposal had been made when the discussion took place in the House of Commons, regarding the standard box, but it had not been adopted owing to the fact that it might interfere with growers who sell apples on their local markets in all sorts of boxes. It was pointed out that as the resolution referred to a closed package only, it would not interfere with this practice.

STANDARD APPLE BARREL

It looked at first as though it would be difficult to reach an agreement in regard to a standard apple barrel, but it was finally decided, practically unanimously, to make the 28 in. barrel the standard for Canada. This action was taken by the adoption of the following resolution: "Whereas a large proportion of the fruits of the Dominion are bought and sold by the barrel, and whereas the size of the barrel varies in the different provinces, leading to confusion in price quotations; therefore be it resolved, that the present barrel, described in Section 4, Chapter 26, Statutes 1901, be made the standard uniform barrel in Canada for shipment of fruit and that no other size of closed barrel be allowed after two years.

"And further resolved, that this conference recommend the Department of Agriculture to strictly enforce the provisions of the Act relating to the sale of certain commodities (sec. 4 and 5) relating to the size of and uniformity of packages."

The description of the barrel as contained in the Act is as follows: "All apples packed in Canada for export for sale by the barrel in closed barrels shall be packed in good and strong barrels of seasoned wood having dimensions not less than the following, namely: 26¼ in. between the heads, inside measure, and a head diameter of 17 in., and a middle diameter of 18½ ins., representing as nearly as possible 96 quarts."

A lively discussion took place regarding this matter. Sample barrels were brought in and used to illustrate the points raised. Telegrams from N.S. were read protesting against the 28 in. barrel being made the standard, although the members of the N.S. delegation were unitedly in favor of such action. Mr. Innis, of Chatham, representing the largest manufacturers of apple barrels in Canada, spoke at considerable length. He claimed that the manufacturers can supply 28 in. staves more easily than 30 in. and that the flour trade is changing to the use of 28 in. barrel. He also claimed that the 28 in. barrel is almost universally used in the U.S. Mr. Jack favored the smaller barrel because it more nearly represents the contents of 3 boxes. The Ont. representatives admitted that many growers in Ont. are using a 30 in. bbl., for the sake of uniformity, were willing to agree with the other delegations in favor of a standard bbl. of 28 in. Mr. Johnson and Mr. Ross said that the 28 in. bbl. is used almost exclusively in Southern Ont. Messrs. E. D. Smith and M. S. Schell, both members of Parliament, objected to growers being prevented from using the larger bbl. if they desired, but on a vote being taken on the resolution, it was carried practically unanimously, only three voting against it.

TARIFF ON SUGAR

A discussion took place on a resolution in regard to a change in the tariff on sugar, but the resolution was finally withdrawn, when it was found it would likely create a controversy and take up considerable time. Mr. R. Anderson, of Montreal, spoke at some length on this subject and claimed that the sugar manufacturers in Canada, owing to the tariff protection they receive, make a profit of about \$2,000,000 a year over and above a legitimate interest of 7½ per cent.

FRUIT BASKETS

A resolution was introduced regarding the size of fruit baskets. The conference was asked to adopt the same sizes as were recently recommended by the growers of the Niagara district, who are the most interested in the matter. This resolution, owing to the lack of time for thorough discussion, was left on the table.

THE GERMAN APPLE TRADE

Mr. Chapin, of Toronto, read a paper showing the importance of the apple export trade that has developed during the past few years with Germany, and which is seriously threatened by the tariff on apples that will shortly go into force in Germany and which will practically stop the importation of Canadian apples. The delegates felt that the matter was an important one and were in favor of everything possible being done to reach an agreement with the German Govt. Mr. Fisher explained what has led up to the present difficulty and claimed that the Canadian Govt. is willing to consult on this matter with the German Govt. as soon as the latter shows a willingness to do so.

FUTURE CONFERENCES

A resolution recommending the establishment of a Dominion Pomological Society was adopted, but was later withdrawn when Hon. Mr. Fisher promised to arrange for future conferences regularly, every two or three years. This promise was received with great enthusiasm.

DOMINION FRUIT DIVISION

The only regrettable feature of the conference occurred in connection with the matter of the Fruit Division being under the control of the Dominion Dairy Commissioner. It was caused by what many of those present looked on as a little sharp practice on the part of Hon. Sydney Fisher, who was acting as chairman when this matter was raised.

Ever since the fruit division was placed under the charge of the dairy commissioner the fruit growers of Canada have been dissatisfied, and

on frequent occasions have made their dissatisfaction known. In spite of explanations that have been given by Mr. Fisher for his action, resolutions condemning the arrangement have been passed by several of the provincial fruit growers' associations as well as by numerous local associations.

Hardly had the convention convened before this question was raised privately among the delegates. It was known that Hon. Mr. Fisher was opposed to making any change, but the growers felt that the matter was of such importance that they should place themselves on record. They pointed out that as this is not a question of the officials now concerned, but one of principle, and that as it is felt the importance of the fruit industry will never be fully recognized until it is accorded a chief of its own, who will be directly responsible to the Minister of Agriculture only, their views on this matter should be made known at the conference.

Owing to the many other subjects of importance that had to be considered this matter was not brought up until near the close of the final session, when a resolution was submitted, among several others, by the resolutions committee. This resolution read as follows:

"Resolved that in the opinion of this conference the time has arrived when the horticultural interests of the Dominion should be represented by a separate division under a chief directly responsible to the Minister of Agriculture."

The members of the resolutions committee that brought in this resolution represented all the provinces. It had been agreed quietly among the delegates, that should any discussion on the resolution arise, speakers from different provinces should get up and make the views of their growers known.

Before reading this, which was among several other resolutions, Hon. Mr. Fisher announced that, to save time, those resolutions that could be passed without discussion, would be passed, and that any which required discussion would be set to one side and debated later. Several resolutions were passed, and one or two were set to one side for further consideration before this resolution was reached. On reading it to the convention, Hon. Mr. Fisher seemed a little surprised, and immediately set it to one side, among those to be taken up later, with the remark that he had something to say on the subject. These other resolutions were taken up in order and settled, but Mr. Fisher apparently overlooked this one, as instead of reading it he proceeded to bring the convention to a close, by thanking the delegates for their attendance and congratulating them on the success of the conference. This action on his part caused general surprise among the delegates, who had been waiting for this resolution with considerable interest.

Some thought that Mr. Fisher had overlooked the resolution unintentionally. It was then after 5 o'clock on the last day of the convention and a hasty debate between some of those who had agreed to support the resolution when it was submitted, led to its being decided to let the matter drop, the belief being that the resolution, as submitted by the resolutions committee, was sufficient to make their views known to the Dept.

The unfortunate part of the incident lies in the fact that subsequent developments give strong reason to believe that the resolution was intentionally overlooked by Mr. Fisher, with the object of preventing the growers from having an opportunity to make their views known. This is shown by the fact that when Mr. Fisher handed this resolution to the official stenographer, and to the reporters present, it bore the words at the bottom, "laid on the table, S.F." The resolution was handed to the reporters just as the conference finally closed, and thus must have been noticed by Mr. Fisher. When he wrote on it, that it had been laid on the table, he wrote what was not the case, as the matter had not been dis-

cussed by the conference. If the resolution is published in the official report with these words attached, it will give the impression that the matter had been discussed by the conference, and was not considered of sufficient importance to be finally disposed of, and that it had been left on the table with their consent. This was not the case. Those present will be surprised, therefore, if the resolution is published in this form. In the meantime it can be stated that probably every delegate present was prepared to stand by that resolution, and that they regret that the matter was disposed of in the manner in which it was. It gave the impression that Mr. Fisher felt the weakness of his position and that he did not like the idea of being called on to defend it before such a representative gathering of growers.

OTHER RESOLUTIONS

Near the close of the conference, and at odd moments during the meetings, several resolutions of minor importance were adopted. These included the following:

"Resolved that this conference recognizes the efforts that have been made by the Government in the direction of fighting and controlling the various insect and fungous pests of the fruit industry, and trusts that such efforts will not be relaxed."

NURSERY STOCK

"Further resolved that inasmuch as serious losses have been sustained by fruit growers by reason of the sale of nursery stock of inferior quality, and untrue to name, this conference urges the various provincial governments to enact such legislation as will thoroughly safeguard the interests of the purchaser of such stock."

DEVELOPING MARKETS

"Resolved that this conference is in sympathy with the aims of the following resolution passed by the Ontario Fruit Growers' Association:

"That we recommend a vigorous campaign in conjunction with the Dominion Government to exploit the apple markets of Europe, Great Britain and South Africa.

"To appoint agents whose sole duties will be to open up markets in these countries. To ask the Government to continue to improve the conditions of cold storage for tender fruits, so that the shipper may have the best facilities for reaching the markets of the world."

FRUIT MARKS PENALTIES

"Resolved, That the Dominion Fruit Growers' Conference recommend that the Fruit Marks Act be amended so as to increase the penalties for third and subsequent violations of the said Fruit Marks Act."

DOMINION FRUITS

"Resolved that this conference, whilst freely acknowledging the great good done to horticulture by the publication of valuable bulletins on the various phases of the science, does respectfully request the extension of the work to some permanent treatise on the fruits of Canada with colored plates permitting of the easy identification of varieties and containing such information in regard to them as may be generally useful."

DIRECT SALES OF FRUIT

"That in the opinion of this conference the proper method of selling fruit is by direct sale individually or cooperatively, and that this conference urges upon the governments and upon the growers that a better system of pruning, spraying, grading and packing be adopted that will enable our fruits to take a higher stand in the markets of the world.

FRUIT INSPECTORS' WORK

"Resolved that this conference does hereby recommend to the Dept. of Agri. the continu-

ance of the services of fruit inspectors in those provinces where such services have been so effective on account of the nascent nature of the fruit interest therein; the inspectors being

used for this purpose whenever not engaged in the actual work of inspection."

The conference was brought to a close by the adoption of resolutions thanking Hon. Mr.

Fisher for the able manner in which he had presided at the various sessions, and with hearty cheers for Canada, for the fruit industry of the Dominion and for Hon. Mr. Fisher.

Practical Pointers from Practical Persons

Picked up and Penned by A. B. Cutting, B.S.A., Special Representative of The Horticulturist who is visiting the homes of fruit and vegetable growers in the Niagara Peninsula

IT would seem that there is need of more accurate information regarding the preparation and relative quantities of ingredients of the lime-sulphur wash. So many different proportions are advised by different men, and so many different ways are adopted for mixing these proportions that the new beginner, and sometimes the experienced grower, is at a loss to know the best method of procedure. Two questions should be settled, if possible. First, What is the best definite formula for the mixture? and second, Is boiling necessary or is it not? There are some difficulties in the way of answering these questions; yet they are not sufficiently formidable to warrant the many different opinions that exist among fruit growers.

In 1905 the Dept. of Agri. conducted valuable experiments in the use of this mixture. During the present session of the Legislative Assembly, the Hon. Nelson Monteith stated that a continuation of the work is under consideration. In the interests of the fruit industry, the work not only should be continued but also it should be extended to cover and to settle, as far as practicable, all points at present debatable.

THE LIME-SULPHUR WASH.

Whether lime and sulphur should be boiled by steam or not is the most disputed point among the users of this popular mixture for San José scale. Many growers believe that steam must be used for accurate results. On the other hand, there are many who boil simply by the energy of the lime in slaking, and with results equally as satisfactory. Among the latter is Mr. J. H. Broderick, of St. Catharines, who claims that the mixture can be boiled without an engine if double the usual amount is prepared at a time. A double quantity of lime is necessary to get a greater amount of heat generated, which is necessary to produce the desired result. Mr. Broderick's method of procedure, step by step, as explained in his own words, is as follows:

"Take a 40-gal. barrel and in it place a hoe with a strong handle, then put in 40 lbs. of best lime (Beachville). In a large pail put 30 lbs. of sulphur, and add enough water to make a paste. Apply then to the lime in the barrel 15 gals. of boiling hot water—and now is the time for the operator to hustle if he ever hustled in his life; immediately after adding the water dump in the sulphur. Over the top of the barrel place a heavy canvas to keep the material from splashing and boiling over, leaving a small vent around the hoe handle for the escape of steam. Keep this cover on the barrel for about 15 minutes, when the violent boiling probably will be stopped, then add about 15 gals. more water. Stir slowly by moving hoe around bottom of barrel—do not raise hoe to let the air in. Allow the mixture to boil about 40 minutes, then add enough warm water to fill the barrel. The mixture then should be strained into another barrel; to do this easily, it is necessary to stir often and well. After straining there will be about 35 gals. of material; this should be diluted sufficiently to make 80 gals. It is then ready for use."

WOULD AMEND FRUIT PACKAGE LAW.

According to the Canadian Fruit Package Law, practically any basket besides the four specified sizes may be used for shipping fruit, so long as it is stamped plainly on the side in

large black letters with the word "Quart" in full, preceded with the minimum number of quarts the basket will hold when level full. This regulation is very unsatisfactory, as it leads to confusion and, sometimes, indirectly, to dishonest practices. A standard size and no other should be used. A basket stamped in the manner required by law has no meaning to the ordinary consumer, and even to many retail dealers. The fact that a basket is stamped "9 Quarts" or "10 Quarts," as the case may be, makes little or no difference in the selling price of the basket, for usually these small sizes bring as much money in the market as the regulation 11 quart size. Mr. E. D. Smith, M.P., Winona, thinks that this clause should be done away with, or at least it should be changed so as to compel shippers to stamp undersized baskets with the words "1 Quart Short" or "2 Quarts Short," as the case might be. Both suggestions are good. The adoption of either would mean much to further the cause of uniformity and honesty in our fruit packages and packing.

CO-OPERATION MEANS SUCCESS.

That the development and success of our export commerce in fruits depends on the formation of co-operative organizations amongst growers is the opinion of Mr. P. J. Carey, Dominion Fruit Inspector, Toronto. The co-operative plan, with central packing houses, is the only plan for satisfactory results. Through co-operation, all our fruit may be placed on the market at its very best, and it follows that we will get the very best out of the fruit. Co-operation will give us a better pack—more uniform and more honest. It will do away with the picking of immature fruit. Large quantities of fruit are picked too soon; on the other hand, thousands of barrels of apples are left on the trees too long—this partly accounts for the large percentage of windfalls in some orchards. Co-operative organizations ship only the best grade, the rest is evaporated—a system that commands confidence in foreign markets; individual buyers ship anything and everything, windfalls and all. This destroys confidence, and eventually will cripple our fruit industry. By all means, co-operate!

UNIFORM QUOTATIONS.

At a meeting of fruit growers held in Beamsville last month, Mr. J. A. Livingston, editor of *The Independent*, Grimsby, made a strong plea for uniform quotations. Different quotations going out from the same locality on the same day, mean depressions in the market and ruination to the fruit business. Un-uniform quotations keep the markets in an unhealthy state. They injure the grower, the dealer, and everybody connected with the industry. All kinds and grades of fruit should be quoted at the price fixed by the law of supply and demand for that particular kind and grade on a particular day. There should be no cut-throat methods in the fruit trade.

PRUNING SYSTEMS FOR SMALL AREAS.

For small areas, and particularly for the city man's fruit garden, intensive methods of culture and care must be employed. Among other methods of pruning trees for small lots is the fan system. By this method, the trees are kept low and the branches are trained to grow in two opposite directions, all others at

right angles being cut off. The system admits of more trees on a given area, and at the same time it allows inter-cropping one way between the trees. It also tends to produce better quality and color in the fruit, as the sun has a better chance to do its work. This system is being tried by Mr. H. F. Baker, and Mr. J. W. Brennan, of Grimsby, and by others.

Mr. Baker is experimenting also with a modification of the system, as he is growing peaches trained fan-shaped on a wire trellis. The branches are tied in position to the wires. The trees are pruned so as to keep the new wood well back and near the trunk. This system is akin to that used by some French and Italian gardeners in certain parts of their native lands; it may be valuable for its purpose in our own.

BLACKBERRIES FOR PROFIT.

A modification of the hedge row system of growing blackberries is adopted in the large plantation of Mr. Newton Cossitt, Belvedere Fruit Farm, Grimsby. Instead of growing the canes close together and in wide rows, Mr. Cossitt thins them out to at least 8 in. apart and keeps the canes in line as far as practicable. The main idea of the system is to have a thin narrow row. Many advantages are claimed for the system by Mr. Cossitt: 1. Ease in cultivating and hoeing around the plants. 2. It facilitates the work of picking and marketing. 3. Better quality of berries is secured, due to energy of root system going to develop one cane instead of half a dozen. 4. No loss through immaturity in centre of rows, such as sometimes occurs when rows are wide. 5. Narrow rows can be grown closer together, more plants may be grown to the acre and, as a consequence, a greater yield is secured.

THE LONGHURST PEACH.

In most peach orchards of the Niagara peninsula the Longhurst is grown in only small quantities or it is discarded altogether. Many growers object to this variety, claiming that it is not profitable, that it requires too much care and manure, and that the fruit is too "fuzzy" and unattractive. On the other hand; there are growers who contend that usually the Longhurst is not given a fair trial.

Mr. J. W. Brennan, Grimsby, said that "the Longhurst is one of the leading commercial varieties grown, when properly taken care of. It must be grown on sandy soil, well fertilized and built up with cover crops. The tree requires regular and systematic pruning; and, above all, the fruit must be well thinned."

The ideas of Mr. W. D. Culp, Beamsville, another champion of the Longhurst, agree with those of Mr. Brennan, except that Mr. Culp has found better results from trees grown on soil somewhat heavier than sand. Mr. Culp said also: "The Longhurst yields annually, but is inclined to overbear; to get size and quality, it should be well pruned and the fruit thinned every year. The 'fuzz' objected to by most growers disappears as size is developed—a large sized Longhurst is comparatively clean in this respect."

PLANTING SWEET CHERRIES.

"Most growers use two-year old stock when planting sweet cherries," said Mr. W. H. Brand, Jordan Station, "but, for an even stand, it is better to plant one-year old trees. On trees two years old, the fine root fibres are too far

away from the crown, and when dug most of them are cut off; on one-year old trees the fibrous roots are close up and can be saved. The buds on tree trunks of two years' growth have been developed the previous season, and also the trees are too high; and as a consequence, there is no protection against sun scald and undue evaporation. The trunks of two-year old trees are large and too much of a tax on the bruised roots—this can be remedied only in part by pruning back. And furthermore, one-year old trees can be headed at any height desired while those of twice the age have heads already formed in the nursery."

MELONS FOR MARKET.

Among the many different crops grown by fruit and vegetable men in the vicinity of Hamilton are melons, and musk melons in particular. "It is not well for growers to depend upon one kind of crop alone," said Mr. Walter Horne, of Aldershot; "it is always better to grow a general assortment of marketable produce rather than to specialize." Although this item of general advice was voiced by Mr. Horne, yet he has had special success in growing musk melons for market. In varieties, he grows Early Citron, Rocky Ford and Paul Rose. Early in May he starts the seed in the hotbed, sowing about five seeds on an inverted sod, say a cube four inches each way. About a month later, if the weather is settled and no danger of frost, these are set out in the field. The early sorts are planted five feet apart each way, and the late six feet. When thoroughly hardened to the open, they are thinned out to two or three vines in a hill. Cultivate often and well.

GROWING CELERY.

The well-known market gardeners of St. Catharines, J. Dunlop & Son, briefly outlined to your representative their method of growing celery. In March the seed is sown in hotbeds, in alternate rows with tomatoes. During the latter part of April, the plants are transplanted to a cold frame; and about the first of June, to the field. Mr. Dunlop grows his celery on the level, rows 3 ft. apart with plants 6 in. apart in the rows. He cultivates the early varieties till the middle of July, then puts 10 in. boards on both sides of the rows. These boards bleach the celery without the necessity and trouble of earthing up. These early sorts, ready for market about Aug. 1, are White Plume and Paris Golden Yellow.

The late varieties, such as Hartnell's Perfection, are cultivated till later in the season, and in Sept. a furrow is plowed up on both sides to keep the stalks together. When frost comes, the celery is dug and put in trenches 18 in. in width and packed solidly. Over this trench is put V-shaped boards, and on the approach of heavy frosts the whole is covered with manure. The late sorts are ready for market at Christmas. They can be kept in the trenches, if undisturbed, all winter. When trenches are opened, however, the celery must be removed and stored inside

CHALK'S JEWEL TOMATO.

Mr. J. H. Broderick, of St. Catharines, grows Chalk's Early Jewel tomato, and thinks it is the best general purpose tomato for his locality. Although its name implies earliness, it cannot be classed among the early varieties. It is about a week earlier than Ignatum. "It is well liked for canning," said Mr. Broderick, "being round, smooth, solid in flesh and of uniformly medium size. It is very productive; last season I picked and shipped 1,820 11 qt. baskets from 1,900 plants. Growers should buy the seed from a firm that makes a specialty of this variety."

Gravensteins in P.E.I.

In Rev. Father Burke's Prince Edward Island notes that appeared in the January issue of THE HORTICULTURIST, the writer was made to

say that in the past the Blenheim apple was known as Gravenstein.

In calling attention to this statement Father Burke explains in a recent letter that the Blenheim is a most successful apple in Nova Scotia, much more so than the Gravenstein, which was at one time considered to be her specialty, but whose day now seems to be past. "We think that we are growing Gravensteins here now better than they can be grown anywhere else," concluded the writer.

Who They Are

Key to the group photograph of the delegates at the Dominion Fruit Conference published on page 81.

- 1 Walter Dempsey, Trenton, Ont.
- 2 W. T. Macoun, Hort. Exper. Farm, Ottawa.
- 3 W. J. Farley, Trenton, Ont.
- 4 Norman Jack, Chateauguay Basin, Que.
- 5 W. D. Albright, London, Ont.
- 6 R. T. Goodfellow, Prince Albert, Sask.
- 7 Geo. Vroom, Dom. Fruit Inspector, Middleton, N.S.
- 8 Robt. Brodie, Westmount, Que.
- 9 Ralph Eaton, Kentville, N.S.
- 10 Saxby Blair, Macdonald College, St. Annes, Que.
- 11 Elmer Lick, Oshawa, Ont.
- 12 John F. Scriver, Dom. Fruit Inspector, Hemmingford, Que.
- 13 A. W. Peart, Burlington, Ont.
- 14 G. Renaud, La Trappe, Que.
- 15 G. C. Chapin, Toronto, Ont.
- 16 J. C. Chapais, St. Denis, Que.
- 17 R. J. Cochrane, Colborne, Ont.
- 18 J. J. Philp, Dom. Fruit Inspector, Winnipeg, Man.
- 19 Prof. F. C. Sears, Truro, N.S.
- 20 R. W. Starr, Wolfville, N.S.
- 21 B. W. Chipman, Comr. of Agri., Halifax, N.S.
- 22 D. Johnson, Forest, Ont.
- 23 W. J. Brandrith, Ladner, B.C.
- 24 Prof. Hutt, Guelph, Ont.
- 25 Dr. Wood, St. John, Que.
- 26 John Fisk, Abbotsford, Que.
- 27 David S. Manson, Winnipeg, Man.
- 28 Jas. Grant, Victoria, B.C.
- 29 J. Innis, Chatham, Ont.
- 30 R. J. Hamilton, Edmonton, Alta.
- 31 G. C. Miller, Middleton, N.S.
- 32 J. A. Ruddick, Dairy Comr., Ottawa, Ont.
- 33 J. C. Metcalfe, Hammond, B.C.
- 34 J. S. Scarf, Woodstock, Ont.
- 35 Father A. E. Burke, Alberton, P.E.I.
- 36 W. H. Bunting, St. Catharines, Ont.
- 37 W. D. A. Ross, Chatham, Ont.
- 38 Alex. McNeill, Chief Fruit Division, Ottawa, Ont.
- 39 R. W. Shepherd, Como, Que.
- 40 R. M. Palmer, Victoria, B.C.
- 41 Alfred Gifford, Dom. Fruit Inspector, Meaford, Ont.
- 42 Martin Burrell, Grand Forks, B.C.
- 43 E. H. Wartman, Dom. Fruit Inspector, Montreal, Que.
- 44 P. J. Carey, Dom. Fruit Inspector, Toronto, Ont.
- 45 W. L. Smith, Toronto, Ont.
- 46 I. W. Stephenson, Sheffield, N.B.
- 47 A. E. Sherrington, Walkerton, Ont.
- 48 Robt. Hamilton, Grenville, Que.
- 49 Murray Pettitt, Winona, Ont.
- 51 Maxwell Smith, Dom. Fruit Inspector, Vancouver, B.C.
- 52 F. L. Dery, Dom. Fruit Inspector, Montreal, Que.
- 53 P. W. Hodgetts, Toronto, Ont.
- 54 J. W. Ford, Oakville, Ont.
- 55 L. H. Newman, Ottawa, Ont.
- 56 A. E. Dewar, Charlottetown, P.E.I.
- 57 L. Woolverton, Grimsby, Ont.
- 58 Prof. Jas. W. Robertson, St. Annes, Que.
- 59 A. S. Chapin, Toronto, Ont.
- 60 R. J. Graham, Belleville, Ont.
- 61 E. D. Smith, M.P., Winona, Ont.
- 62 H. H. Miller, Ottawa, Ont.
- 63 J. C. Ready, Charlottetown, P.E.I.

A Veteran's Advice on Spraying

Mr. W. H. Bunting, of St. Catharines, Ont., writes, Feb. 20th, 1906: "Permit me to say that to the best of my judgment I believe 'SCALECIDE' will be a valuable agent to be used in controlling San Jose Scale. While I am not prepared to unqualifiedly endorse it until further experimental work has been carried on, I have no hesitation in recommending it to fruit growers, as worthy of a fair trial, wherever scale is found to exist."

Full particulars, prices and testimonials from the most eminent specialists and foremost fruit growers of America, sent on application to the Spramotor Co., London, Ont., or B. G. Pratt Co., 11 Broadway, New York City.

EXTENSIVE SALES. Messrs. Stone & Wellington Nurseries of Toronto, say that this year will be one of the best in the history of their business. Although the season has not yet closed, they have sold up to date over 300,000 fruit trees, composed of apples, pears, cherries, plums, peaches, etc.; over 360,000 small fruits, including grape vines, raspberries, currants, gooseberries, and blackberry bushes; 130,000 shrubs, ornamentals, and hedgings; 70,000 evergreens, 25,000 roses and 10,000 herbaceous plants. They report that the largest demand for commercial fruits is still for such standard varieties as the Baldwin and Ben Davis apple, Early Richmond and Montmorency cherries, Abundance, Red June and Lombard plums. The demand for new varieties such as the Maynard and Climax plums is largely increased. Small fruits also are in very large demand, due in a great measure to the establishment of canning factories.

GREAT IMPROVEMENTS. The Little Giant Sprayer Co. have made many improvements in their machine, notably in the Ys and elbows, to remove all diminution of pressure. All right angles have been done away with, and a surprise is promised their patrons in the new clusters, as well as in the Ys. Patent nozzle tips will be furnished at 40 cents each. Formerly they cost 75 cents. The manager, Mr. Palm, informs THE HORTICULTURIST that the sales have been large and the factory kept busy. The demand is said to have increased extensively, and those who wish to have the machine for the first spraying are advised to place their order in advance, so that they may not be disappointed in delivery.

A HANDSOME CATALOGUE. Realizing that the quickest way to increase business is to increase the number of people interested in cultivating flowers, the Webster Floral Company, of Hamilton, have issued an excellent illustrated catalogue in which the various lines of plants and flowers are fully described. Handsome premiums are offered with every \$5.00 order. Directions for handling and planting are given.

FINE PLYMOUTH ROCKS. The general plan of mating and selection practised by the Woodview Poultry Yards, of London, Ont., ensures satisfaction to those who purchase settings from that source. A neat booklet containing a description of birds in each of the pens has been printed. Matings are made to produce general utility birds, exhibition males, exhibition females, etc.

Plans for a new horticultural building at the Toronto exhibition have been submitted. It will be in the form of a cross with a dome centre 50 ft. in diameter. The wings will be 220 ft. from extremity to extremity. The four will accommodate respectively fruit, flowers, vegetables and honey. The cost will be about \$70,000. It is expected to have everything in readiness for the show of 1907.

POULTRY DEPT.
Conducted by
S. Short, Ottawa

In accordance with a promise made in the last issue of THE HORTICULTURIST I propose to deal in this article with different methods of hatching. It is generally conceded by poultry experts that if less than 100 chickens are to be hatched they can be handled nicely by using hens; if more than 100 are desired the incubator is much more convenient and more easily managed, and in less time.

I can not do better than quote what Mr. W. R. Graham, the efficient Manager of the Poultry Dept. at the Guelph Agri. College, has recently written on "running an incubator." Mr. Graham has had wider experience in the care of incubators than any one else in Canada. His instructions are as follows: "When starting a machine set it level. This is necessary with hot-air machines especially. Then examine the lamp and see that the fine wire gauze in the burner is clean. This is necessary to get a good, clear flame. An old tooth brush is suitable for cleaning the gauze. The gauze should be cleaned once a week at least, more often if the room is dusty. If this is not done the lamp is more inclined to smoke. A new wick is placed in the burner, the lamp flue or smoke flue is examined and cleaned if an old machine. The lamp is now filled with good oil and lighted. Use oil that weighs about 7.80 pounds to the gallon, as the better the oil the less trouble with smoke, burners, wicks, etc. Next examine carefully the interior of the machine and brush it out thoroughly.

Place about 5 thermometers in a machine, one at each corner and one in the centre. See if they register nearly the same. If there is more than 2 deg. difference raise or lower one side of the machine. Try and get your machine to heat as nearly even as possible. If you find the centre of the machine very warm or other "hot spots" over the tray you will require to screen these by placing strips of tin or cloth above so as to prevent the heat, or, in other words, check the heat in this particular spot. I usually run a machine about two days before I place the eggs on the trays. If it will not work empty I do not care to try to make it work when it is full of eggs.

"The eggs are tested the 9th day. They are easily tested then, the dark ones are fertile, the clear ones infertile. After the 4th day cool the eggs on a table, the table being as large as the tray. Do not use a small table or set the tray on about 3/4 of the way, for the reason that if this is done the eggs exposed over the end of the table will cool much faster and are exposed to a draft. Cool until the eggs feel cool. Another test is made on the 16th day, sometimes on the 14th day. After the evening of the 18th day do not cool any, and I would favor closing the machine then until the hatch is over.

"Do not turn eggs when your hands are dirty or covered with coal oil. This practice is common and may be responsible for bad batches. Do not expect the machine to out-hatch the perfect broody hen. Some chicks will be dead in the shell, there may be some crippled, etc., but the machine is ready to set when the eggs are ready."

HATCHING WITH HENS.

The best method of hatching with broody hens is to use a loft or pen for hatching purposes only. Darken the windows and place the nest boxes on the floor. Fill the boxes with nest material nearly full so that the hen will not have to jump down on the eggs. Set the

THE WOODVIEW POULTRY YARDS

LONDON ONTARIO

BARRED PLYMOUTH ROCKS EXCLUSIVELY

At the great "Ontario" Show at Guelph, December 11th to 15th, 1905

WOODVIEW PULLETS WON

First in class open to the world; Special for best Barred Plymouth Rock female at the show; and the Canadian Barred Plymouth Rock Club's Special for best Pullet.

At the International Show at Detroit, January 6th to 11th, 1906

WOODVIEW BIRDS AGAIN WON

In competition open to the world.—First pullet; Second cockerel; Second cock; and Special for the best shaped male at the show.

OUR MALES ARE BRIGHT STRAIN

FEMALES LATHAM STRAIN

the best obtainable. EGGS FOR HATCHING, \$2.00 PER SETTING UP.

MATING LIST MAILED FREE UPON REQUEST

CORRESPONDENCE SOLICITED

John Pringle, Prop.

Creighton Poultry Yards

OTTAWA, ONTARIO

High-class exhibition barred Plymouth Rocks and White Wyandottes. Canada's most popular exhibition and utility fowls. Eggs for hatching \$2.00 for 13. Eggs from different pens have been set and high percentage of fertility proved. One very fine White Wyandotte Cockerel for sale, \$3.00.

S. SHORT, Proprietor

LYNNWOOD POULTRY YARDS

Barred Plymouth Rocks Exclusive y

By careful attention and breeding pure imported stock year by year, I have produced in the "Lynnwood" strain that which is as near the standard as it is possible to get. Eggs from double mating: Pen No. 1, for Cockerels, \$3.00 per 15. Pen No. 2, for Pullets, \$3.00 per 15 or \$5.00 per 30. The above Pens are special exhibition matings. Pens No. 3 and 4 are for exhibition Cockerels, \$2.00 per 15. Pen No. 5 for utility, \$1.00 per 15. A few Cockerels for sale. SATISFACTION GUARANTEED

S. E. LINDABURY

Simcoe, Ontario

Member Canadian Barred Plymouth Rock Club

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WHITE PLYMOUTH ROCKS**

Bred for winter egg production, meat production, and also winners at Canada's largest shows

EGGS, \$2.00 PER FIFTEEN

GEO. A. ROBINSON, St. Catharines, Ont.

Canada's S.C. Buff Leghorns

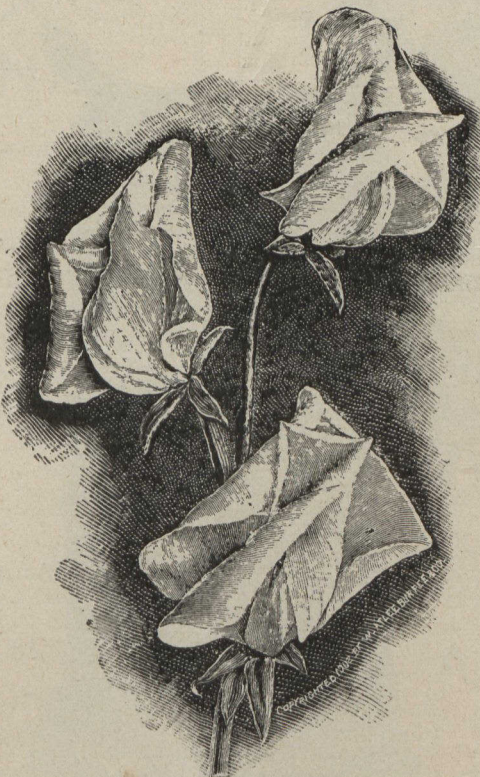
Winners at four large shows, Toronto, Ottawa, Guelph, Ontario, and New York. Won more first prizes and silver cups in 1905 than any other breeder in Canada. Stock for sale. Eggs, \$2.00 per 13. Write your wants

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Royal Nosegay Collection—1 pkt. each 10 superb varieties; each separate and named for 25c., postpaid.

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Bruce's Finest Mixed—Mixed from named sorts by ourselves; pkt. 5c., oz. 10c., 1/4 lb. 20c., 1/2 lb. 35c., 1 lb. 65c., postpaid.

Grand Collection—1 oz. each of 20 distinct varieties; each separate and named for \$1.00, postpaid

Latest Novelties—HELEN PIERCE, bright blue mottled on white ground; GLADYS UNWIN, finest pink, each 10c. per pkt.

ASTERS

Empire Collection—Six superb distinct varieties, named, each separate, mixed colors, for 25c. postpaid.

Bruce's Superb Mixed—10c. packet.

NASTURTIIUMS

Peerless Collection Tall Sorts—Eight grand distinct colors, named, each separate for 25c. postpaid.

Peerless Collection Dwarf Sorts—Eight splendid distinct colors, named, each separate, for 25c. postpaid.

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A Handsome Premium will be Given Free to all Readers who buy Goods from Advertisers.

hens about dusk. The first night let the hen sit on a dummy egg, and in the morning take her off the nest. If she goes back of her own accord she may safely be given the eggs. Leave food and water always in the pen, also a dust bath. Place the same number of eggs under each hen and that number just what the smallest hen will cover. It will not matter then if the hens exchange nests.

The hens should be dusted with vermin destroyer twice during the 3 weeks. All other fowl than the sitters should be excluded from the hatching chamber. In the mornings between 7 and 8 o'clock raise the blinds and let in the light. Usually most of the sitters will come off the nest to feed. Those that do not should be carefully lifted off and all eggs examined. If an egg is broken the rest should be washed in tepid water. After the blinds have been up about half an hour, see if all the hens have returned to their nests. Good sitters will have returned in that time. Close the blinds again and the hens will usually remain on their nests until the light is let in again next day. As soon as the chicks hatch remove the hen, nest and all, for the peeping of the chicks causes the other sitters to become restless.

Do not be afraid to use pullets broody for the first time, for sitting. They make just as good sitters then as at any time in their career. To cluck is a natural instinct just as strong in a pullet as a hen.

I will add a word of warning in regard to handling and testing eggs too often during incubation. The following extract from a lecture on that subject, given by Mr. A. Newport, at Crewe, Eng., is worth reading: "Some people test their eggs, particularly white shelled ones, on the 4th day, though a much better practice is to test them on the 7th or 8th day. I ought, perhaps, here to caution against testing eggs too frequently. It is very hard for a beginner to refrain from handling his eggs, but knowing the delicacy of the blood

vessels that form a perfect maze of tracery over the yolks, and, knowing that these and a further set, busy absorbing the yolk, are very highly sensitive, he will perceive that the less he interferes with the eggs, the less likely he is to damage this fragile and delicate interior. Another reason why I object to testing eggs frequently is that in so doing they are held up to the light in an unnatural position and some of the organs inside the egg are being twisted. Again, there is the light. To test eggs properly a very clear light is needed to pass through the egg. When testing I have frequently seen the light violently disturb the embryo. It would stand still a moment, then begin to wheel around and, as it were, kick and struggle. That cannot be good for development. Therefore, eggs should be tested only once, and that about the 7th or 8th day. If very doubtful about them, perhaps a second test might be given on the 14th day. I should not go beyond that because between the 10th and 18th days is the most critical period in the life of the embryo.

LIQUID LICE DESTROYER

The following questions have been sent in with a request that answers to them be published in this issue: "Will you try to find out for the chicken raisers' benefit, a liquid lice killer, that can be put on the perches and that will kill the lice while the fowl are sleeping? I use oil of sassafras, but it is too expensive for the little chicks, or the birds on the roost. The hens that are laying will have the lice killed on them by the tobacco stems in the nests, but all others not laying have to be dusted, which requires two persons and is very tedious and expensive. Tobacco ashes are put in the dust baths, but the hens do not clean themselves well."

In answer to the first question: There are two liquid louse killers on the market—Rust's and Lee's. These can be obtained from any dealer in poultry supplies. Full directions are

given on the tins. The price is 40 cts. a quart. Try powdered sulphur in the dust baths and on the floor of the coops in which small chicks are housed. When the birds are put in their summer quarters see that there is plenty of dry dusting material in the pens and they will, as a rule, keep themselves free from vermin.

WINNERS AT OTTAWA

At the Fat Stock and Poultry Show at Ottawa, March 5 to 9, the largest classes were the Barred Rocks, White Leghorns, and White Wyandottes. The show surpassed all previous attempts in the quality and in the entries. The first prize Barred Rock cockerel was owned by a young Ottawan, who is employed by the electric company and who keeps fowls as a pastime. He has spent a good sum in purchasing eggs from the best sources and could have sold his cockerel at \$30 or \$50. He says his fowl return him a profit. The first prize White Wyandotte cockerel, also, was bred and owned by an Ottawan, a member of the staff of the Militia Department, who likewise keeps fowl for recreation and profit. He has tried for first honors for several seasons, and by keeping at it has at last succeeded. Nearly all the first prizes for White Leghorns went to an Ottawa man, who has a machine and bicycle shop in the city, and a small farm in the suburbs. He manages both with success and says, when he is tired of the machine work he goes out to his poultry. He has spent considerable in getting the best stock and is now being reimbursed by being able to sell stock and eggs at a high figure. These facts show that any one who will give attention to the details of poultry raising, even in a city back yard, can be successful. These exhibitors, and others not mentioned, won the honors over the heads of many old breeders hitherto considered invincible. This should induce some, who do not keep pure-breds, to secure some at once, and so more thoroughly enjoy poultry keeping.

The Herbert Raspberry

The Earliest, Hardest, Finest Flavored,
Most Productive Red Raspberry. See
Particulars in February Horticulturist.

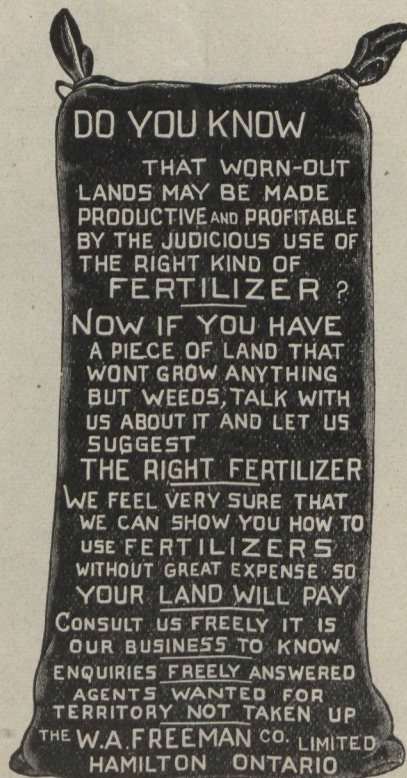
40c. each; \$4.00 dozen; \$25.00 per 100
The Renfrew Nurseries Company, Limited
RENFREW, ONTARIO

GOOD, big "mealy" potatoes can not be produced without a liberal amount of POTASH in the fertilizer—not less than ten per cent. It must be in the form of Sulphate of POTASH of highest quality.

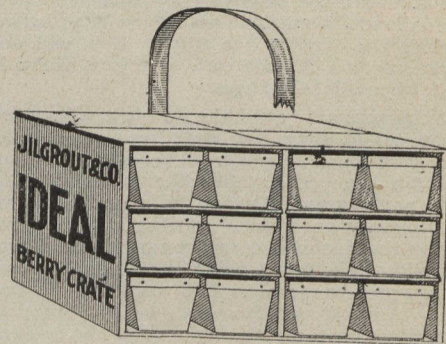
"Plant Food" and "Truck Farming" are two practical books which tell of the successful growing of potatoes and the other garden truck—sent free to those who write for them.

Address, GERMAN KALI WORKS,
93 Nassau Street, New York.

Mortgage Lifting FERTILIZERS



THE Best are Always the Cheapest



If you want baskets or
berry boxes that will
carry your fruit safely
to the consumer, send
your order to

C. W. VanDuzer

BASKET MANUFACTURER,

GRIMSBY

Potatoes \$1,250 a Pound

On account of the potato disease being so prevalent in Great Britain for many years, there has been an effort to produce a blight and disease proof potato, as well as a heavy cropper. The result is the Eldorado, introduced by Mr. A. Findlay. It is owing to the wonderful cropping qualities of this potato, as well as it being a blight and disease resister, that caused the furore in Great Britain the past 3 years, and which has resulted in the highest prices—almost fabulous—ever paid, for any introduction, into the vegetable kingdom, in all time, \$7,000 having been paid for 14 pounds in 1903.

The Eldorado should be of interest to Cana-

dian growers, to whom it is now offered for the first time by Smith Bros. at reasonable prices, considering the great value claimed for this potato. Take note of Smith Bros.' advertisement in this issue.

LIGHTEN GARDEN WORK

The wonderful range of usefulness of the Iron Age Garden Implements has made it possible to avoid the back breaking labor of planting and cultivating a garden in the old-fashioned way. Write for our **NEW IRON AGE BOOK** and learn how much you can lighten the work of gardening this year. This book fully illustrates and describes the

IRON AGE GARDEN IMPLEMENTS

It will tell you how little they cost and how much they accomplish. The No. 6 Tool shown will plant and cover seed in hills or drills; work as a double or single Wheel Hoe; roll, rake, plow or cultivate any crop in any way. Do not fail to get our **NEW IRON AGE BOOK** and learn more about these wonderful tools. **FREE** on application.

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or J. A. SIMMERS Toronto, Can.



No. 6 Iron Age Double and Single Wheel Hoe, Hill and Drill Seeder

SPRAY, SPRAY, SPRAY

your trees for the

Codling Moth and All Leaf Eating Insects with the Best and Safest Poison which is

Swift's Arsenate of Lead

IT WILL NOT BURN AND IT STICKS

MADE ONLY BY THE Merrimac Chemical Co., 33 Broad St., Boston, Mass.

Write for free booklet.

INSIST ON HAVING SWIFT'S.

I SELL

Trees, Roses, Plants and Vines

Evergreen Trees a Specialty

Write for Price List

A W. GRAHAM, St. Thomas, Ont.

Transplanted Maple Trees

For sale in quantity, from 10 to 14 ft. high, 1 in. to 2½ in. in diameter, in large or small quantities. Price on Application.

SCRIM'S Ottawa, Ont.

MARCHMENT'S Sure Growth COMPOST

Supplied to all the largest nurserymen and fruit growers in Ontario. Shipments made by car or boat. Prices reasonable.

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NONE SO GOOD FOR THE MONEY


The Helderleigh Nursery stock is the standard of Canada, and our prices compare favorably with that asked for inferior stock of other nurseries. April is our busy month but your order will receive the prompt attention which has made our nurseries popular among the growers. Perfect stock, true to name. Prompt delivery. Fruit trees, shrubs for lawns, climbers, etc. Send today for catalogue.

The Helderleigh Nurseries

E. D. SMITH, WINONA, ONT.

JAPANESE IRIS

(IRIS KAEMPFERI)



These magnificent Iris are among the most beautiful of our summer flowering plants, and are becoming more popular every season. They commence blooming about the middle of June, and continue for five or six weeks. Many of these flowers measure from 10 to 12 inches in diameter, and rival the Orchids in their rich colorings and markings. While the Iris succeeds in almost any soil and conditions, they delight in a rich, deep, moist position and should be abundantly supplied with manure and water.

Named Varieties—Price 20c each, 3 for 50c, doz. \$2.00.

Mixed Varieties—Strong roots 15c each, 3 for 40c, doz. \$1.50.

IRIS GERMANICA—German Irises are certainly unparalleled for beauty; nothing in creation can vie with them unless the orchids from the tropics. Every shade of color may be found among them, and they will thrive in almost any soil without any care whatever. Strong roots 10c each, 3 for 25c, doz. 80c.

J. A. SIMMERS

SEEDS BULBS PLANTS

TORONTO ONTARIO

Items of Interest

The indiscriminate shipment of small, wormy and unsaleable apples to Manitoba has led the consumers to ask the health authorities of that province for protection against such fruit. It is proposed that the same course be adopted in Manitoba that is in vogue in British Columbia where fruit similar to much of that received in Manitoba is dumped into the river or the ocean.

Bad weather prevented a large turnout of vegetable growers at the monthly meeting of the Toronto branch on Mar. 3. Prof. Harcourt, of the O.A.C., Guelph, was present and offered to cooperate with the growers around Toronto in carrying on experiments with different fertilizers for the different garden crops. Over 20 growers agreed to undertake experiments under the direction of Prof. Harcourt. As none of the regular speakers were present the discussion of the questions that were to be taken up was postponed until Mar. 17. A report of this meeting appears on another page.

The members of the Brantford branch of the Ont. Vegetable Growers' Assn. was held on Mar. 15. An instructive paper on Cabbage Growing was given by R. J. Taylor, who discussed the best cultivation and the treatment of the various diseases. A general discussion followed. The question of selling cabbage by the pound was dealt with also, but nothing definite was outlined. The executive will try to have one of the professors from the O.A.C. deliver an address at the next meeting.

In some of the leading fruit sections of the U.S., where weather conditions are of vital importance to the fruit grower, the Weather Bureau is endeavoring to warn the growers as to the weather probabilities by means of whistle signals. The various conditions of temperature and of storms is to be signalled by a set code of long and short blasts on the whistle.

The members of the Ont. Fruit Growers' Assn. are progressing favorably in their efforts to form cooperative assns. D. Johnson, of Forest, and Inspector Gifford, of Meaford, recently held meetings at Simcoe, Ingersoll and Orillia. At each place they were successful in forming the nucleus of what promises to be a strong assn. At Simcoe, J. E. Johnson has taken up the work and the prospects are bright for a live assn. Organization work at Ingersoll is being looked after by J. C. Harris, while J. Ryerson and R. A. Lehmann have charge of the work at Orillia.

At the annual meeting of the Niagara District Fruit Growers' Stock Co., Ltd., held in Grimsby recently, the following board of directors were elected: R. Thompson, W. H. Bunting and J. H. Broderick, of St. Catharines; A. M. Honsberger, of Jordan, and Murray Pettit, of Winona. Some of the members thought that the day of the company's usefulness in taking the place of commission merchants has passed and advised that the fruits be purchased in the orchard or at the railway station, and shipped on quotation to regular agents or dealers.

The leading orchardists of Belleville District, after hearing A. E. Sherrington, of Walkerton, and P. J. Carey, of Toronto, explain the benefits to be derived from cooperative assns., at a meeting held on March 16, for the purpose of organizing, formed a strong organization and will handle the crop through this assn. this year.

On March 8, the Fruit Division, Department of Agriculture, received word of the following convictions under the Fruit Marks Act: John Coyle and Robert Coyle, jr., of Colborne, pleaded guilty to falsely marking 19 bbls. of apples "No. 1," the apples being inferior to that grade. They were fined \$1 a bbl. and costs. Robert Coyle, jr., also pleaded guilty as packer of these apples and was fined \$5 and costs. This is the fifth time that members of the firm of J. & R. Coyle have been convicted under the Fruit Marks Act.

The following resolution was passed at a meeting held March 15, at Belleville: "Moved by F. S. Wallbridge and seconded by Henry Leavers that we, the members of the Belleville District Fruit Growers' Assn. desire to express our

conviction that it is in the best interests of the Fruit Industry of Canada that the industry should be placed under a Fruit Commissioner instead of, as at present, under the Dairy Commissioner, as the Fruit Industry is of sufficient importance to have a Commissioner of its own."

Mr. T. Delworth, of Weston, has been endeavoring lately to form branches of the Ont. Vegetable Growers' Assn. at Napanee, Kingston and Ottawa. It is expected strong assns. will be formed at each point. Branches are likely to be formed shortly at London and Strathroy.

FARTHER NORTH. "It is the lightest and strongest house imaginable."
HALL & ROBINSON,
Montreal, P. Q.

NORTH. The lightest and most perfect greenhouse construction yet attempted. Best crop of beauties I ever had.
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EAST.
"So well pleased with all points, we intend to build more of them."
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"Lightest house on the place, strong as a bridge."
W. J. PALMER & SON,
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FAR WEST.
"After making a trip East to see all constructions am ordering yours. Best in every way."
C. H. HOPKINS,
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Permanent structures best and cheapest to build, Ventilating, heating and all other accessories for greenhouse equipment.

For catalogues and particulars apply to

The King Construction Co.
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"They are perfect in every way."
C. F. MALER,
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THE BURPEE QUALITY
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Burpee's Seeds

cost but little more than do usual commercial grades - and yet are worth much more. At our own farms in Pennsylvania and New Jersey, as well as in the gardens of planters everywhere, Burpee's Seeds are proved by test to be the BEST SEEDS THAT GROW. Consequently we hold the largest mail-order seed trade in the world. Our "Silent Salesman," neatly dressed in a "coat of many colors," and telling the plain truth, with photographic pictures of the superior products of BURPEE'S "SEEDS THAT GROW," will be mailed FREE—if You will write for

1876

1906

Farm Annual for 1906

Thirtieth Anniversary Edition of "The Leading American Seed Catalogue."

This is a handsome book of 168 pages, carefully edited and neatly printed; bound in cover lithographed in nine colors, it shows, painted from nature, Seven Superb Specialties in Vegetables of unequalled merit and Six Novelties in Flowers—including LUTHER BURBANK'S *New Floral Wonder*.

This Invitation to write for our New Complete Catalogue and then participate in the Special Celebration of our Thirtieth Anniversary is given to all planters who delight in raising the Choicest Vegetables or most Beautiful Flowers.

If you intend to garden this spring you will want to lay your plans, and therefore we urge you to **WRITE TO-DAY!**—the very day you read this advertisement. Mention this paper and address

W. ATLEE BURPEE & CO., Seed Growers, Philadelphia, Pa.

A Handsome Premium will be Given Free to all Readers who buy Goods from Advertisers.

Strawberry Plants

I have a fine stock of Plants for Spring planting at reasonable prices

WILLIAMS—The standard variety in the Niagara district.

SENATOR DUNLOP—Recommended as an excellent all round market berry.

RYCKMAN—Pan American Gold Medal.

MATILDA—Introduced by Mr. A. M. Smith, the veteran strawberry grower, very large, productive, vigorous plant maker.

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"THE CARLETON FRUIT FARM"

50,000 GIANT PANSIES

Selected German and American strains, 35c. per dozen, 4 dozen \$1.00. Special Prices for Larger Quantities. Also **DAISIES** and **FORGET-ME-NOTS**, 40c. per dozen. Orders Booked Now.

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Detailed plans prepared for laying parks, pleasure grounds, lawns, gardens, cemeteries, school and hospital yards. Advice given and planting lists for grouping of trees and shrubs. Terms moderate.

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GOOD QUALITY, FLAT, EVEN THICKNESS AND WELL CUT

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MIRROR PLATE
WIRE GLASS
PRISMATIC GLASS

And all other kinds of Glass used for building purposes

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VANCOUVER WINNIPEG

Yes, It Pays to Buy the Best

This applies to Nursery Stock as well as other things. ¶ If you intend planting any Fruit or Ornamental Trees, Shrubs or Vines, send for our 1906 Catalogue—just out.

THE DOMINION NURSERIES

ESTABLISHED 1860

The Smith & Reed Co. St. Catharines, Ont.

ANNOUNCEMENT.—For the purpose of demonstrating the ability of "Target Brand Scale Destroyer" to kill San Jose Scale and yet do no damage to trees, I will furnish 2 gals. (enough for one 32 gal. bbl. of solution) f.o.b., Jordan Station, gratis to a limited number of applicants throughout Canada. I desire to have these tests made on infested trees not included in an area larger than can be thoroughly covered with one bbl. of mixture—want no other infested trees near by. Would be pleased to receive information regarding such spots from those who have sufficient interest in the extermination of this pest to see that these applications are made as instructed. Guaranteed to do no damage to trees. Kills 99 per cent. of scale. "Target Brand Arsenate of Lead" beats all in extermination of codling moth and other insects, and remains in suspension, and stays on. W. H. Brand, Jordan Station, Ont., Canadian Distributor.

FACTORY IN CANADA.—The Niagara Gas Sprayer Co. has made extensive sales in Canada during the past few years and has decided to establish a factory near St. Catharines to supply their Canadian customers. The factory at Middleport, N.Y., recently has been running night and day. A carload of machines has been shipped to Portland, Oregon, and some of these will be forwarded to British Columbia. The Ont. Government has purchased one for experimental work. About 20 of the machines in use in Canada have been taken back to the factory and equipped with new fittings and made equal to the 1906 machines.

THIRTY-SIXTH CATALOG.—The 1906 seed catalog issued by Wm. Ewing & Co., of Montreal, contains a full list of the leading varieties of seeds, plants, and bulbs used by florists, gardeners and farmers, as well as tools and other sundries handled by seedsmen. Directions for growing the various garden crops, for making hot beds and other valuable information is given. Every gardener and flower lover should secure a copy. The special collections offered are particularly good value for the money.

IT BROUGHT RESULTS.—Mr. W. H. Bunting, of St. Catharines, wrote us recently as follows: "Kindly withdraw my advertisement of the Gold Coin Potato, as I am all sold out. Orders came in with a rush a few days after the March number of THE HORTICULTURIST was out. I received many enquiries for my strawberry plants also. You may continue my strawberry advertisement. I consider THE HORTICULTURIST an excellent medium for reaching the best class of buyers."

LARGE PURCHASES.—Recognizing the desirable qualities of the crimson red canna, Mrs. Wm. F. Kasting, listed by Wm. F. Kasting, of Buffalo, Park Commissioner Chambers of Toronto has secured a large quantity for use in Toronto parks this season. This brilliant canna stands almost 4 ft. high, and is very prolific. Florists prize it highly for conservatory decorations. At the World's Fair in 1904 it was awarded a gold medal.

THOSE DESIRING GRAPE VINES and currant bushes will find the stock supplied by Mr. Joseph Tweddle, of Fruitland, gives entire satisfaction. Mr. Tweddle has grown stock for some of the leading nurserymen for 28 years.

Reports from the leading nurseries in the Niagara district indicate that the stock has wintered well. The Pelham Nursery Company intimate that never in the history of their business have the season's prospects been better than this year. Their agent reports very satisfactory sales from all districts, and their stock is in the very best condition.

Classified Advertisements

Advertisements under this heading will be inserted at the rate of ten cents per line, each insertion; minimum charge fifty cents in advance.

LANDSCAPE GARDENING, PLANS FOR PARKS, cemeteries, public and private pleasure grounds made. Drawings made to a scale, so that any gardener may carry them out. Correspondence solicited. **CHAS. ERNEST WOOLVERTON, Landscape Designer, GRIMSBY.**

WANTED—Persons to grow Mushrooms for us in waste spaces or barns, in gardens, orchards or small farms. \$15 to \$25 per week. Send stamp for sixteen-page illustrated booklet on Mushroom Culture and full particulars. **MONTREAL SUPPLY CO., MONTREAL.**

FOR SALE—Old established tree nursery. Large connection and profits. Easy terms. Best sandy loam. Apply **THOMPSON, 17 Queen St., St. Catharines.** Also profitable fruit farms for sale on easy terms.

CHANCE OF A LIFETIME—Well-established Florist business. Greenhouses, House and Stable, for sale cheap. Apply 25 Triller Ave., Toronto.

OVER TEN MILLION GRAPE VINES

Are annually propagated at Fredonia, N.Y. The soil and climate here are such that better vines are produced than anywhere else, and at less expense. I will mail two sample Vines for 10c. and an interesting and instructive pamphlet (B) free.

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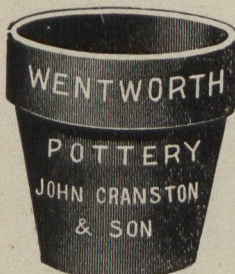
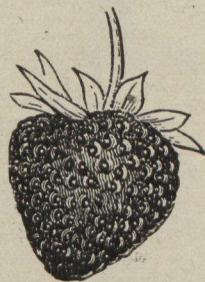
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SPECIAL OFFER—60 early and 60 late plants sent post-paid to any address for \$1.00.

Attractive prices on thousand lots of Haverland, Parker, Earl, and Williams. **TERMS** cash with order.

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

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Drop us a post card for Catalogue and Price List.

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Baby Rambler
In bloom all summer

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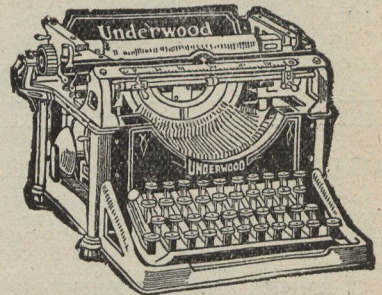
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CENTRAL NURSERY, ST. CATHARINES, ONT.

Northern Grown Trees

Apple, Pear, Plum, Cherry, Peach, Nut and Ornamental Trees. Small Fruits, Roses, Shrubs, cheap. Specialties: Wismer's Dessert Apple and Mammoth Prolific Dewberry.
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NURSERYMAN
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AND STENCILS
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More Underwood Typewriters are in use in Canada than all other makes Combined.

We carry a large stock of rebuilt typewriters at very low prices. Send for Catalogue and List.

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Represent the survival of the fittest. We have become the largest seed house in the world because our seeds are better than others. Do you wish to grow the most beautiful flowers and the finest vegetables? Plant the best seeds—Ferry's.

1906 Seed Annual free to all applicants.

D. M. FERRY & CO.,
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We are Headquarters for all kinds of Splint Baskets

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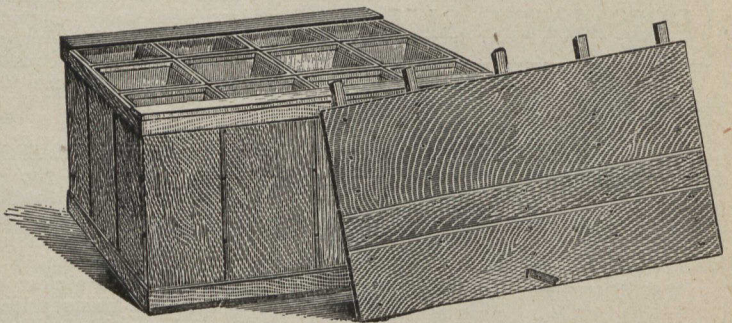
supplied for the protection of trees from mice during winter

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A Specialty

SEND FOR OUR PRICES

THE OAKVILLE BASKET CO.
OAKVILLE, ONTARIO



Best for Butter

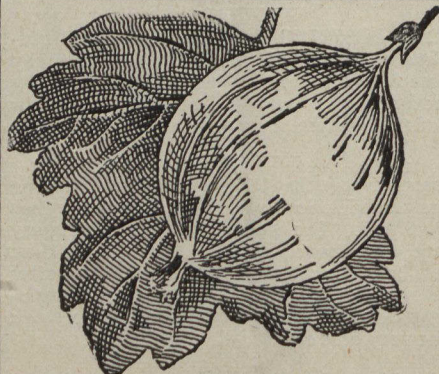
Windsor Salt will make money for you in two ways.

It makes better butter—richer, tastier. As it dissolves quickly, and works in easily and evenly.

It cuts down your salt bills, because it is absolutely pure, and requires LESS to properly season the butter.

The first trial will prove this. Your dealer has Windsor Salt or will get it for you.

Windsor SALT



Small Fruit Plants

Gooseberry, Red, White—Currants, Red White, Black—Raspberry, Red, Yellow—Blackberries—Strawberry-Raspberry—Grapevines, Campbell's Early, Eaton, Worden, Moore's Early, [Salem, etc, all hardy sorts—Strawberry Plants—House Plants—Roses—Rhubarb and Asparagus Roots—Order early.

WM. FLEMING
NURSERYMAN

P.O. Box 54 OWEN SOUND, ONT.

New Crimson Red Canna

DID YOU SEE EXHIBITED AT ST. LOUIS THE
NEW CRIMSON RED CANNA



Mrs. Wm. F. Kasting?

Height, 3½ feet. Most brilliant in color, most prolific of all Red Cannas. Blooms all the time, and is exceptionally fine for conservatory decorations. You will need it in your business. Awarded, on its merits, a GOLD MEDAL at the World's Fair, 1904.

West Seneca, N.Y., U. S. A., Sept. 15, 1904.

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Respectfully, JOHN F. COWELL.

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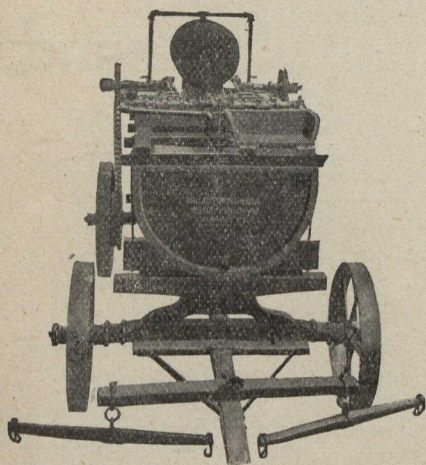
\$15.00 per Hundred

\$100.00 per Thousand

Delivery now up to April

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"DUPLEX" referred to in letters from Capt. Roberts and Col. Ptolemy in Feb. issue.

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POWER COSTS NOTHING AND IS ALWAYS READY

EXTRACTS FROM LATEST LETTERS

"In no respect has my Wallace Sprayer (a Standard) ever failed me when I went according to instructions, neither has it cost me any time or cash. I have always found that it would do what it was represented to be capable of doing."—CECIL C. PETTIT, Fruitland, Ontario, 12th March, 1906.

"The machine has never failed to hold out when standing at a tree; we have never had any difficulty in pumping all the liquid required, although sometimes we have sprayed trees planted 18 x 18 feet, branches interlaced, and our machine is only a Standard. It has never failed to give the pressure claimed for it, in fact we find very little difficulty in maintaining a pressure of 100 pounds and over, and have had it up to 160. This machine has given us excellent satisfaction."—R. JACK & SONS, Chateauguay Basin, Que., 12th March, 1906.

"I have used a Wallace Power Sprayer (Standard) on 1,100 apple trees out about 35 years, planted 30 ft. apart, tops touching in places, and could always spray a tree with plenty of pressure left. Sometimes I have sprayed as many as three trees without putting the pump in gear. I have not lost either time or cash through any failure of machine; have had it up to 200 pounds but generally run at from 80 to 125 pounds pressure. I use eight nozzles."—J. B. TWEEDLE, Kilbride, Ont., 12 Mar. '06

"We are perfectly satisfied with your machine and expect to purchase one of your larger sized Juniors as soon as you have them on the market, as we have not seen a better."—J. W. SMITH & SONS, Winona, Ont., 13th March, 1906.

"After thoroughly examining all the traction power machines on the market, I was convinced that in your Duplex you have the most powerful Power Sprayer manufactured. We have some very large trees on our place, possibly 50 years old, and the Duplex sprays them to perfection, holding the power sufficiently to wet them all over. Before we tried the Duplex, we were dubious about its holding the power and supplying enough liquid in simply driving from tree to tree; however, we are glad to say with the two powerful pumps on the Duplex the pressure climbs very fast and it is with great ease that a pressure of 120 to 190 pounds can be maintained, which forces the fluid out in a fine, mist-like spray, covering leaves and limbs in a very short time. We recommend Wallace Power Sprayers to everyone who is looking for a machine that will do the work for which they are intended, in the quickest and most economical manner and still have plenty of pressure to fall back upon."—C. L. WÜNDT, Burlington, Iowa, 14th February, 1906.

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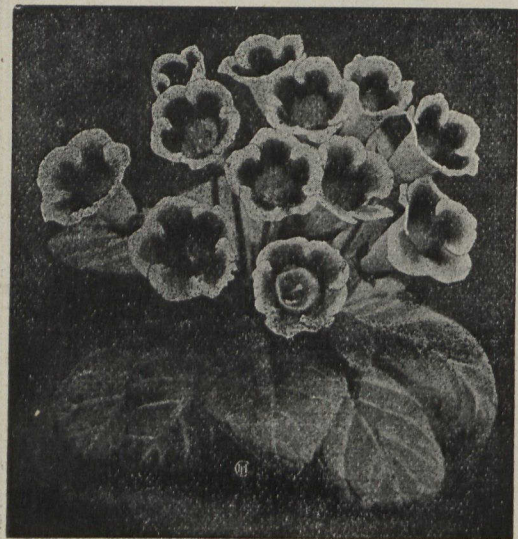
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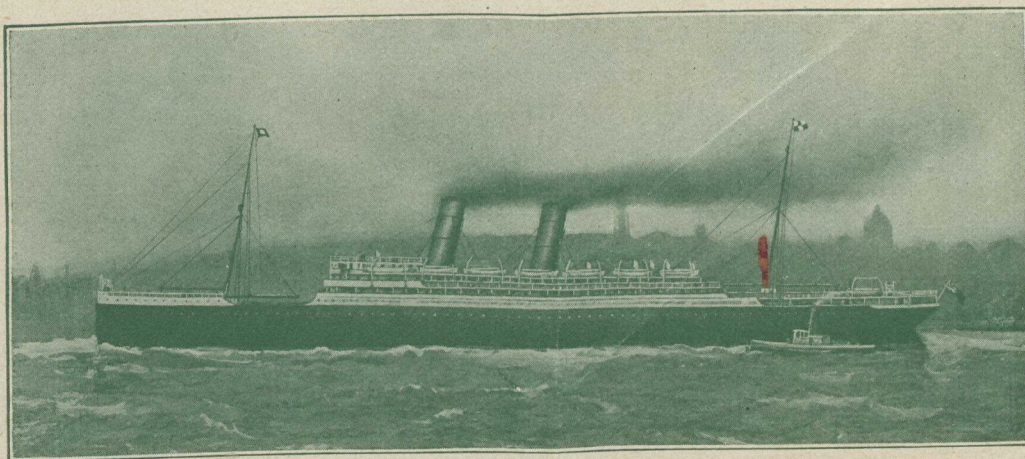
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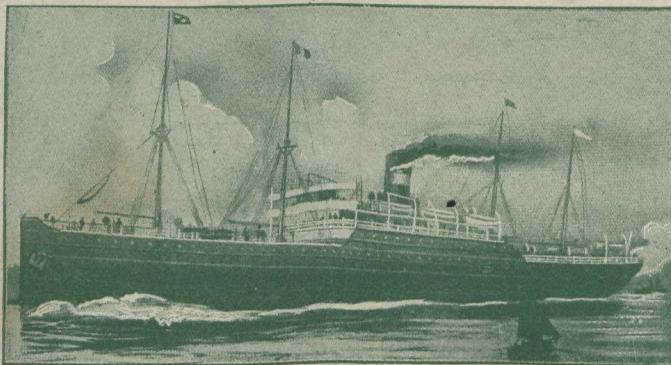
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