

Annual report of the Fruit Growers'
Association of Ontario
1921

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Ontario Department of Agriculture

FIFTY-THIRD ANNUAL REPORT

OF THE

Fruit Growers' Association

OF

ONTARIO

1921

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO



TORONTO:
Printed by CLARKSON W. JAMES, Printer to the King's Most Excellent Majesty
1922

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Printed by
THE RYERSON PRESS
TORONTO



To His Honour HENRY COCKSHUTT,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to present herewith for your consideration the Sixty-Second Report of the Fruit Growers' Association of Ontario for the year 1921.

Respectfully yours,

MANNING W. DOHERTY,

Minister of Agriculture.

Toronto, 1922.

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OFFICERS FOR 1922

President.....W. J. BRAGG, Bowmanville.
Vice-President.....PAUL FISHER, Burlington.
Secretary-Treasurer.....P. W. HODGETTS, Parliament Buildings, Toronto.
Executive Committee.....OFFICERS together with J. F. ELLIOTT, Oxford Centre,
and W. C. NICKERSON, St. Catharines.

DIRECTORS.

DIV. 1. B. H. DANGERFIELD, Kemptville.	DIV. 9. W. J. SCHUYLER, Simcoe.
2. HAROLD JONES, Prescott.	10. JOHN CLARKE, Forest.
3. R. W. IRELAND, Wellington.	11. T. J. SALKELD, Lucknow.
4. A. A. COLVILL, Newcastle.	12. J. F. ELLIOTT, Oxford Centre.
5. W. J. BRAGG, Bowmanville.	13. W. L. HAMILTON, Collingwood.
6. PAUL A. FISHER, Burlington.	O.A.C., PROF. J. W. CROW, Guelph.
7. DAVID ALLAN, Grimsby.	H.E.S., E. F. PALMER, Vineland Station.
8. W. C. NICKERSON, St. Catharines.	C.E.F., W. T. MACOUN, Ottawa.

REPRESENTATIVES TO FAIR BOARDS AND CONVENTIONS.

Canadian National: W. F. W. FISHER, Burlington.
London: J. C. HARRIS, Ingersoll, and A. SABLER, Lambeth.
Ottawa: W. T. MACOUN, Ottawa.

COMMITTEES.

Horticultural Publishing Company: P. W. HODGETTS, Toronto.

New Fruits: W. T. MACOUN, Ottawa; PROF. J. W. CROW, Guelph; E. F. PALMER,
Vineland Station.

Historical: A. W. PEART, Burlington; W. T. MACOUN, Ottawa.

Transportation: W. H. BUNTING, St. Catharines; D. CARPENTER, Grimsby; JAS. E.
JOHNSON, Simcoe; W. A. SHOOK, Clarkson; T. FOSTER, Burlington; M. C.
SMITH, Burlington.

TREASURER'S REPORT, 1921

RECEIPTS.		EXPENDITURES.	
Balance on hand, Dec. 31, 1920	\$2,213 47	Annual Meeting	\$ 179 14
Membership Fees	94 00	Committee Meetings	395 81
Interest	36 30	Printing	22 96
Imperial Fruit Show	373 15	Horticultural Pub. Co.	77 60
Grant	1,700 00	Imperial Fruit Show	1,374 92
		Miscellaneous	143 59
		<i>Balance on Hand</i>	2,222 90
	<u>\$4,416 92</u>		<u>\$4,416 92</u>

DETAILS OF EXPENDITURES.

ANNUAL MEETING.

Prince George Hotel, Rent Convention Room	\$50 00	
F. C. Keeler, Delegate, expenses	14 50	
A. W. Peart, "	3 40	
A. K. Sadler, "	7 95	
Wm. England, "	7 95	
David Allan, "	12 55	
M. E. Coe, Reporting Convention	60 00	
N. R. Peet, Speaker	22 79	
		<u>\$179 14</u>

VARIOUS COMMITTEES.

Niagara Peninsula F.G.A., Delegate expenses	\$166 24	
H. Sirett, expenses	16 10	
B. F. Kerr, "	8 00	
David Allan, "	31 80	
W. A. Shook, "	56 25	
A. A. Craise, "	6 95	
F. C. Keeler, "	14 35	
W. H. Bunting, "	70 82	
R. W. Ireland, "	25 30	
		<u>\$395 81</u>

PRINTING.

College Press—Programmes	22 96
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PERIODICALS.

Horticultural Publishing Co.—Membership subscriptions	77 60
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IMPERIAL FRUIT SHOW:—

Fruit Bought—C. W. Challand	160 00
H. C. Breckon	235 50
Smith Bros.	30 00
Harry Ryrie	154 50
J. J. Gilbertson	84 00
W. N. Langell	51 00
Entry fees	49 50
Express charges	610 42

1,374 92

MISCELLANEOUS.

Exchange, interest, etc.	\$1 59
Auditor	10 00
Insurance—Treasurer's Bond	10 00
Special Grant—N. & D. Assn.	50 00
Clerical Help	72 00

143 59

Total \$2,194 02

Fruit Growers' Association of Ontario

ANNUAL CONVENTION

The Ontario Fruit Growers' Convention was held in The Prince George Hotel, Toronto, February 7th and 8th, 1922. MR. DAVID ALLAN, President, in the Chair.

PRESIDENT'S ADDRESS.

DAVID ALLAN, GRIMSBY.

Having had the honour of being elected by my Colleagues as President for a second term, I am therefore permitted to welcome you to this, the Sixty-second Annual Convention of the Ontario Fruit Growers' Association.

When we reflect on the honest endeavour of our Organization to advance the interests of fruit growing for a period of over sixty years, with a record of as many successful Conventions, we must admit that the Society has proven its worth to a very great extent.

To the founders of this Society—many of whom have passed to the Great Beyond—we owe a deep debt of gratitude, for having laid the foundation of our Association strong and deep, thus assuring its permanency for all these years, and the consequent benefits resulting therefrom.

Another year, with its responsibilities and opportunities, is past and gone. Coming as it did in the very centre of the re-adjustment period, we are of the opinion, that we should be very well satisfied with the results, considering the fact that 1921 will go down as an off year in fruit, especially in tree fruits.

I am firmly of the opinion that our industry is holding its own during this unsettled time, and its condition compares favorably with any of the great Canadian industries. It behooves us however, to stand fast and with optimism and industry, "Carry On," thus assuring the future greatness of our business.

We regret that owing to the new Arena not being completed in time, our Exhibition, in conjunction with other Societies, had to be cancelled. While we believe that we would have had a creditable show, we look forward with confidence to 1922, when, with a bigger crop to select from, we will be able to put up a show well worthy of the best traditions of the Province.

Your Directors, however, deemed it wise to make an Exhibit at the Imperial Fruit Show, held in the Crystal Palace, London, England, from the Twenty-eighth of October to the Fifth of November, 1921. While our growers generally readily responded to our request for exhibits, we think that special mention should be made of the twenty boxes of Kings from H. C. Brecken, Bronte; twenty boxes of Spies from Chas. Challand, Simcoe; and six boxes of Jonathans from W. M. Langell, Point Pelee. It is needless to say we were very gratified with the results, securing, as we did, four Firsts and five Seconds, together with the Silver Cup for highest aggregate of points in fourteen classes. But since this will be dealt with during our meeting, I leave the subject now by stating that we believe immense value, from an advertising standpoint, will be obtained as a result of this Exhibit.

In closing I desire to thank everyone for their co-operation and support.

THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

P. W. HODGETTS, TORONTO.

The organization meeting of this Association was held in Hamilton in the Old Mechanics' Hall on January 19, 1859, at which there were eighteen present. The Association was continued for several years without incorporation. Its first President, Judge Campbell, of Niagara-on-the-Lake, died soon after the organization was effected, and as he was one of the leaders it gave the Association quite a blow. In 1861 they held their next meeting, and elected officers, and since that time the Association has not missed a year in its history when it has not held one or more meetings of different kinds.

The Association was incorporated in 1869 by a special act of the Legislature, as the Fruit Growers' Association of Ontario; previous to that time it was known as The Fruit Growers' Association of Upper Canada. The first report was published the same year, 1869, although previous to that time the Association had printed a list of fruits that were recommended for planting in the Province. The aims of the Association were, briefly, "the advancement of the science and art of fruit culture, by holding meetings for the exhibition of fruit and for discussion of all questions relative to fruit culture, by collecting, arranging and disseminating information, and by such other means as might from time to time seem advisable."

The methods employed by the officers from that time on up to the present in carrying out this programme, were many and varied, but generally successful. Among those that they carried out were the following: In the early days they held generally three meetings of the Association, Summer, Fall and Winter meetings, at different points throughout the Province, and in that way they covered in their history practically every town and city of any size in Ontario.

Secondly, they collected information on varieties of all fruits, and published lists from time to time, so that men who were starting in the industry would have information available to guide them in planting out their orchards. This was very useful information indeed. There were some rather strange things done in that connection. The Association had then, as it has now, a New Fruits Committee, to which new fruits were submitted for examination and approval, or otherwise. In going over the fruits I found the Ontario and McIntosh were both mentioned as comparatively new varieties, and the report of the Committee on the two varieties was somewhat to this effect: The Ontario was a fine, crisp apple of good color and size, and, living up to its reputation, would undoubtedly take the place of a good many of our varieties for our foreign markets. The McIntosh was said to be practically a perfect apple as far as color and size was concerned, but with a peculiar flavor, and the Committee thought in their opinion it should not be placed higher than third class. Now, you know the subsequent history of the two varieties. If we could have planted out the McIntosh in the place of the thousands of trees of Ontario that were planted at that time, we probably would have had quite a different story to tell as to winter injury, western competition etc. The McIntosh even yet, is not forming very much of the bulk of Ontario apples, despite the fact that it originated here, and has proven to be one of the most successful on the American Continent.

Third. Offering prizes for the best essays on Fruit Culture, to be printed in the annual reports.

Fourth. Offering prizes for new fruits. Prizes of \$50, \$40, and \$30 were offered for a number of years.

Fifth. Sending out for trial all new and promising fruits including the following: Ontario, Wealthy, Pomme Grise, Grimes Golden, apples; Niagara and Salem grapes; Glass Seedling and McLaughlin plums; Clapps Favorite, Anjou and Clairgeau pears; Downing gooseberry.

Sixth. Starting the experimental orchards at the O.A.C., Guelph, 1880, and the variety test stations in 1894, continued for a long period at fourteen points in the Province, followed by the larger and permanent experiment station at Vineland in 1907. The original orchards at Guelph were planted by this Association, and a special Committee looked after them for a number of years. Following that, variety stations were started in 1894, and filled a very useful place, testing out for ten or fifteen years all of the varieties which are now being grown in the Province. This was followed at a later date by an agitation from this Association for the instituting of an Experimental Farm at Vineland, and this Association had the appointment of the Board.

Seventh. Continued movement for years for improved transportation for our fruit products. Later on in the history of the Association we studied more the commercial end of the industry, and for a number of years carried on an agitation for lowering of the rates then existing for freight and express, and to try to get better and improved service.

Eighth. Employment of a permanent transportation expert until such work was transferred to the Federal Government. Mr. McIntosh, who is now engaged with the Dominion Department, was employed by our Association and went from us to the Department at Ottawa.

Ninth. Passing of Legislation for the creating of uniform packages and grades throughout the Dominion. This Association was largely instrumental in the passing of the old Act for the grading of apples, which has been improved to form the present Inspection and Sales Act.

Tenth. The holding of a special apple show for fourteen years as a means of advertising our Ontario fruit.

Eleventh. One of the objects of the Association was to disseminate the information we were gathering from such meetings as this. With that in view we established and carried on for a great many years the *Canadian Horticulturist*. It was afterwards turned over to a Stock Company.

Since the date of the incorporation, the Association has been served by four Secretaries: D. W. Beadle, 1868-1885; L. Woolverton, 1886-1901; G. C. Creelman, 1902-3; P. W. Hodgetts, 1904-22. In addition Mr. Beadle served for five years previous to incorporation. Thirty prominent members of the Association have occupied the President's chair, of whom ten are still actively engaged in the fruit business in Ontario. The original board of directors consisted of nine members, this number being altered from time to time, and now standing at fifteen with an executive committee of five. Each director has a number of counties to look after, so as to cover all parts of the province.

I want to call attention to the suggestions in reference to the change in constitution. I believe there is a feeling amongst the members of the Association that it would be better to make certain changes so as to keep the Association up-to-date and prevent it retrograding in any way. I will read over the suggestions and you may perhaps do with them as you have done with the suggestions in regard to the National Horticultural Council.

1. That the directors would be elected by and from the various local and district associations, instead of being chosen from the different districts. According to our present constitution the Province is divided into thirteen horticultural divisions starting from Ottawa and running to Windsor, and a director to represent each of these is elected here. We propose that we do not elect these directors, but that the local associations elect them to the Ontario Association. At the present time there are some thirty-nine local associations of different kinds in the Province. As a matter of fact that number should be increased, because there are none of the educational associations in the list I have here; these are purely co-operative associations. These would each send a director to form the Provincial Association.

2. The membership would be composed of the members of such organizations by payment of a nominal fee by each association.

The matter of raising funds, of course, is always a serious one with any of these associations, particularly of an educational nature. The suggestion is that the local association should pay a nominal fee to the Provincial body. We have that regulation now in reference to some associations. We have changed it once or twice, but it is still not very satisfactory.

3. The annual meeting should be purely a business meeting devoted to such matters as legislation, transportation, grades, packages, markets, national advertising, provincial and national exhibitions, etc. That is something after the style of the conferences Mr. Baxter holds at Ottawa from time to time, and which are devoted practically to such matters as they think are purely business, and the men who would go from these different local packing associations and educational associations in the province would be the best men to discuss matters of that kind.

4. District meetings should have the backing and co-operation of the Provincial Association, and should be sufficient in number and location to cover every year the various fruit sections of the Province. Summer meetings and excursions through the fruit districts are well worth trying out in Ontario. My idea would be that if the Northumberland and Durham Association was holding a convention or exhibition, the Ontario Association should join with them, and if necessary pay part of the expense in providing an excellent programme with the very best speakers possible, and having the directors of the Ontario Association who are within the immediate vicinity take an active part in the association meeting. Then where there are no organizations in a district, an organization might be formed such as we have in the Niagara Peninsula and the Northumberland and Durham section.

5. The Secretary of the Association should preferably be one outside of the Department of Agriculture, and the funds of the Association should not be so dependent on the grant from the same source. Such a course as outlined would, I believe, make for a more independent and vigorous future. This of course is quite a radical change from the present plan. Your Secretary is an official of the Ontario Department of Agriculture, and a large part of the funds of the association come from the Provincial Government. I do not think that is the right policy to follow in a provincial association of this kind. The association itself would be more independent if it had a Secretary that could say certain things which I might not be able to say because I am an official of the department. Then I think the Association will undoubtedly become more and more

commercial as the fruit industry of the province increases. Certain things that have happened in connection with our Clarkson Association show that we should be able to get together in reference to our purchasing of supplies. We know the prices being paid, as Mr. Sirett said, by the different associations in all parts of the province are not uniform, and thousands and thousands of dollars could be saved if there was some way of getting together on these different lines. The Association might start with spray materials in the spring and so on right through the list. If the Association was independent entirely of the government it would be possible for this to be done.

As far as the grant is concerned I think if the grant from the Provincial Government was large enough to warrant the Association employing an outside Secretary he would not need to be employed the year round; of course, while the work is heavy at periods it would not be heavy when a man would be busy on his farm, and I think it would be possible to secure the services of a good live man who is actively engaged in fruit growing and yet give the necessary time to the Association to do a great deal of work, and it could be done better than under the present arrangement.

6. If thought desirable, the Government departments and Experiment Stations could have representation on the Board of Directors, though as Government officials are always at the service of the Association when advice is needed, such representation is not essential. At the present time Mr. Palmer and Prof. Crow are directors on the Association Board by virtue of their positions, and Mr. Macoun, our efficient Dominion Horticulturist is our representative from number one district. We have always had a very great deal of very valuable help from these men on the Board and this can be continued as at present by allotting a certain number of directors to represent these colleges and stations, and the Dominion Department if necessary. But I think it would be better for everybody if the departments and experimental stations were cut off entirely from the actual directorate officering of the Association. These men are always available just the same as Mr. Caesar or Mr. Ross or any of the men of the department are always available at the call of the directors or the members of the Association for help. I would suggest that the original plan which I have outlined; of having the directorate come entirely from the local and district associations, be followed so that we would have an independent Association, which if necessary could go to the government and seek legislation or say anything they liked and the Minister could not say, as he intimated to me when we were talking about our fruit show, "This is a departmental affair; the Provincial Department of Agriculture is running that show; the Association has not very much to do with it." I would like to see that idea removed from the Provincial Minister's and the Dominion Minister's thoughts, and the Association to be absolutely independent to say and do as it pleases. These are my suggestions, after eighteen years' experience as Secretary of this Association and you can do with them as you please.

COMMITTEE TO DEAL WITH MR. HODGETTS' SUGGESTION

Mr. W. F. W. Fisher, Mr. Fred Watson, Mr. Harry Ryrie, Mr. R. W. Grierson, Mr. Harry Sirett, Mr. W. L. Hamilton.

REPORT OF COMMITTEE ON CONSTITUTION.

Your Committee would recommend that the incoming Board of Directors revise the mode of appointing directors so as to include more direct representation by the leading fruit districts, still leaving representation to those sections that are not at the present time vitally interested in fruit growing. We approve of the suggestion that the Provincial Association assist the holding of district meetings, or co-operating with local associations, and that the annual meetings should be largely business meetings, not altogether cutting out cultural topics. That no action be taken at the present time in respect to suggestions re secretary and grant.

That the C.E.F. be given representation on Board, similar to O.A.C. and the Vineland Station.

The adoption of the above report was moved by W. F. W. Fisher, seconded by Mr. Hamilton, and carried.

THE NIAGARA PENINSULA FRUIT GROWERS' ASSOCIATION.

W. H. BUNTING, ST. CATHARINES.

I am very glad to be again at the Annual Convention of the Ontario Fruit Growers' Association. This is the thirty-first Convention I have had the pleasure of attending, with only one break in all that time. And I have always looked forward to this Annual Provincial Convention.

Our Association is a child in comparison to the Provincial Association. The Niagara Peninsula Fruit Growers' Association held its first meeting in November of 1896. The primary object in the organization of the Association, was to bring together the various local associations throughout the Niagara Peninsula, crystalize and organize them in such a way that they might be in a position to do effective work, which could not be done by the local bodies. I had better differentiate between another Society of somewhat similar name and ours; it is a very much younger, but more lusty child, and is known as the Niagara Peninsula Growers, Limited. It is a commercial company, formed only a year ago under the ægis of the Department of Agriculture, and supported by our present Minister of Agriculture, the Hon. Manning Doherty. In the past year it has proved that it has filled a very important place in the commercial life of the Niagara Peninsula. The Niagara Peninsula Fruit Growers' Association was formed on somewhat different lines to the Ontario Fruit Growers' Association. As Mr. Hodgetts has stated the aims and objects of that Association were to disseminate Horticultural education throughout the Province, which at the time of this organization was very limited, and to arrange and provide facilities for an increase in fruit production throughout the Province of Ontario.

For twenty-five or thirty years that Association's efforts were very successful, and until 1895 or 1896 we were producing in many sections of Ontario, more fruit than could be properly handled to advantage; there were no distributing channels for it, and there were very often very serious periods of stagnation and glut. There was a change of Government about that time, the late Sir Wilfred Laurier came into power. There was a feeling there might be a serious change in legislation that would still further affect the fruit industry, which at that time was not in a very prosperous condition. Consequently, one of

the very first efforts of the new organization was to secure legislation of such a character that would be favourable to the further prosperity of the fruit industry, not only of the Niagara Peninsula, but of the entire Province, and the Dominion of Canada. At that time they appeared before the tariff commission that was sent throughout the country, and in other efforts they made they were very successfully headed by the late Minister of Agriculture, the Hon. Martin Burrell, who was, at that time, a fruit grower in the vicinity of St. Catharines. That was the first concerted effort of the Niagara Peninsula Fruit Growers Association that did executive work for the fruit growers of the Province.

Shortly after that it was discovered a very serious pest had entered our fruit growing districts, the San Jose Scale. I brought over with me a few photographs, and I have two in connection with that particular matter, which I think will be of historic interest. I have one photo taken by the late Prof. John Craig, near the town of Niagara-on-the-Lake, of the farm where San Jose Scale was first discovered. Amongst others present at that time were the late Prof. Fletcher, Prof. Panton from Guelph, Mr. Lyons, Mr. Wolverton, Secretary of this Association, and a number of other gentlemen who were very prominent in connection with fruit growing not only in this province, but the Dominion of Canada. At that meeting, held under a magnificent oak tree on this farm, the first resolutions were passed in connection with legislation to endeavour to eradicate the San Jose Scale from this country, and the gentlemen who were present were very active all through the whole course of the anxious years that passed from 1897 to 1902 or 1903, until we were able to secure such remedies as were thought satisfactory, and were able to overcome the serious menace of this pest. As you know, we no longer dread that insect. Those who were in the thick of the fight consider it was a blessing in disguise, because it compelled us to inaugurate better methods, more thorough spraying operations and to take better care of our orchards in general, and consequently put the industry on a better footing in many respects. One of our chief inspectors at that time was so thoroughly enthused about the necessity of destroying this pest that he contemplated that it might be necessary to destroy every fruit tree on the peninsula. We were very glad to find remedies that in the course of a few years obviated that necessity.

One of the first resolutions passed in connection with the appointment of the present body of Railway Commissioners was moved and carried by our Association in 1899. That commission, as you know, was appointed in 1904, and the Ontario Fruit Growers' Association in conjunction with our Association sent representations to that Board and were successful in presenting to it such facts and data as secured very material reduction in the rates of transportation of fruit, not only from the eastern provinces but more particularly from the west, which at that time had not been able to receive any quantity of fruit from the Province of Ontario. Almost immediately following our appearance before the Railway Commission in July 1904, experimental cars began to move to the west and the opening up of that country for the fruits of Ontario was made possible and successful. From that time until the present our fruits have been passing out to the west in increasing quantities. I understand that in the last two years conditions have not been very bright for Ontario fruit in the west. Our British Columbia friends have to a large extent captured a portion of that market from us, due to the fact that we have not been able to keep up the reputation

that was secured. One of the things the Ontario Fruit Growers' Association and all other districts organizations in the province should endeavour to do is to regain, secure and hold that very important and extensive market.

In 1901 the Niagara Peninsula Association in conjunction with the Ontario Fruit Growers' Association was very active in looking after the fruit interests of the Province of Ontario at the Pan-American Exposition in Buffalo. As a result of our efforts there, very great advertising for this province was obtained and very many important awards of merit were received, not only by the province, but by individual growers who had been active and generous in furnishing supplies for the great display in Buffalo.

In 1911 the Niagara Peninsula Association came to the fore when it appeared the adverse legislation was likely to very seriously affect the fruit industry of the province, more particularly in reference to tender fruits. On very short notice a delegation, some 1,500 strong, was assembled in the Niagara Peninsula and sent to Ottawa a resolution to protest against legislation that they thought was likely to be adverse to their interests.

Coming down to later years in the Association, they have been active in the standardization of fruit packages, the improvement of packages, and other movements of an executive or legislative character that has to do with the improvement of the fruit industry, not only in our immediate district but throughout the province.

In looking over the list of members in 1896 and 1897 I notice there are 63 on the roll. Of these 63, 51 or 52 of them have crossed the bar and passed into the beyond. There are only some ten or eleven of these gentlemen left to-day still actively engaged in fruit growing. I was very struck with that fact in looking over the early records of our Association, that so many of the gentlemen with whom I was connected 25 years ago are no longer in our midst.

Another picture brings to my mind a very important improvement in connection with the transportation of fruit. In 1896, 1897, and 1898 we had great difficulty in getting any service from the transportation companies that was at all satisfactory. Finally, in order to force the Grand Trunk Railway Company to carry out their work in a more satisfactory manner, on one memorable occasion the growers in a body abandoned the Grand Trunk shipping station, and went over to our local station, shipping in a very round-about way to reach Montreal and other shipping points without having to avail ourselves of the Grand Trunk. That was a very radical move but it succeeded in accomplishing what we were after.

During all the 25 years, Mr. C. E. Fisher has been our valued and honoured Secretary, and has served the Association without remuneration of any kind.

NORTHUMBERLAND AND DURHAM APPLE GROWERS' ASSOCIATION.

H. SIRETT, BRIGHTON.

The Northumberland and Durham Apple Growers' Association was formed in the summer of 1909. One of the principal figures in the organization was the late W. H. Dempsey, at one time President of the Ontario Fruit Growers' Association, and for a good many years an active director on the Board. The object

in organizing the Northumberland and Durham Association was for purely educational purposes. Of course in the constitution the objects laid down were somewhat ambitious. With your permission I would like to read the purposes laid down in the constitution and adopted at the inauguration meeting. I think they are most worthy. We still have those objects in mind and are growing in that direction as rapidly as possible.

"The purpose of the Association shall be to foster, to promote and advance every department of fruit growing, including nursery culture, planting, cultivating and caring for trees at all stages, caring for, handling and selling the fruit, holding meetings, distributing suitable literature, making exhibits and in all other ways to aid in bringing the orchards in these United Counties to the highest state of production, efficiency and profit."

The apple growing industry of Northumberland and Durham at this time was in a very poor condition. There were then very many poor apple orchards in these counties. The farmers during the period of the war allowed many orchards to go into neglect and the hard winter of 1917 and 1918 completed what had begun. So that in the whole district lying just a few miles back of the lake shore, the apple trees are not very productive.

In 1909 the apple growers in that district were seriously concerned with regard to the invasion or multiplication of the oyster shell bark lice and perhaps that as much as anything else caused concern about the future of that industry and the organization of this society whose mission it would be to assist in that campaign of education.

Another reason why we organized: We had an example of the work done in Norfolk by the Norfolk Fruit Growers' Association and the apple growers of this district were impressed with what had been accomplished by the exhibits put on by the Ontario Fruit Growers, of the Norfolk Fruit Growers' Association and they determined that it would be necessary to do something to bring themselves to the fore and attract attention if they were going to hold their place in the production of apples and the sale of apples. So one of the objects they had was putting on an exhibit at the Ontario Fruit Growers' Exhibition. The first exhibit was put on in the fall of 1910, and in succeeding years up to 1913 with a good deal of success and with a feeling of pride, especially in the 1913 exhibit, where we carried off a good deal of the prize money, and some of the important prizes in the larger exhibit.

Following the cessation of the exhibition at Toronto the idea of having exhibits took a less important place. It was felt what we were accomplishing was really a campaign of publicity which had more the effect of enhancing the orchards lands than increasing the value of the apples. We were in the market to sell apples and not land, so we decided to go on but in a different way. During the past five or six years we have laid stress at the annual meetings on the educational side. Our meetings are simply one day meetings and we try to make them as attractive and educational as possible. We do not hesitate to go to some expense to get good speakers that will be helpful to the growers. As a result we have two marked developments in the apple growing industry of our district; one is that these men who have not followed practical methods of apple growing are dropping out almost entirely; the other is, those who decided to stay in the game are practising better methods each year, and it is with these men that the Association is working almost entirely. They are not doing a great deal in the

way of encouraging new plantations, but they are encouraging the taking care of the orchards which are there now, and keeping them up to a certain standard of production.

We have in mind a number of practices. We feel that the educational work is not sufficient in itself, but that a great deal could be done to help the growers to procure supplies and also to sell apples. We are not anticipating that we are going into the securing of supplies, but we hope to keep more closely in touch with the cost of supplies in order to advise our growers from time to time just what these costs are. The gentlemen present are practically all members of other associations and know the cost of supplies this year. I find that the manufacturers of baskets are demanding fifty per cent. higher from one group than from another, and it is our intention to get away from that excessive cost in purchasing supplies and to keep in touch with the market prices, and to advise our members. If the growers know what is a fair price they are able to deal more successfully with the agents in the purchasing, and we endeavour to control the situation in that way.

In a small association such as ours, there is not a great deal that can be said. This year our annual meeting has been one of the most successful we have ever held, and we are looking forward to the orchards that are now in the hands of men who are making a business of fruit growing having new plants rather than more replacements in the course of a few years, and that we will win back the situation that has fallen away during the course of four or five years.

I think the production of apples in the counties of Northumberland and Durham has fallen away at least forty per cent. in the last seven or eight years. due to the disappearance of orchards that were planted away from the lake shore. and which have been neglected and have simply disappeared.

A NATIONAL HORTICULTURAL COUNCIL.

C. W. BAXTER, FRUIT COMMISSIONER, OTTAWA.

At the Third Dominion Conference of fruit growers, held in Ottawa in 1912, a committee composed of representatives of each provincial fruit growers' association was appointed to consider the question of the formation of a National Fruit Growers' Association. The committee, after due consideration, submitted a report recommending the organization of a national body to be called "The Canadian National Fruit Growers' Association." They also submitted a constitution and by-laws. The report was adopted by the conference and the fruit division, then a part of the dairy and cold storage branch, was requested to elect by correspondence ballot the provisional officers. The late Mr. Robert Thompson of St. Catharines was elected president, and Mr. P. W. Hodgetts, secretary of the Ontario Fruit Growers' Association, was elected secretary. I am not aware that the Provisional Board held more than one meeting. Two years later (1914) another conference of the fruit growers of Canada was held, and in looking over the report of the proceedings of that conference we cannot find that any reference was made to the question of a national organization. However, we have been advised that it was generally felt that as the fruit division had been raised to the status of a branch and would devote its whole attention to fruit, there was very little need for a national organization.

Ten years have elapsed since the question was first considered, and many changes have taken place in the horticultural world during that time, and to-day we find that the horticultural industry is the only branch of agriculture that is not represented by a national organization. It is true that we have Provincial Fruit Growers' Associations and other organizations which have done and are doing excellent work for the fruit growers in their respective provinces and for those engaged in other activities in connection with horticultural work, but there is no means of co-ordinating the work of the various organizations within the provinces nor of co-ordinating the work of the Provincial Fruit Growers' Associations except through the Dominion Fruit Conferences which have been arranged by the Dominion Department of Agriculture from time to time.

The fact that other branches of agriculture have organized into national organizations is not sufficient reason why those engaged in horticultural production and the allied industries should also organize, but it has been suggested that there are many advantages to be secured by the formation of a national organization and that the present is a very opportune time to consider the whole matter. Therefore, it has been arranged that the question shall be discussed at the coming Dominion Fruit Conference, which is to be held in Ottawa on February 22nd, 23rd and 24th next.

When the matter was discussed in 1912 there was no doubt of including in a national organization any but fruit growers, but it is now proposed that the national body shall include, in addition to fruit growers, representatives of producers of various horticultural products, such as potatoes, other vegetables, flowers and nursery stock, manufacturers of fruit, flower and vegetable containers, wholesale dealers in horticultural products, and fruit and vegetable canners, all of these being more or less interdependent.

In order to facilitate discussion it was suggested that the fruit branch outline some of the objects which such an organization might attain, and also prepare a draft of a constitution and by-laws. This has been done and the constitution and by-laws of the National Dairy Council were used as a guide. The object of such an organization would be the advancement of all matters tending towards the improvement of the horticultural industry in Canada, including production, grading, packing, transportation, storage, marketing, etc.

- (a) By initiating, fostering and assisting in obtaining such legislation and regulations as will be beneficial to the horticultural industry.
- (b) By encouraging the holding of horticultural displays, the distribution of literature and by systematic advertising, informing the general public as to the value and general use of horticultural products.
- (c) By encouraging the adoption of uniform standards of grading and packing and assisting in developing home and foreign markets.

Time will not permit of taking up the various clauses in the tentative constitution or the by-laws set forth in the draft but at any rate if the principle meets with approval there will, no doubt, be many changes made. I may say, however, that this draft has been submitted to several of those who are actively engaged in scientific and commercial horticultural activities, and practically all have expressed their approval of the formation of a national body representative

of the industry in its broad sense, and feel that the present time is a very opportune one to consider the whole matter. If it is the wish of this Convention to discuss the matter, I shall be glad to explain some of the principal points in connection with the tentative constitution and by-laws.

It has been pointed out by some that the policy of the Fruit Branch of the Dominion Department of Agriculture in holding Dominion Fruit Conferences, from time to time, and the service which has been established by the Dominion Fruit Branch have so far fully met the requirements of the industry. However, it would appear that a national organization might offer some advantages over our past methods, by reason of the fact that it would permit of complete independence from all government bodies or institutions, thereby giving a larger feeling of freedom of speech and action.

The Provincial Fruit Growers' Associations have been very generous in giving their support to the fruit branch, which has been very much appreciated, but it is generally recognized that weight of numbers having a unanimous opinion gives a larger possibility of success when dealing with questions of importance to the industry. Matters of policy and procedure requiring urgent attention and action could be speedily dealt with. A national body also permits of the horticultural industry taking its place on an equal footing with other agricultural industries having national organizations. Occasions may also arise where the combined efforts of all national organizations may be effective in obtaining for agriculture better conditions.

MR. HODGETTS: In connection with this matter there have been a couple of meetings held in the province lately called by the Florists' and Gardeners' Association. It is an association of the commercial florists, men engaged in green-house work and the raising of flowers of all kinds, and they have invited representatives of the amateur florists, members of the Horticultural Society, civic improvement leagues and so on, to fix a committee meeting in Toronto to deal with this matter. The matter came up for discussion a month ago and we promised we would put it on our programme for discussion to see if the Fruit Growers' Association thought enough of it to go ahead and amalgamate with them.

Instead of a National Fruit Council we would have a National Horticultural Council embracing all lines of horticulture, both commercial and amateur. The matter of finance is always a serious one in connection with organizing, and to bring the directors from the various parts of the Dominion of Canada is an expensive matter. I do not know how they have worked it out in connection with the live stock and dairymen's unions, but the cost will probably be one of the problems we will have to meet.

MR. BAXTER: Mr. Hodgetts has stated that the financial end of an organization is one of the most important points. We have given it consideration from various angles, and we have felt that as the Provincial Fruit Growers' Association is probably the biggest association along horticultural lines in the province that they might form the nucleus of the provincial council, or sub-council as you might call it. There are various matters to be considered and it must be worked out on a membership basis.

Now I feel that the allied industries are particularly keen to appreciate the benefits that would come from a national body and would be prepared to financially support such an organization; but we all realize that the fruit growers

are going to be in the majority and should be, because they are probably represented by the greatest number. The matter of finance is quite a problem, but if the work of the national organization could be carried on, and I believe it could be carried on to a great extent, by a permanent secretary, the financing would not amount to a very great deal when spread over on a membership basis. I did not mention the financial policy, because we felt that if the general principle was adopted the financial end could be worked out by the provincial sub-committees or provincial councils.

REPORT OF THE HISTORICAL COMMITTEE, 1922.

A. W. PEART AND W. T. MACCOUN.

The year 1921 will go down in the history of fruit growing in this Province as being remarkable in many respects.

The winter was mild, with very little snow. As a result trees and bushes and vines were practically without injury by frost.

During the spraying season there were frequent showers which interfered materially with the good effect looked for.

The last week in June and the whole of July were exceptionally hot, being several degrees above the normal. The heat was accompanied by a drought which lasted well into September. Nothing like this drought had previously occurred in the history of this generation.

Bartlett pears were picked the latter part of August and other varieties of pears, as well as apples and grapes, were harvested about two weeks earlier than usual.

As a result of the adverse conditions apples especially were low in quality, being attacked by all the known enemies, and many unknown ones as well. Upon the whole the dormant spraying kept the San Jose scale pretty well under control, but the black knot, especially on the plum trees, seems to be increasing, and will certainly have to be fought with energy in order to save our orchards.

During the spring the Niagara Peninsula Growers, Limited was organized with head office at Grimsby, this co-operative association includes the Niagara Peninsula and Burlington districts. In spite of the adverse fruit conditions this new undertaking, large as it is, has thus far made a success and justified the hopes of its promoters, having done a business of about \$1,500,000.

At the Imperial Fruit Show held in London, England, last year, the Province of Ontario made eighty-four entries in the over-seas section and eighty in the British Empire section. Ontario was awarded a silver cup, value £100, for the highest aggregate of points with exhibits in fourteen classes of the over-seas or United Kingdom sections. Ontario also won two cash prizes of ten and twenty-five pounds sterling, and W. L. Hamilton, Collingwood, £20 cash for exhibits of apples.

It should have been recorded sooner, that in 1912, at Dundela, Dundas County, Ontario, there was a monument erected in honour of the McIntosh red apple and John McIntosh, its originator.

Mr. W. W. Hilborn, a well-known Canadian horticulturist, died at Leamington, Ontario, on December 10th, 1920. He was the first horticulturist of the Central Experimental Farm, Ottawa, being appointed in 1887. He resigned his

position at Ottawa in 1889 and was a private grower afterwards until his death. When he was appointed horticulturist at Ottawa, he had to organize the work of the division and to establish the first experimental plantations. At that time experimental work was in its infancy in Canada, but Mr. Hilborn, who had been a practical fruit grower before that time, knew the problems of the fruit growers and was able to begin useful experiments which have since been of much value. After leaving Ottawa he went to Leamington and lived there until his death.

THE IMPERIAL FRUIT SHOW: ITS RESULTS.

W. L. HAMILTON, COLLINGWOOD.

You will all be interested to know the kind of fruit we took over to the Show, where we got it and how it was received. In the prize list there were fourteen varieties in the over-seas section, namely Snows, McIntosh, Wealthies, King, Golden Russet, Spy, Blenheim, Jonathan, Spitz, Greenings, Cox Orange, Newtown, Stark, and any other variety. In the British Empire section, there were two classes: One cooking and one dessert. We entered in the over-seas section thirteen varieties, being unable to locate Cox Orange. In the British Empire section we made two entries in the dessert class: Russets and Kings; and in the cooking class: Spies and Greenings. Mr. Ryrie of Oakville furnished the Wealthies and Wageners. The Kings, Blenheims and Greenings were grown by Mr. Breckon of Bronte; Spies and Newtons by Mr. Challand of Simcoe; Spitzenburgs by Smith Brothers of Oakville; Jonathans, Mr. Langell of Point Pelee; Starks, Mr. Little of Trenton; Snows, McIntosh and Russets from Collingwood.

The fruit landed in excellent condition, and we are very much indebted to the Dominion Express Company for the way they handled it and looked after us over there. The boat got into Liverpool on Saturday, and the apples were unloaded before any passengers were allowed off, which was quite a concession to us, so we had our exhibit ready by ten o'clock Monday morning as was required.

The Wealthies were the first to be judged. They were very fine and scored 100 points. They were so good that the judges were doubtful that they were Wealthies; so doubtful that they called Mr. Carey over and asked him if Wealthies grew like that in our country. We secured first prize on the Wealthies.

The Snows scored ninety-nine, being cut one point for colour; I do not know whether they were cut for too little colour or too much. We got second prize on the Snows, being beaten by New Brunswick.

McIntosh were also beaten in first place by New Brunswick; the fruit being larger than we would have liked.

Kings were furnished by Mr. Breckon of Bronte, and were the finest Kings I ever saw in such quantity in my life. They were of as high colour as the Jonathans, but lost two points for having too much colour, and got second place. On asking the Judge why he cut them for colour, he said the Chairman of the Judges had instructed that the apples should represent normal size and colour for variety and these being above normal, were cut two points.

For Golden Russets, Nova Scotia received first and second, and New Brunswick third, while we got highly commended. I think the judge was wrong in his second placing, both our own and third prize boxes being superior.

Spies scored full 100 points; they were easy winners. There was no question that Ontario had them all beaten; British Columbia Spies could not compare with our apples.

Blenheims. We did not get any prizes on this variety, but they were very fine. They were cut three points for colour, but they were beautiful. British Columbia took first place on the Blenheims but they were only No. 2 size; we would not consider them No. 1 size at all for Blenheims.

Jonathans. We did not get a prize on Jonathans, as they were cut for colour, but were a very fine lot.

I think the judges tried to be fair, but they were not box judges; they knew nothing about boxed apples nor about the types of varieties or the fullness of the pack or alignment.

Spitzenburgs. We took second place; being cut five points for colour; they were fine Spitz, but not high enough colour.

Greenings took second place; they scored ninety-seven points, and were also cut on account of colour.

Newtown Pippins scored 100, and the score card was marked "Excellent."

Starks were cut heavily for colour, and we did not get a prize. We had to pick them a week before we left here, and it was away too early for this variety.

Any other variety. Mr. Ryrie's Wageners were entered in this class, scoring 100 points. They were very fine. The second prize went to British Columbia on Delicious, and the third to Nova Scotia on Princess Louise.

In the fourteen classes that competed for the Challenge Cup, we got four firsts and five seconds, and we secured the cup by winning the most points. British Columbia boasted of having more medals than we had, which is true, but they had about four or five entries to each class, and should have taken four or five times as many medals.

In the British Empire section, there were six or seven entries, in the twenty-box lots; Ontario had Kings and Russets; British Columbia, Jonathans and Cox Orange; Quebec, McIntosh.

The three judges judging the over-seas section selected the twenty-boxes of Cox Orange; they passed over everything else. The twenty boxes of Kings made the finest exhibit in the show; they were perfect, 125 to the box, but the judges did not even look at them; they said nothing could compare with the Cox Orange for dessert.

Considerable trouble arose in the cooking class. Three judges selected the Ontario Spies and Greenings as the best entries in that section; Spies first and Greenings second. Three judges from the United Kingdom section selected the Newtown Wonders and Bramley Seedlings as the best two lots from the United Kingdom. Finally, they gave the prize to the Newton Wonders. Then one judge wanted the Greenings to take second place, but the other judge wanted the Bramley Seedlings in the second place, so they locked on these two. The Chairman of the judges gave the prize to the Bramley Seedlings, but he afterwards admitted that our Spies and Greenings were very fine; he had not seen them before.

We have pictures of twenty boxes of Spies and of Newtown Wonders. The Newtown Wonders had excelsior packed at the sides of the box and the boxes were not filled. They used the argument that "You people have to come 4,000 miles, and lots of our exhibitors only come fifty miles." I asked one of the judges why

they put excelsior in the bottom, he said "For the same reason you use paper!" I said "We put it around the apples, not at the end of the box." That is the reason we lost on the twenty boxes of Spies. It was a £50 special, and we would like to have brought it back with us.

We took enough fruit over for a commercial exhibit also, and put up a very nice exhibit for the Province. The show on the whole was very fine; there were about 8,000 cases of apples besides half barrels, though I do not think I noticed any full barrels. But the building is so large and the apples were scattered around in the different wings, that it did not look as massive as it otherwise would.

Our McIntosh apples got a great boost. Some of the officials of the show took a fancy to this variety and getting several boxes, distributed them among their friends. If we got nothing but the boost to our McIntosh, it paid us well for having gone over. Mr. Bussy of the *Daily Mail* had a party of friends in one night; he took several McIntoshes and Cox Oranges and peeled them and passed them around. He asked his friends to decide which was the best variety, and everyone to a man chose the McIntosh.

MR. HODGETTS: Do you think it would be worth while going back another year?

MR. HAMILTON: I would not go back unless we knew who was to judge the apples. If we were to have American judges who knew something about box apples, it would be all right. I think the judges were honest, but they did not know boxes, and did not take into consideration the types of the varieties.

THE IMPERIAL FRUIT SHOW.

P. J. CAREY, TORONTO.

I was very pleased to have the privilege of being over at the Imperial Fruit Show, and do my best for the Dominion.

I want to say a few words in explanation of the story that got considerable prominence that the Canadians were not fairly treated over there. It is true that we felt in a few cases we were not fairly treated, but on the whole, as Mr. Hamilton says, I think the judges did the best they could. *The Daily Mail* did not understand the running of the show, and the judges did not know the work, and between the two we had some disappointments. That is about all I can say in regard to that. As I understand it, *The Daily Mail* did not have Canada in its mind at all when they started the show. The idea was to stimulate the growing of home-grown apples. They went so far as to say England could grow enough apples not only for their own use but leave a margin for export. I noticed in their prospectus nothing was said about Canada nor the over-seas fruits at all; we were just allowed in to help make the show a better show, to lend colour to it, and it was fully understood we were not part of the show to begin with. That being the case, we cannot find very much fault.

I must say I sympathized with Mr. Hamilton in his work for the Province. I found the boxes that held these Newtown Wonders were not lawful boxes at all. They were twenty inches long, when they should have been eighteen inches, and they should have been disqualified right at the start. Two young men who were teaching box packing there were appointed a committee to cut out all the entries that they thought would not be placed in the money, because it was thought there was not room enough in the show for all the exhibits, and they

set these particular Newtown Wonders aside, because the box was not the right size. Later on in the day, they got an order that there was plenty of room for all entries, and this lot again slipped in and won first prize, so you can plainly see that there was a little room for complaint there.

I think we are good sports in Canada, and I am sorry we said anything about the matter. It got abroad in the Old Country that the Canadians were not treated properly, and of course the newspapers, as usual, made a great deal of it. It was a little unfortunate we said as much as we did; it may be the cause of not being invited again. Mr. Baxter will be able to say whether we are to exhibit next year, but if we do it will be under different regulations. I would say we should have judges from the United States or some outside country that were not interested. If that is not so, Canada should be represented on the judges' staff.

Then the regulation to remove the wrappings off the two top tiers was simply absurd. I am not too modest to say I took a hand for four days in fixing and repiling the British Columbia lot, taking off the tops, the wires, unwrapping the top two tiers of the boxes and replacing them, and nailing on the tops again. We were forced to nail them on because the space was so limited; we had to pile them seven and eight deep in order to wait for them to be placed on the judges' stand. Some of the boxes were just a mass of apples; they were loose to begin with, and when the wrappers were removed they just ran together.

New Brunswick perhaps won the most notable prizes of any Province. New Brunswick said, "If we have to remove the wrapper before they are judged, we will leave them off," they did not wrap the two top tiers; they simply put them in as tight as they could and shipped them over, and they arrived in first-class condition. New Brunswick got first prize in McIntosh Red and Fameuse; Quebec was down to win these two prizes, because they are their special apples. I believe the Quebec apples were just as good, but the pack was a little loose and the box did not show up. Quebec felt so badly over it, that I believe they blamed Mr. Smith and myself for not getting the prizes, but we did everything we could do for all the Provinces. There was absolutely no one except Mr. Hamilton, Prof. Blair and myself who had a knowledge of fixing up box apples for prizes.

I think we had better be sports and not say anything about being badly treated over there. Perhaps the treatment was coming to us. They had only one thing in mind: to make themselves solid with the people of the country and the growers of the country. As far as the *Daily Mail's* idea is concerned, it was admirably achieved; they got the people all stirred up, and they are going to plant millions of trees, and that may make some difference to the fruit growers of Ontario and the other shipping Provinces. But let me tell you this: the life of the English apple, as I judge it, is about over the 1st of December, so that there will be no competition against our winter apples, unless they build cold storages and prolong the life of their apples. Their present method of marketing their apples is picking them from the trees and putting them on the market. That is all over about the middle of November, so they cannot hurt our competition beyond our fall apples.

The principal point which we gained over there is this: The English consumer, for the first time, had an opportunity of seeing Canadian apples in a mass. Up to the time of the show, they only saw them when they bought them by the pound and took them home. A quarter of a million people passed through the show and could see our apples at their best, and they marvelled at the appear-

ance of them; they could see the superiority of ours over the English apples. It was plain to see—beautiful red shining fruit as compared with fruit lacking colour, or with a sickly colour.

In the English exhibit there was scarcely a box of apples that did not contain some apples partially decayed. I counted fourteen in one box entirely broken down, showing that the keeping qualities were not there. While in the Canadian apples, you would think they had just been picked off the tree. I had an opportunity of seeing all the Provincial entries, and I did not see one single specimen that showed signs of bad handling, and we cannot say too much in praise of the Express Companies for the way they handled our shipment.

I feel honoured in being chosen one of the representatives of the Dominion of Canada in the Dominion Exhibit.

MR. BAXTER: I just wish to correct an impression that might be gained from Mr. Carey's statement with regard to Quebec's attaching some blame to himself and Mr. Smith for their failure to obtain prizes. As Mr. Carey states, that was a fact, but it was due to the report issued that Quebec's exhibit failed to arrive and did not find a place among the contestants. That report was groundless, because every box that Quebec sent over was given a place and competed for a prize, so while the Quebec people did feel that they did not receive the attention from my officials that they should, that has been altogether corrected, and they now have nothing but appreciation for the efforts put forth by Mr. Carey and the other representatives from the Provinces to give Quebec the best showing possible. They have expressed to me their hearty appreciation, and they regret that such a report had been circulated.

If it is in order to refer to Canada's further participation in an Imperial Show, I will refer briefly to a letter I received from our Fruit Commissioner, Mr. Forsyth Smith. It was my honour and privilege to act as Canadian Secretary to this Imperial Fruit Show, and while, as has been stated, we may not have had an altogether fair showing, nevertheless, I think it paid us well, what we received together with the entertainment. Mr. Howard Shipman, Horticultural adviser to the *Daily Mail*, who were the promoters of this show, some time ago asked if I would say what they might hope from Canada by way of support in future shows. We heard something of the little dissatisfaction that had occurred, and we replied that we would have to reserve decision or withhold our opinion until we received our official report. When this came, the criticisms were so severe that we decided it would be better not to publish them. Mr. Carey and Mr. Hamilton have said there were probably reasons for the judging—inexperience being the greatest of these—being amateurish all through. In future we hope for better treatment, but we did not publish that part of the report. We sent a confidential report to the newspapers for their future guidance, and also our prints of the photographs.

A meeting of the Advisory Committee was held in London on January 19th, and I was asked to give an opinion as to the possibilities of Canada again participating in future shows, as it is proposed to make this an annual event. My suggestion was that Mr. Smith, being Canada's representative on this committee, should assume the attitude that Canada would participate in future shows to a much greater extent than in the past. By so doing, it would enable him to obtain for us the best regulations possible. After that had been done then we could decide as to whether these regulations and assurances of scientific judging

and experienced judges was such as would lead to our further participation. I have just received a report from Mr. Smith as follows:

EXTRACTS FROM MR. SMITH'S LETTER TO MR. BAXTER.

"As your cable expressed the view that Canada would like to participate again, and as the Agent-general for Ontario had heard from his people and the representative of New Brunswick from his, that they would support another show on a greater scale, we all, finally, agreed to attend the meeting, to raise no awkward questions at this stage, and to convey the general idea that Canada would be glad to be represented.

"Mr. Bussy announced that the "Daily Mail" would finance another Show, that it was proposed that it should again be held in the Crystal Palace, and at approximately the same date, the exact date to be settled later. He evidently has it in mind that it shall be an annual event, for he said that he did not think it advisable to give medal prizes, as medals would then become too common, but would offer Challenge Cups, to be held for a year only, until won three times in succession by one competitor, together with money prizes to be awarded each year. I shall, of course, endeavour to have the latter made as substantial as possible.

"A resolution was, also, passed that the scope of the Show should be enlarged to take in citrus fruits, and pineapples, to be furnished by South Africa, and pears. It is possible, also, that peaches will be added to the list, in which case I think it would be advisable that Canada should send forward exhibits of the last two fruits.

"A suggestion was also made that New Zealand and Australia should show cold stored apples. (In view of their season, it is manifestly impossible for them to show fresh apples). This, however, did not seem to appeal to the Australian and New Zealand representatives, as, of course, they have no object in exhibiting cold storage apples, which they could never hope to sell commercially in the height of the English, Canadian and American fresh apple season.

"A similar suggestion made with reference to Canada (i.e. as to our showing storage apples of the previous year, as a means of reconciling English desire for an earlier date for the Show, with the impossibility of our showing new season apples at such a date) was promptly negatived by me. There would, of course, be no object at all in our showing storage apples which we could never expect to offer commercially.

"No date has yet been fixed for the meeting of the Advisory Committee, but this will probably be held inside of the next month."

Mr. Smith was instrumental in getting the management to greatly increase the financial prizes on the ground that Canada would be put to a great expenditure in bringing their exhibits some 6,000 miles.

Mr. Smith asks for our further opinion as to Canada's participation and also for certain support in his efforts for better conditions.

"There was another point settled at the meeting to our advantage; it was agreed we should have two representatives on the sub-committee. I, of course, am one. The other has been left for us to nominate, and will probably be the 'scrappiest' Agent-General I can select," Mr. Smith further states.

Personally I believe if we can succeed in getting better rules and regulations and some guarantee that they will be strictly adhered to, it has been and will be one of the best avenues for advertising the Canadian apple in the Old Country markets that we could have. I hope we will succeed in doing so, and if we do, we will go back with a much better exhibit, and notwithstanding all the handicaps we will still win out.

PRESENTATION OF MEDALS TO THE WINNERS.

AT THE IMPERIAL FRUIT SHOW.

THE CHAIRMAN: I hold in my hand a gold medal, First Prize, Class I. Wealthy Apples, won by Mr. Harry Ryrie of Oakville. What I have to say to you. Mr. Ryrie, will apply to all the rest: you have done signal honour to the

fruit growers of Ontario and also to this Association, and we feel as growers that we are indebted to you for producing apples of sufficient high standard to bring back such a medal as this.

Second Prize Medal,	Mr. Hamilton, Collingwood, for McIntosh Apples.
“	“ Mr. Breckon, Bronte, for King Apples.
First “	“ Mr. C. W. Challand, Simcoe, for Spies.
Second “	“ Mr. Smith, Oakville, for Spitzenburg.
“	“ Mr. Breckon, for Greenings.
First “	“ Mr. Challand, for Newtown Pippin.
“	“ Mr. Ryrie, for Wagener.

Bronze Medal for 20 boxes of Greenings in British Empire Section presented to Mr. Breckon.

MR. HODGETTS: When the Show was first mooted, and we were asked if we would make an Exhibit, our Minister said to go ahead if we could get the apples, but he thought it would be better if the Exhibit was put up by the Ontario Fruit Growers' Association. We first advertised that the Show would be held and anyone wishing to make an entry should write to the Minister, and that the Department would pay the expenses of sending over the fruit. There was no response, and we had to go up and down the country to locate the apples. It was a bad year, and we had trouble in getting apples which could meet the competition we knew we would be up against in London. We went first to the people who had won prizes at our Provincial Shows in the past, and it was not a great while before we located everything except the Cox Orange. Cox Orange is a great favourite in the Old Country, and we thought if we sent any over, we would have a chance to win first prize. The tree was planted here a good many years ago, probably by some of the early English settlers; there are trees, in some of the older orchards, but we could find none bearing this past season.

Jonathan, Spitz and Newtowns are typical western varieties, and we thought it would be nice to beat them with their own varieties. We succeeded with Newtowns from Mr. Challand's orchard at Simcoe, but with the Jonathans we were cut for having too much colour. There not being the requisite five entries we failed to get the third prize which we should have been entitled to.

We secured Wealthies and Wageners from Mr. Ryrie's orchard at Oakville. Mr. Ryrie's orchard is one of the largest young orchards of the Province, and we had no trouble whatever in securing from him sufficient of the two varieties on which we took the two gold medals which have just been presented to him.

We went to Mr. Challand of Simcoe for Spies, because we figured the Norfolk Spies would have a better colour and would be in prime condition at the time of the Show which was in October. Farther north or east they would not be so ripe. Mr. Challand certainly had Spies to win over there, but we were disappointed on the twenty box lot in the British Empire Section. In the six box lot, we had no trouble in winning the gold medal on the Spies. Mr. Challand has an orchard which is certainly a credit to himself and to the Province. Mr. Challand also provided us with the Newtown Pippins which carried off the gold medal.

When we looked for Kings and Greenings, we turned to Mr. Breckon of Bronte, because he had always run Mr. Hamilton a close race on these varieties, particularly the Greenings, at the Toronto Show. Mr. Breckon has not a young orchard, but there is no cleaner orchard, as far as cultivation and fruit is concerned, in the Province. If we ever have any excursions from this association, I would like to take the members down to see Mr. Breckon's orchard. He not

only had the twenty box lot and the six box lot, but he could have furnished us with a 100 boxes. The trees were laden, and the fruit was uniform in size with a nice clean skin.

As far as Spitzenburg is concerned, there are not many trees in the Province. We understood Smith Brothers of Oakville had a few which always produce nice apples, so we got our Spitz there taking the silver medal at the Show. It was a little early to get the best colour, and we were cut on that. Smith Brothers, also have extensive orchards showing careful handling.

The Jonathans came from Point Pelee. There is some discussion on this and other varieties later in the programme: it is claimed we cannot grow them in Ontario, but we were fortunate in locating the orchard of Mr. Langell which is largely planted with Wealthies, Jonathans, and other western varieties. Mr. Langell is growing Jonathans very successfully in a commercial way near Leamington.

For Snows and McIntosh we turned to Mr. Hamilton of Collingwood. It was difficult to get the McIntosh small enough to win a prize in Great Britain. Mr. Smith had warned us to take the smaller sizes over there because they were favourites in the British markets, but this year we could not get the size we wanted and had to be content to take second place with Snows and McIntosh. Golden Russets came from Mr. Hamilton's orchard also, and were representative of the Province, but Nova Scotia had better russets, securing the gold metal.

We had to go east for Starks, getting them from Mr. Little's orchard at Trenton. It was too early in the season to get the colour we would like so we were not in on the prize money on that variety.

MR. CAREY: I would like to say a word about the Federal Exhibit. There were four contributors from the Province of Ontario. With the exception of five boxes of apples from British Columbia and five from Nova Scotia, the balance were taken from Ontario. Snows and McIntosh we secured from Mr. Ernest Robinson. Mr. Harold Jones, Mr. Breckon and Mr. W. H. Gibson of Newcastle were the other contributors, and the apples were as near perfection as possible.

MR. HODGETTS: I want to mention the name of Mr. Gilbertson, from whom we got apples for our Provincial Exhibit. The balance we secured from Mr. Breckon and Mr. Ryrie.

SURVEY BY DIRECTORS OF THE DIFFERENT DISTRICTS.

DISTRICT No. 1: RENFREW, LANARK, CARLETON, RUSSELL AND PRESCOTT.

MR. MACOUN: I should like to present a more favourable report of that section of the country than I am going to do, but I presume you want an honest report, so I will stick to facts.

District No. 1 includes the counties of Renfrew, Lanark, Carleton, Russell and Prescott. The fruits which can be grown successfully commercially in this district are the apple and the American and hybrid groups of plums among tree fruits, and the currant, gooseberry, raspberry and strawberry among small fruits. In addition to these the hardiest pears succeed in the most favoured parts of the district and are planted, to a limited extent, for home use only. Many varieties of grapes will ripen every year, but because the vines have to be covered with soil in winter they are not grown commercially. The sour cherry bears

a crop, perhaps, two to three years out of five and the same may be said of the European or *Domestica* plums, hence these are not commercial fruits, but are grown to some extent for home use, and a few may at times be offered for sale.

All the cities, towns and villages in these counties could be supplied with apples, certain kinds of plums, and currants, gooseberries, raspberries and strawberries produced in the district if sufficient growers would undertake to do this, but it would seem that persons with the horticultural instinct usually desire to be near other horticulturists, hence instead of building up the fruit industry in their home district they move to the fruit centres.

As the Agricultural Representatives who travel much through the counties they represent are in the best position to know what is being done in fruit growing in their counties, a letter was sent to each one of them asking for information.

Mr. Fred Forsyth, Representative for Lanark County reports:

"In reply may say the fruit industry is a very neglected branch of farm work. True, there are a few odd farmers planting a small number of trees solely for local use. The varieties of these trees cover largely Transparents and McIntosh Reds. Orchards generally have been sadly neglected and little or no care is taken of them at all. I do not think I can give you any further information that would be of value as there is so little interest taken in fruit growing here."

Renfrew County: Mr. M. H. Winter, representative for Renfrew County, reports as follows:

"As you know, there are very few apples grown in this county for commercial purposes. I do not imagine we have over forty acres set out to apples. The greater part of this acreage will consist of from five to forty trees around a man's home.

"Some of our younger orchards are looking well, but it usually happens that about one-third has to be replanted before the trees reach an age of six years. The loss is caused largely by winter killing. While some orchards have been planted over 20 years, and appear fairly hardy, my experience has been that trees do not live over 15 years.

The varieties mostly grown are Yellow Transparent, Duchess, Wealthy, Fameuse and McIntosh. Of these, the Duchess and Wealthy probably give the best yields. We also have a considerable number of Alexanders, Wolf Rivers and Scott's Winters. I would estimate that from 200 to 300 acres are being planted annually.

Following is a report from Mr. Ferdinand Larose who represents Prescott and Russell Counties:

"Re fruit growing in Prescott and Russell Counties. I beg to inform you that to my knowledge very little is done along that line, except in apple growing. The orchards are generally in poor shape due to bad winters of 1917 and 1918. There are very few good orchards, and in my opinion a campaign should be started. There is an exceptionally good section in the vicinity of Vankleek Hill which should be utilized to a much larger extent for the purpose of apple growing. As to the number of trees which were planted since my appointment in the fall of 1919, only two farmers asked information about planting of any trees, and this was only for very small quantities of a dozen or so."

Carleton County: There is no report from the representative of Carleton County, but as we live in that County ourselves, we may say that apart from the Experimental Farm Orchards at Ottawa, there is little planting in the County, and the orchards are about in the condition described for the other counties.

The market gardeners about Ottawa are planting a few trees each because they find it very profitable to sell apples in baskets with their vegetables.

After thirty-five years' experience in fruit growing at the Central Experimental Farm, Ottawa, we should say that there are three main reasons for the industry not developing to any extent: First, because, as stated at the outset, most men with the horticultural instinct, born in rather rigorous climates, are inclined to move to a milder climate where they can grow a greater quantity of fruit. Second, the winter injury is very great at times. Since 1887, we have had winter killing in 1895-1896; 1903-1904 and 1917-1918. Those who have not the hardiest varieties become discouraged because of the large proportion of their trees that are killed. Third, the injury from mice is at time very great, unless the trees are protected regularly every year. This one cause has discouraged many, as trees just coming into bearing may be destroyed.

Notwithstanding these difficulties, the great success of the Central Experimental Farm orchards is good evidence of what can be done if orchards are cared for, and the proper varieties planted. The many new and promising varieties of apples originated at Ottawa should be of much value in future development of the industry in Eastern Ontario.

DISTRICT No. 3: LENNOX, ADDINGTON, HASTINGS, PRINCE EDWARD.

MR. IRELAND: In Prince Edward County we can raise the best apples of any county in the Province. We have a climate that gives a nice flavour, though we do not always get the best colour. We can grow the very best sour cherries; some of the farmers have as many as 20 acres of these. The apple orchards have been neglected a great deal for the last seven or eight years, and they are planting no new orchards worth mentioning since the over-production scare of 1910. About 90% of the farmers in our county would rather have a farm without an orchard than one with it. The side worm was a great drawback to us during the past season; many of the apples were not fit to market.

DISTRICT No. 4: NORTHUMBERLAND, DURHAM, PETERBORO, VICTORIA.

MR. SIRETT: My remarks this morning deal with the situation so far as apples are concerned, that is, all the districts not approximately near the north shore of Lake Ontario are very rapidly going out of apple production. In the Counties of Peterboro, and the North part of Northumberland and Durham, there are comparatively few orchards that are producing any apples except as incidental to their other work; no care is being taken of them. Mr. Ireland's remarks with regard to men preferring farms without orchards applies to this district. In the apple districts, the situation is very much more encouraging of course. Our trade is largely an export one, requiring a good shipping apple; an apple such as the McIntosh, Fameuse, Spy and similar varieties are not good export apples. The Baldwin perhaps represents more than any other variety the characteristics required in a first-class apple. Unfortunately the Baldwin has not given satisfaction; they produce a considerable quantity of apples, but I question whether you can find a Baldwin tree that has not suffered winter injury. The producing of a hardier type suitable for our export market is a problem that has concerned our local Association for a number of years, and some effort has been directed towards interesting the Government in producing such an apple.

An apple that was rather important in our district previous to the winter of 1917 or 1918 was the Cranberry; it suited our demand admirably, but it was almost entirely wiped out in that winter. The Cranberry, Ontario, and to a certain extent the Stark and Baldwin suffered most.

The apples we recommend for planting to-day are: Spy, Fameuse, McIntosh; for early apples, Alexander and Duchess. This year there was a very keen demand for early apples in Great Britain. The Ben Davis and Stark are giving considerable satisfaction and are suitable to our conditions, because they produce a crop almost annually; they have a good colour, keep well and carry well, and although they command a smaller price, nevertheless the net receipts are larger than in many instances with higher priced varieties.

I brought up here a plate of Delicious apples that were grown in the neighbourhood of Brighton. This variety has not yet become well known. These apples were planted in 1912; the trees bore first two years ago, just a few apples, but this year, they bore as much as two barrels per tree.

We found as a result of our experience in 1917 and 1918 that the trees that had a good strong vigorous growth did not necessarily escape the freezing that so many suffered from that year. The Delicious tree may prove altogether lacking in hardiness, but if that does not prove to be the case, the Delicious will be planted in the Northumberland district in the next few years. The demand for the apple has been already made, on account of the advertising it has received both in the United States and Canada. I think if we produce fruit, even of that colour, there will be a ready demand. These apples were in cold storage, but those in ordinary storage are still perfectly firm, and will carry any distance; they come on after McIntosh and Fameuse have been cleared away; they are not only picked later but have a longer season, so that the period for marketing is spread over a greater number of months, and there is a better opportunity of disposing of the crop.

Q.—What is the season?

A.—The season with us is January, February and the early part of March. The season is very similar to the Spy. There are comparatively few Spies in better condition than the Delicious is just now.

I also have set out a variety of Mr. Macoun's Spy Seedlings; the tree fruited two years ago for the first time, and again this year. Unfortunately this variety does not show enough colour, but that may improve; young Spies, of course, do not show good colour as a rule. I opened a barrel of Cobalt apples the other day and found them in excellent condition, but there was not enough colour to appeal. The Cobalt is a vigorous tree, one of the most attractive trees I have seen; it bears early and heavily—about four bushels on a Cobalt tree planted in 1914, with just ordinary care—but it has this undesirable quality of lack of colour, with a very large white spot.

I would like to emphasize and draw the attention of this Association to the need of more systematic and extensive breeding of apples which will be suitable for our export trade. The Baldwin would be typical, if we only had a hardy tree. The Spy is a high class apple for the domestic market, but not for the export market for those who make a business of it.

Never in the history of apple growing have the orchards in our country been as well cared for; spraying, fertilizing, cultivating and pruning are all being carried on with greater efficiency than in the past, and I look forward to good

returns for these men. The Delicious and Jonathan are apples likely to be planted extensively, and we would like to know whether this should be done.

DISTRICT No. 6: HALTON AND PEEL.

MR. FOSTER: Last year, as you all know, was an off year so far as the apple situation is concerned; the crop was below the average, and so far as Halton and Peel are concerned, the quality was below the average. There seemed to be a great many enemies to combat. In our counties there are not as many orchards being neglected as in some of the other sections; I do not think there are many being renewed or replanted, which is due probably to lack of help and the high price of the young trees. The price is a little lower now, but is still high enough. What we might expect in the future regarding planting, I do not know, but the people feel that they will take care of their trees as well as they can, and if they can produce good clean fruit, they will always have a market for it, especially if it is put up well. We have produced good fruit in some sections and have fallen down on the pack; we have not been able to hold the confidence of the buying public, and that is a very important item in any trade. If we expect to continue in the business, we will certainly have to put up the goods in a little better shape, in such shape that we will gain the confidence of the buying public so that they will come back a second and third and fourth time. We cannot afford to continue hunting up new customers all the time, but if we can hold the confidence of the people, there is a great future for the fruit business.

DISTRICT No. 7: LINCOLN.

MR. CRAISE: The district I represent is rather small, but I think I can shout just as strong as my friend from Trenton. I claim we grow as good fruit across the lake in the Niagara district as can be grown anywhere else in the world. I care not whether in British Columbia or elsewhere. But we won't say very much for the apple business, that is, in a commercial way. While you hear the Niagara district boosted as the peach growing centre, I think a man making his livelihood from the growing of fruit is making a mistake if he does not include a certain acreage of apples. On my place of forty acres, I have an old orchard of sixty trees that have netted me more money than any other two acres I have on the farm. I have a small planting now of 105 trees that are ten years old.

I have made a little estimate in our section between the fruit grown now and ten years ago. I started with the apple. In my opinion, there are not more than 25% of the apples grown ten years ago. Pears—not more than 75% as many as there were ten years ago; the same thing is true of peaches, and if anything I am a little high on that, and you can scarcely go through the district and find one orchard that is absolutely clean, that is, free from canker, because that is the big enemy of the peach grower to-day. The men in charge of our different Departments have failed to find anything that will absolutely control the peach canker. We have to give credit to our friend, Mr. Palmer of the Vineland Experimental Farm, for the policy he is advocating at the present time with regard to pruning. He advises moderate pruning in comparison with what we did a few years ago; in most cases the canker develops where a wound has been made in the tree, so that the less wounds, the less possibility of the canker developing. That is beneficial also in the matter of producing early bearing.

In connection with grapes, I have them down at 150%, and by the prices we have been receiving in the last year, that might be raised to 200%. The growers received \$85 a ton last year, while within my recollection, we drew grapes to the wine factories and received as low as \$15 a ton, so there is a vast difference in the return of the vineyard.

In the matter of plums, I think we are 100% strong yet. Some orchards have gone out and some have been neglected, but there is a certain amount of new planting going on all the time. My brother and I work together; ten years ago this fall, we bought a farm of fifty acres, and in that ten years there have only been two years when the large plum orchard did not pay; one year was from crop failure, and the other was on account of the low prices, so that we have had eight successful years out of ten growing plums in that section.

With regard to cherries—I refer to sour cherries particularly—I have them down at 125%, and from our own experience they have been a very good payer. While they have not always commanded big prices, there has always been a reasonable margin left at the close of the season.

I put strawberries and raspberries in the same class, and they are about holding their own. Of course they have a great many enemies which have been developing in the last few years, and men have become discouraged. But I would say, from my own observation and experience, that the man who takes proper care of his orchard has a future before him, and need not be at all pessimistic about the fruit business—but he must take 100% care.

SIMCOE DISTRICT: NORFOLK.

MR. JOHNSON: Norfolk County is just about the same as other counties as far as the apple business was concerned last year; the fruit was certainly very spotty, which cut down our quantity a great deal. We have a good many middle-aged orchards, and during the past few years I consider that the orchards have not received the care they should have had. We have a large planting of young orchards in the county, which run about ten or twelve years old, and I believe probably next year we will show you a marked improvement in the quantity of apples and also the quality of apples shipped out of Norfolk County. We may possibly not grow the best flavoured apples—but only possibly—but since people have begun to eat with their eyes, we will do all right. Norfolk County has a market in the West, and I believe Norfolk is practically the only county that is advertising their own apples. Out West, the people know exactly that Norfolk apples mean a certain grade. We have representatives out there who advertise our apples on their letter heads, and we have always tried to keep up our grade.

We grow a good quantity of strawberries, producing last year about 500,000 baskets, around Simcoe alone.

We have tried peaches and grown them certain years, but they are not a good investment.

DISTRICT No 13: GREY, SIMCOE, MUSKOKA, PARRY SOUND, NIPISSING, ALGOMA AND MANITOULIN ISLAND.

MR. HAMILTON: The North part of the district will speak for itself. Around Georgian Bay section, with the exception of a few, the orchards are not being well cared for. In Clarksburg, Thornbury and a few in Meaford, the growers are spraying very well. Mr. Baker, who has a large orchard on his farm, has gone

altogether to dusting and claims he is getting good results. He has a hard orchard to look after, it being on the side of a mountain. I do not know of a single orchard that has been planted lately; there are a few trees being filled in, but practically no planting at all. A few commercial plantings set out some years ago are now just coming into bearing.

OUR SMALL FRUITS.

E. F. PALMER, VINELAND STATION.

"Is there anything better than the Glen Mary and Williams?" On the face of it that is an impossible question to answer, because the strawberry is very variable in its adaptations; a variety which will succeed in one locality may not be at all successful in another. Among the new varieties we have tested out at the Horticultural Experimental Station is the Portia, and we have certainly found for a jam and canning berry, this berry far excelling all of our present commercial varieties. In other new varieties, our breeding work at Vineland is comparatively recent. We have just got to the stage where we are sending out for trial half a dozen of our selected new hybrids. Three years ago we sent out fifteen or twenty to a dozen or so growers in different parts of the Province, and as a result of their test, and further testing of our own, we have cut down that number to about five or six, and these five or six we are prepared to send out to any one for testing so long as the supply of plants last. As to whether there is any better than the Glen Mary or the Williams, we cannot say yet. In four or five years from now, with your co-operation, we can make a definite recommendation. I can say for the Portia that it has stood up for years, and we certainly consider it, for the purposes of jam and canning, *the* berry.

The same holds true of raspberries. We have one very promising seedling which we are propagating very fast, but it is still too early to say whether it is better than the Cuthbert.

There are several new diseases; one or two in particular are making very heavy inroads in our present varieties of raspberries, the Cuthbert included. The Marlboro has completely failed where these diseases have come in. The only variety showing resistance is the Herbert. If the disease continues and grows worse as it seems to be doing, then the Herbert may take precedence over the Cuthbert.

There are several new varieties put out by the Geneva Station: Donborough, June and Ontario, but all of these varieties are susceptible to the raspberry mosaic and leaf curl; not only susceptible, but the stock sent out is deceased stock, so we cannot recommend growers buying these varieties at the present time. There are also two or three varieties from the Central Experimental Farm, but I will leave that to Mr. Macoun; I have reference to the Count, Sir John and Brighton.

MR. HODGETTS: Have you tried the King Raspberry?

MR. PALMER: We have the King growing, but it is susceptible to disease. I want to state here that the raspberry yellow and mosaic is from all indications a very serious disease, and one which may entirely revolutionize our varieties. We must get resisting varieties if the disease is to continue, as it is giving promise of continuing at the present time.

GRAPE PLANTINGS ARE INCREASING—WHAT KINDS ARE MOST PROFITABLE?

THE CHAIRMAN: Personally I have planted two varieties for commercial purposes: the Concord for a blue grape, and the Niagara. We have a certain number of other kinds, but they are much more susceptible to disease, such as rot and mildew, than these two.

MR. BUNTING: The Concord variety is in demand and is planted more largely than anything else. There is nothing better than the Concord.

THE CHAIRMAN: There is another blue grape which is being largely planted, called the Worden. It is an earlier grape than the Concord, but is very thin-skinned; and our experience is that it does not stand shipping very well, and cracks in the baskets and blows open, but it is a beautiful grape.

MR. PEART: I know of no grape better than the Campbell's Early; there just seems to be one requisite for success in that grape, and that is that you must prune it about three times as short as any other kind. It is a very heavy bearer, and hardy and will hang on from first to last.

THE CHAIRMAN: Campbell's Early is a new variety compared with the Concord; it would be another of these grapes that calls for a special market. It is the only early blue grape we have that is edible, or really satisfactory. We have had for a long while the Champion; it produced heavily, but the trouble was the growers would not wait until it was ripe—and it was bad enough when it was ripe. The Concord for the Blue, and the Niagara for the White are the best commercial grapes; any other varieties are more of a special grape and have to be sold as such.

MR. PALMER: I would like to ask whether it is advisable to plant a large acreage of Concords? They are not a shipping grape, and if the local markets will not take the increased plantings, there will be a surplus of them.

THE CHAIRMAN: It seems to me that the history of the industry so far would hardly uphold the statement that the Concord is not a good shipping grape. We have shipped Concords to the end of the earth nearly—carload after carload into the West—and they have all been satisfactory.

MR. CRAISE: During the glut of the season, the grape growers this year put fifty carloads of Concords in storage in Hamilton and held them for two weeks—some longer than that. They were dead ripe when they went in, and the report is 97% came out in as good condition as they went in, and were sold at a very much higher price, and were very satisfactory to the purchaser, so I do not think the statement that the Concord is not standing up is justified.

MR. HODGETTS: In the report of the Fruit Growers' Association for 1868, I notice that outside of the Keefer, the varieties being grown at the present time, were recommended by our Association. The same thing applies with plums with the exception of the Japanese plums which have come in since that time.

In looking over the Census Bureau report at Ottawa for last year, I find the planting in order of preference in plums: Lombard; Reine Claude, Burbank and Bradshaw. The Lombard and Reine Claude were recommended in 1868; practically the only new variety is the Burbank.

Strawberries: Senator Dunlap, followed by Williams and Glen Mary.

Raspberries: Cuthbert, followed by Herbert and King.

Grapes: Concord first, then Niagara and Worden.

Apples: In apples, the favourites were McIntosh, Snow, followed by Wealthy, Duchess, Yellow Transparent and Spy. There has not been a great deal of progress since 1868 in the varieties grown outside of the small fruits and peaches. The small fruits however, changed completely; in 1868 there were no varieties of strawberries grown that are grown to-day, and raspberries the same way. In peaches there is quite a change; outside of the two Crawfords which were recommended by our Association in 1868, none of the present peaches were being grown at that time. There seems to be very little progress in apples, pears and plums in that fifty odd years.

THE CHAIRMAN: This would seem to bear out the statement that the old varieties are holding their own, and are possibly yet the best.

MR. MACOUN: Are they perfect?

THE CHAIRMAN: Well, apparently not. The Lombard plums depend on the canners for their market, to a great extent; if the canners shut down on the Lombard Plum, and if Providence is as kind as it was in 1920, then we might as well scrap the Lombards. The Lombard is a vigorous grower, an early bearer and sure cropper once every two years. I think if we thinned them like we thin the peaches and apples, we might get a crop annually. The Lombard used to be called the people's plum, and I believe it is the people's plum yet, and it will be the people's plum from now on.

The Reine Claude plum is a good seller of high quality, but we found that some of the trees seem to have been badly grafted and do not bear, but the others that do bear are a good proposition.

The Japanese varieties are changing; some of them are fair and some not worth considering.

A MEMBER: Has Mr. Craise any new varieties in peaches?

MR. CRAISE: The only one I know that is being planted commercially is the Rochester; it is new on the American side. One orchard has been in bearing for two years in the Niagara Peninsula. It follows the same characteristics as other varieties of peaches; as the tree develops and gets a little aged, it will mature its fruit a little earlier; it is going to be a week earlier than the Yellow St. John, which will be a marked feature in the price. It is a good colour, free-stone peach. Mr. Fisher's first shipment of Rochesters sold at a very high figure. I have 400 trees growing, some three years and others two; I had as high as nineteen buds the second year they were in the ground, and the third year they produced an eleven quart basket to the tree.

EXPERIMENTAL WORK IN APPLE VARIETIES FOR THE ONTARIO SHORE.

SHALL WE PLANT DELICIOUS, JONATHANS, WINESAP, NEWTOWN, COX
ORANGE AND ROME BEAUTY?

MR. RYRIE: Although I have planted five hundred odd trees of Delicious, I feel that it is somewhat in the nature of an experiment. That variety is bringing the high price, selling at \$4.50 and higher in Toronto as compared with \$3.00 and \$3.25 for the Western McIntosh Red. It seems to me the only satisfactory varieties for boxing in Ontario would be the Spy, McIntosh, some would include the Snow, (but I consider the size is too small), and the Delicious. The Delicious

is probably the best dessert apple that the West has produced, but it has the defect of a tough skin and is somewhat mealy. I feel safe in saying we will grow a much better Delicious apple than the West, that is, if we can get the colour. In every way it has the qualities for box packing, and for that reason I have ventured with a small planting. I would like to know if anyone else, besides Mr. Sirett, who prophesies in Northumberland and Durham there will be large plantings, has had experience with the Delicious apple.

MR. PALMER: We have tried the Delicious for several years, and we are not prepared yet to recommend it without a qualification. The Delicious certainly does command a big price, but the reason is that it is a light yielder. In the second place, the Delicious is inclined to grow "punky" at the centre while the apple looks normal from the outside. While that may be alright from the producers' standpoint, yet eventually when the consumer is not satisfied, he won't come back. It is entirely a question of handling the apple. The tree is also slow coming into bearing, but with lighter pruning that fault can be practically overcome.

There is still a more serious consideration, and that is the matter of hardiness. We do not know yet what the hardiness of the Delicious is.

Q.—What time of the year do they grow punky in the centre?

A.—It is merely a question of holding them too long in the season. Grown in Vineland and in the Niagara Peninsula, they will grow punky by Christmas; that is, they did this past year.

MR. NEILSON: During the past two years I have had an opportunity of watching some of the varieties enumerated in this list. With regard to the Delicious we have contradictory reports. One grower on St. Joseph's Island informed us that he had grown Delicious with a fair degree of success. He is of the opinion that up to date the Delicious cannot be recommended without qualifications. I wrote to Prof. Lane of the Iowa State College and asked him his opinion about the Delicious—most of you know the Delicious originated in the State of Iowa—and although it originated there they cannot recommend it generally over the State as yet. In the State of Michigan it is not recommended by the authorities. In Ontario I know of a few cases where it has been grown. Mr. Palmer has said it has some defects, and perhaps the greatest is lack of hardiness, which has been shown not so much in Ontario but in the State of Iowa where the latitude is about the same, and the climate similar. It kills back, and is subject to sunscald to a slight extent. From my general knowledge of the Delicious, I would say we should go a little slower in planting it than in planting some of the other varieties. We have some excellent varieties in this country, and we had better confine our plantings to the varieties we know are satisfactory rather than take a chance on extensive planting of these comparatively unknown varieties.

The Jonathan, as we all know, is a good apple, with excellent qualities, but it is not entirely ideal. It is not one of the hardiest varieties, and in Ontario it is inclined to grow rather small. Mr. Sheppard, who has quite a large orchard would not recommend the Jonathan except where the best kind of soil can be obtained and the best cultural methods followed. I am of the opinion it would not be well to plant this variety outside of the Lake Erie Counties and the Niagara Section, and perhaps in the immediate vicinity of Lake Ontario.

The Winesap is not hardy enough for our climatic conditions. It is a very good apple in some parts of the United States; but is somewhat lacking in hardiness here, according to the results of my work.

The Newtown is an excellent variety, and more promising than the others for hardiness, but here again, I would not want to recommend that except in the warmer districts of the Province.

The Cox Orange I would not recommend at all. While the British like it very well, we find it is a light bearer, and it is inclined to be small, and is subject to cracking, and I certainly would not recommend it, with my present knowledge of it.

Rome Beauty is one of the most promising on the list. It is hardier than any of these others, and it is a very beautiful apple with a good flavour.

I would like to make this general recommendation that you had better go slow in planting most of these varieties. We already have some excellent varieties, and why not stick to them? Because a variety does well in Illinois or Iowa, does not necessarily mean it will do well here, nor does it mean that the varieties that do well here will do well in these States. As a matter of fact, our Spy and Greening and Baldwin which have done so well in Ontario are not satisfactory in the middle Western States. If we do plant these new varieties, just plant them in small quantities until we know more about them.

MR. HODGETTS: A number of letters have appeared in *The Canadian Horticulturist* on this matter. I do not agree with Mr. Neilson in reference to going slow on a lot of our new varieties. Ontario has gone too slow in planting a lot of the new varieties, and our Western friends are getting the cream of the prices. At the present time, the Delicious and Jonathan are beating us out in our home market because they are good box apples. There are faults with all the apples we grow at the present time. Take the Spy, recommended as about the best for Ontario, it is hard to grow a uniform lot of apples necessary for boxing on the orchard year after year. The McIntosh is pretty close to a good box apple, and if we had not taken the recommendation of our Fruit Committee forty or fifty years ago, we would not have had carloads of McIntosh coming in here from the West. I think if we had speculated a little more and taken advantage of the advertising some of the States and the other Provinces were doing we would have been farther ahead.

Let us try these varieties out. It would not do the large grower any harm to plant 100 trees of these varieties and we will soon find out about the hardiness. Let us speculate a little more on some of these newer varieties. If I had room I would plant 100 Delicious trees, and give it a trial. Mr. Sirett showed this morning some Delicious apples that were grown at Brighton, and grown to perfection down there. It may be a winter will come along and clean them out, but in the winter of 1917-1918, a lot of our best varieties were cleaned out, including the Spy. At our Show a year ago we had Delicious from the Western part of the Province, and Mr. Maycock brought Jonathans to our Convention for two years in succession which are good specimens of the variety.

Mr. Neilson talks about Cox Orange running too small. If we grow the Cox Orange for the British market, we want them small, and they are willing to pay 100s. a case for Cox Orange, where they would not go higher than 25s. for McIntosh. If they want these apples and we can grow them, let us grow them and send them to them. If we can make three times the money as on other varieties, let us take a chance and speculate on some of the newer varieties.

MR. NEILSON: I hope the audience did not understand me to say that I would not plant any of these apples, but what I wanted to say is this: You need not rush off and plant these varieties extensively until we know more about them. I will admit that the Delicious apples grown down at Brighton are fine looking; I have not had a chance to taste them yet, but I would like to know how these varieties will behave in a trying season such as we had in 1917-1918, especially after bearing a heavy crop. The observation we have made in the middle Western States is that they went out wherever there was a heavy crop—and their conditions are no worse than here, even though our climate is modified by the Lake. It is all right to plant these varieties for a trial, but when it comes to speculating with a lot of trees, it is a risky proposition, and again I would say, I would just urge you to be cautious.

MR. HODGETTS: What varieties would you recommend for the Lake Ontario shore?

MR. NEILSON: I could not recommend, with my present knowledge, any other varieties than they are growing there—McIntosh and Snow—you are safe on them. That is just my opinion. I do not want to force my opinion on any members here, but it is based on a rather wide study of the behaviour of some of these varieties in many parts of the United States and some parts of Canada. It is all right to grow trees of good quality fruit and beautiful colour, but there is not much use in growing trees that will not stand our climate under bad conditions.

PROF. CAESAR: It seems to me that Mr. Neilson's remarks may be misunderstood. He speaks in general terms of winter injury; I know he referred in a way to particular districts, but in the Province as a whole, there is the greatest degree of variation in regard to winter injury. In the Niagara District you can plant almost any of our varieties without fear of winter injury. You can do the same thing all along by Burlington and around Toronto. The Baldwin is quite hardy for all these districts, and I should say the Baldwin is probably the most tender of all our commercial varieties. When you get farther east, it is a different problem. Take an apple like the Winesap, which is an excellent apple, I should think it would be very unwise to condemn that over the Province as a whole. Growers should be very cautious with it in the colder parts of the Province, from Toronto on east and farther north than here, but for the Niagara District, which is so temperate you can grow peaches, it is an entirely different problem. Over in the Niagara District, we can grow several of these new varieties that have excellent colour and excellent packing qualities.

It seems to me if the Delicious apple can be grown on St. Joseph's Island, they could be grown any place. But you have to see where they were grown there: they are fairly far from the water, but on sandy soil in which the roots get wonderful protection. But when you cross to Ottawa and try to grow most of our apples on cold land, the result is they die out. On sandy land our hardier varieties will stand the climate. That is one of the recommendations in regard to hardiness.

While Iowa may not be any colder than Ontario, one great principle in connection with winter injury is this: constant extremes of temperature are one of the most dangerous of all conditions for producing winter injury. Iowa is in the central plain where you get a great sweep of cold spells, when the thermometer may go down very low suddenly. That is a most dangerous condition for producing certain kinds of winter injury. I doubt if we have any place in On-

tario where we are subject to these very sudden and extreme changes of temperature. I think it is a local matter, and each of these points should be decided for the special locality in which the grower lives.

MR. BAXTER: It seems to me we are now in a very serious state with respect to our apple industry in Canada. This is a very important question, and we should also profit by our past experience. Certain varieties were planted out in the North-Western States and British Columbia that did not do as well as in Ontario, which means that the growers in the West who planted these varieties are under a handicap as far as marketing is concerned, in coming in competition with the Province of Ontario, so I think we have come to the point where each Province and certain districts within the Province, should specialize with the variety that has proven to be of good commercial value, and that will do best in that locality.

I heartily endorse what our Secretary has said, that we should step out and experiment, as Mr. Ryrie is doing, by planting a few trees and finding out just what they will do before we embark on any extensive planting of these varieties that are now bringing maximum prices, such as the Delicious. The Delicious we know is probably the best advertised apple we have.

MR. MACOUN: I would like to add a few words to help the discussion on this subject, on account of our great experience on varieties at Ottawa and the tests in regard to hardiness there. I was interested in what the secretary said with regard to the fact that there are very few new varieties of apples recommended to-day over what the Association recommended away back in 1868. There are a few good reasons for that, the principal reason being that the varieties of apples we have to-day have nearly all been the result of a test of about 300 years; that is, when the settlements began in America in the seventeenth century, people began planting apple seeds, and before very long these trees came into bearing. Down through the past 300 years people have sifted out the best of these seedlings, and the principal apples that we grow to-day—the Northern Spy, the Rhode Island, the Greening, the Baldwin, and so on—were originated during the past 300 years. The Baldwin, Rhode Island Greening and Newtown Pippin were originated in the eighteenth century, and the Spy and Wagener were originated in the early part of the seventeenth century. During the past thirty or forty or fifty years, we have a few new varieties which are taking a very high place to-day. Take, for instance, the Wealthy apple; that apple was only introduced to Canada in the seventies of the last century, and the McIntosh I think was recommended about 1879, so those apples are of comparatively recent origin. We have an odd new variety coming to the front, but if we do not get rapid change of variety, I do not think we should be disappointed. It is only during comparatively recent years that any systematic effort was made in regard to the origination of new varieties, that is, by crossing varieties so as to combine in a new sort, the good qualities of both. We have at the Experimental Farm crossed the Delicious and the McIntosh in order to get a hardier apple than the Delicious, and perhaps a longer keeping apple than the McIntosh. We have a cross between the McIntosh and the Cox Orange; between the McIntosh and Wealthy, and perhaps 100 different combinations of apples, and we hope to get some day a variety or varieties that will take the place of what we have to-day.

I will give you an idea of the length of time it takes when you start to systematically originate a new variety and popularize it. From the sowing of the seed

of the apple, (after you have made the cross from the orchard in the spring and you plant the seed in the fall), to the planting of the seedling it takes three years. From the planting of the seedling tree to the time of bearing, another five years, at the very least, and sometimes ten or twelve years. From the time of bearing to confirming the characteristics of the fruit, another five years. You cannot say the first year the tree fruits that such fruit is going to be characteristic of the variety; you might have to wait for several seasons, because you may not have a particularly favourable season, and the next year it may not bear at all. So it takes about five years to find out whether that variety is going to be really a promising one or not. Then you start to propagate it, and from the propagation of that tree, another three years. Now you have your propagated tree in the orchard, and from the planting of the propagated tree in the orchard to the fruit is another six years, that is, your grafted tree is planted out in the orchard. Then you ask the nurseryman to come and take a look at your new product and see whether it is going to be popular or not, and if he says, "We will multiply that," it will take him three years to have a stock for sale. Then a fruit grower comes along and orders that from the nurseryman. And from the time of the sale until the tree is in full bearing is another ten years. Now you have the fruit, perhaps in fairly large quantities, offered for sale, but before the consumer knows anything much about that variety, unless it is highly advertised as the Delicious was, it will take five years at least. If you add all things together, you have forty years—and we have been at the work at Ottawa for twenty-four years, so we have sixteen years yet to work on, before any of our varieties will be a popular commercial sort. I venture to make a prophecy that our variety, the Melba, will be a popular commercial sort within the next fifteen or sixteen years. It is very similar to the McIntosh in appearance and quality. We have a lot of very promising seedlings of the McIntosh type that are in season earlier than the McIntosh. When I tell you that twenty-five years ago we had only five varieties of long keeping apples that we could say were hardy, and that we have to-day over 200 long keeping varieties that stood the test of 1917-1918, you can see we have made a great deal of progress in that time, but it will take many years more to sift them out.

Just a word about the Delicious apple. It is my privilege to go to British Columbia every summer, and I find it is the most popular apple in the Okanagan District of British Columbia, because there is a shortage of them. It is harder than the Jonathan apple, which is not being planted at all. The Jonathan was badly injured a few winters ago, whereas the Delicious stood the test, and the growers are banking on the Delicious as their most popular and most paying apple. But at Ottawa it has not proved hardy, and Mr. Neilson pointed out it is not hardy in the State of Iowa, so I think it is just as well to plant it with a fair amount of caution, although if a man loses 100 trees, it would not be a great loss.

A MEMBER: I have a few Delicious trees in Northumberland County. The oldest are ten years, but they stood that hard winter well as young trees, and they have been bearing for three years and are very prolific. We have yet to find any punkiness in the centre, and they carry splendidly. We consider they will grow with us and do fine.

OUR SPRAYING.

PROF. L. CAESAR, O.A.C. GUELPH.

I want to speak to you about the value of spraying as a means of securing good crops, not necessarily this year or next year but every year, and as a means of making apple orchards, particularly, profitable. I am not going to tell you how to spray or what sprays to put on. Mr. Ross will do that for you. I believe the biggest need of the fruit industry to-day is better marketing; that is what is holding everything else back. Every man should have this thought in his mind: that some day we must get all the fruit growers into one big organization. I am not at all disappointed at so many people having dropped out of the fruit growing business; perhaps in the long run it may be a good thing. The best of the men are in, and in every district we have some man who is a good leader, and the other growers will follow that man. But we have got to get the marketing end before we can talk spraying or anything else, because you can talk to a man about how to make his orchard clean, but what good is it to him if he cannot sell his apples, and we have to have an assured market to get the results.

The first proposition I have to give you in regard to spraying is this: Spraying helps to keep your trees healthy. If you want a profitable orchard you must have healthy trees. Supposing you have trees well adapted to your district, spraying will help to keep your trees healthy. That does not mean merely clean crops; spraying does something else besides keeping the crops clean. In the first place, spraying will remove from the bark in the trunk of the tree certain insects that are extracting the life of that tree. The San Jose scale alone has destroyed over 2,000,000 trees in this Province, and perhaps more than that. We have all over the Province, the oyster shell scale, and I can take you out around Mimico and show you orchard after orchard that is dying as a result of oyster shell scale. As a rule, this scale does not kill, but it is killing there. In Cobourg and Port Hope, there are fine orchards nearly dead with oyster shell scale. The point is this: when you get certain insects on the bark of your tree and on the trunk, the main branches and the twigs of your tree, extracting the food out of that tree, you cannot help but have a weakened tree, and you cannot expect a profitable orchard.

There is another way in which spraying gives you healthy trees. If the trees are not sprayed, in 50% of the years, the foliage is badly injured by insects or by disease. What does it mean when the foliage, particularly in the early part of the season, is injured in this way? Coming in the early part of the season (if the insects came in the latter part we would not mind it very much), they spoil the orchard for the whole year. They destroy the foliage and do an immense amount of damage to the tree in this way: the leaves of the tree are to a large extent the part of the tree that feeds the rest. The food substances—most of them—come up from the ground in a raw condition as liquid, or as substances taken in out of the air, and the two of these substances unite together. The substances taken out of the air and the raw material from the liquid are turned over in the leaves, and a great part of the good of your tree is made in these leaves, but it cannot be made unless you have good healthy foliage. A bad leaf cannot manufacture food; a leaf that has half of its surface eaten out by insects cannot manufacture the amount of food it should, and therefore, the injuries from these diseases and insects are lessening the vigour of your trees.

You can keep these sucking insects, then, off the trunks of your trees, and off the main branches and the twigs by spraying. You can protect the foliage against the insects that are eating the leaves by spraying. Spraying helps to keep good healthy trees, and therefore, is an immense factor in connection with the profit of the orchard.

The next point I want to impress upon you is this: Spraying will help to produce annual crops. One of the great things now being advocated is pruning to produce annual crops—thinning to produce annual crops. You may do your pruning and your cultivating and your fertilizing, and if you do not spray, what happens if it is a bad year for apple scab? All of these things go for nothing simply because the scab will get on your leaves and will destroy them, and no matter what your fertilizer is, the tree cannot be fed. If you have not got healthy foliage, you cannot expect to have these other things work to their best advantage. Therefore, the spraying of your orchard is going to help your pruning, your cultivation and your fertilizing.

I said spraying will help to give you annual crops. One of the biggest factors in procuring annual crops is to have good vigorous trees and healthy foliage. You can go through the country and pick out the orchards which will be gone in five years, or the orchards which will bear this summer. How? The orchard that has miserable, scabby foliage is not going to give you a crop next year. I know a man in Picton, who tells me that only once has he had a failure of the crop, and the reason this man has a better crop than his neighbour is because his foliage is healthy. The tree must be in good vigour to produce annual crops; the fruit buds should set early in the season, and the tree must have stored up in itself a lot of food.

The third thing about spraying is that it gives you clean fruit. We know that really good spraying will give you clean apples. This, of course, must be good spraying. What does clean fruit mean? Does not it mean almost everything? Does not it mean a tremendous amount to have clean fruit in your orchard? If you only have 50% clean apples, you are not going to have anything like the profit as if you had 95% or 98% clean, and that is not too high. Every man should aim at, at least 95%. I know a number of men, in this audience, who had last year 99% absolutely clean. Take the orchard of Mr. Phillips, at Cobourg; you could hardly find a scab or an insect in his orchard. And the orchard of, Mr. Sirett, of Mr. Watson, and others, the Government orchard at Simcoe last year and the year before; scarcely any apples not clean, scarcely any insects or any disease. It must be a great encouragement to a man to look at his orchard and find beautiful clean fruit, and it means a lot to him on the market. When a buyer comes into an orchard and sees it free from disease and insects, he wants to come back to that place; it gives the orchard a reputation. Clean fruit is an encouragement to yourself, to the buyer and to the foreign markets.

As a result of spraying you get healthy trees, and vigorous foliage, and from that you get good annual crops—one of the biggest factors—and then you get a clean crop, which gives you the full benefit of market conditions. If you are going into spraying, make a study of it and try to get the best you can; and the man who makes a study of it, gets rather fond of spraying and he enjoys it. It is always a problem, and he wants to do it so that he knows that tree is well sprayed. Spraying means thorough spraying; you cannot call good spraying, one application; you cannot be sure that one spraying will give you good clean fruit. Two

spraying won't give you as good fruit, but three sprayings sometimes will. I myself recommend four; Mr. Ross recommends three.

Another thing about good spraying is this: It cannot be done at random in regard to time. It is just as important to spray at the right time as to spray well at any one time. Some of us overlook that, and say "I am too busy to-day; I will put that off until next week or three or four days," but that means the whole loss of your efforts. We must fit spraying in with the time of blossoms and with the setting of the fruit, and we have no latitude at all or very little. We have to put on one spray just before the blossoms come, and unless you can get it on as near as possible to that time, you may fail, and unless you put it on as soon as possible after the blossoms drop you may fail. Spraying means not only doing it well and making at least three applications, but putting it on at a certain time. You have to follow for success, the times laid down in the spraying calendars; they are the results of years of experience, not of one man, but of many men.

Then again, you cannot spray well unless you have a good outfit, and you have to keep it in good shape. You lose courage, you become impatient, and you will let the spraying go if your outfit is not in good shape, so keep it in good shape, and that will help you and encourage you. As to mixtures, I would not try a material unless you are sure of it. The old mixtures recommended for our province are quite safe for our province; they may not work in every province, but we know about our own.

These are the main points I would urge upon you in connection with spraying. I want you to get the idea that good spraying will pay you in many ways many fold each year, and that means that your little trees should be sprayed and the trees that are not bearing as well as the trees that are.

OUR SPRAYING

W. A. ROSS, VINELAND STATION.

I should like first of all to discuss briefly the spraying of apples and pears, and then I may have a word to say about dusting. Some men grumble about the amount of spraying they have to do, but after all, there is no fruit growing section on the North American Continent where growers have to do less spraying than right here in Ontario. In some places it is necessary to spray apple trees four, five, six or more times, but in Ontario three applications as a rule are sufficient to give us excellent commercial control of most of the common orchard pests. In some years and in some orchards, for example in orchards infested with apple maggot, one or more extra applications are necessary, but in the average season and in orchards free of such pests, three applications are sufficient.

These three sprays should be put on every year. This cannot be over emphasized. A grower cannot afford in actual dollars and cents to leave out one of them. Each should be put on very thoroughly and each should be put on at the right time. In working among orchardists nothing has impressed itself more on my mind than this: that few growers use sufficient material to do a thorough job; few growers spray thoroughly enough.

The first application should be put on about the time the buds are bursting. This spray is applied primarily for the control of scale insects and blister mite, but it is also of great value in controlling black rot canker and apple scab.

What material should we use for this application? In the scale infested sections of the Niagara District, use lime sulphur, 1-7; in Eastern Ontario lime sulphur, 1-9. If you are satisfied there is no scale or blister mite, you can use lime sulphur 1-20, or Bordeaux mixture. In orchards subject to injury from aphids, which are the small soft-bodied sucking lice you find clustering on the leaves, and sometimes on the fruit, Black Leaf 40, at the rate of three-eighths of a pint to 40 gallons, should be added to this first spray; and the spray should be applied with great thoroughness so that you will hit practically all the newly hatched lice which are found clustering on the buds at this time of year.

The second spray should be put on just before the blossoms, or in other words at the time the blossom buds are showing pink. This application controls bud moth, case bearers, green fruit worm, and some other biting insects; but it is put on chiefly for the control of apple scab.

The third application should be put on immediately after nearly all the the petals have fallen. This spray controls scab and codling moth. In applying it, care must be taken to wet all the fruit so that some of the poison will be lodged in the calyx cups. Most of the codling worms enter the fruit through the calyx end and on feeding on the poisoned tissues they succumb.

There is only the one spray material to use for this application, and that is lime sulphur 1-40 with an arsenical—arsenate of lime or arsenate of lead. Bordeaux applied at this stage may cause very serious russetting. The last time we used bordeaux mixture for this spray—in 1918—70% of the McIntosh apples, 38% Jonathon and 27% Wealthy were badly russetted, and the owner of the orchard considered that the bordeaux spray had injured his apples almost as much as a severe attack of apple scab.

If June is very wet, it is advisable to make a fourth application on varieties, such as McIntosh and Snow, which are very subject to scab. But in the average season a fourth spray is unnecessary, according to the experiments we conducted in various parts of the province. For the fourth spray, whenever it is necessary, I would use lime-sulphur 1-40.

In connection with the control of codling moth, it is sometimes necessary, in order to prevent serious "side-worm" injury, to make a special application of arsenate of lead 2 lbs. of powder or 3-4 lbs. paste. This spray should be put on three or four weeks after the blossoms fall; that is about the time the codling moth eggs begin to hatch. However, after all the application, which is by far the most important in preventing "side-worm" injury, is the third or codling moth spray.

Only too many growers do not make this application and then wonder why they cannot control scab. How can they expect to control scab when they leave the foliage and blossoms, which later on develop into the fruit, unprotected at this critical stage when so much scab infection is liable to take place? If the base of the calyces becomes infected at this stage, no amount of later spraying will produce clean fruit.

What spray materials should be used? Two mixtures are generally recommended:

(1) Lime sulphur 1-40 and calcium arsenate 1 lb. per 40 gallons or arsenate of lead $1\frac{1}{2}$ lbs. powder or 3 lbs. paste per 40 gallons. If calcium arsenate is used, hydrated lime, 3 lbs. per 40 gallons, should be added to the lime sulphur.

(2) Bordeaux mixture 3-10-40 and the same amount of calcium arsenate or arsenate of lead as in (1).

Mr. Johnson, of Simcoe, is a great advocate of bordeaux mixture, but personally, I prefer the lime sulphur for this application, because the comparative orchard spraying experiments which the Entomological Branch have been conducting during the past four years have shown: (1) That bordeaux mixture used at this time will on some varieties, and under certain conditions, cause sufficient russetting to detract from the appearance of the fruit. (2) That under some conditions, bordeaux mixture will deaden the color of the fruit—rob it of lustre. I have noticed this on several occasions, but it was most marked in a Collingwood orchard where we carried on some experiments in 1920. The Greening, Snow and Ben Davis apples, sprayed with lime sulphur, were very much superior in finish to those sprayed with bordeaux. Even the pickers were struck by the difference, and were curious to know why the apples in the one block were so superior in appearance to those in the other. I am aware that bordeaux mixture is slightly better than lime sulphur as a fungicide, although as a matter of fact, in our own work it has always controlled apple scab every bit as well as bordeaux. I am also aware that on some varieties, notably Duchess, foliage sprayed with bordeaux may be more vigorous than that sprayed with lime sulphur. However, I am satisfied that these two advantages are more than offset by the disadvantage bordeaux mixture has of robbing some varieties of a superior complexion.

Q.—Do you use liquid sulphur or soluble?

A.—Lime sulphur. Soluble sulphur is all right as a dormant spray, but I do not care for it as a summer application, because it is not as good a fungicide as the lime sulphur; in fact, I know the Niagara Spray Company are not recommending it for summer sprays.

In most pear orchards in Ontario, two applications are sufficient: the first one put on just before or as the buds are bursting—lime sulphur 1-7 or 1-9. This is for the control of scale insects and blister mite. In orchards not troubled with these insects, I can see no object in making this application. The second application should be put on after the blossoms drop. For this I would use lime sulphur 1-40 or 1-50, and Arsenate of Lead, 1½ lbs. powder, or twice that amount of paste, or one lb. of Arsenate of Lime with hydrate of lime added—3 lbs. to every barrel of spray.

Q.—Do you consider calcium arsenate is as good as lead?

A.—Yes, I do, provided you add the lime. I have been using arsenate of lime or calcium arsenate since 1914, and I have never had any serious burning, but I saw some orchards scorched pretty badly by spraying with lime-sulphur and calcium arsenate without the lime, but you can prevent injury altogether by adding the lime. I have noticed that pears seem to be very easily burned at the stage after the blossoms drop; but by adding lime to the lime sulphur before putting in the arsenate of lime that can be overcome.

PROF. CAESAR: I used calcium arsenic one year and had no burning?

MR. ROSS: I have used it alone too and had no burning but other growers had. But injury can be eliminated by adding the lime. Calcium arsenate is considerably cheaper than the arsenate of lead. As far as I am concerned, I would use it altogether on apples and pears instead of the lead, but it cannot be used with safety in combination with lime sulphur on stone fruits.

If you have varieties of pears which are subject to scab, such as Flemish Beauty, it is necessary to spray four times. For the last three applications,

I would use lime sulphur 1-40. The first application is the dormant spray; the second should be put on just before the blossoms and the third just after the blossoms, and the fourth ten to fourteen days later.

What I want to speak about chiefly, in connection with the spraying of pears, is the control of the pear psylla. I have found this pest as far East as Trenton, and it most probably occurs in all sections where pears are grown, but so far it has only been troublesome in the warmer parts of the province. At Burlington and in parts of the Niagara district, it is very injurious and, without doubt, is one of the worst pests the grower has to contend with. Personally, after studying the psylla for the past four or five years, and after observing it at work in New York State, I am of the opinion that with the planting out of more pears in the warmer sections, this pest will become increasingly important, and that its control will be one of the biggest problems confronting the pear grower. Burlington men have said that the psylla is more troublesome than fire-blight.

How is the psylla controlled? Our experiments have shown that by modifying the spray schedule as follows the psylla can be reduced to such insignificant numbers that it will cause no appreciable injury.

The first application should be put off until shortly before the trees bloom. The trees should then be very thoroughly drenched with lime sulphur 1-7 if there is any scale present, if there is no scale, lime sulphur 1-9 and 5 or 10 lbs. hydrated lime per barrel.

For the second application, that is the codling moth spray, $\frac{1}{2}$ pint of nicotine sulphate or Black Leaf 40 and 5 lbs. hydrated lime should be added to every barrel of spray mixture. In mixing up a tank for this application, the procedure should be as follows:

Fill the tank with water then, with the agitator running, add the lime sulphur, then the lime, then the arsenical, and finally the nicotine. This spray must also be applied with great care, so as to thoroughly wet all parts of the trees. Personally, I do not know of any pest which calls for more thorough spraying than the pear psylla.

In large plantings which cannot be sprayed in about four days' time, it is advisable to spray part of the orchard in the fall or early spring with a miscible oil such as Scalecide in order to destroy the overwintering adults. This spraying should be done in November, December, March or early April, during a period of warm weather. As shown by an experiment in a Burlington orchard last year, one very thorough application of Scalecide put on at the right time will certainly give splendid results in controlling the pear psylla.

I want to say a word or two about the somewhat controversial subject of dusting. For the sake of convenience orchard pests can be divided into three categories. In the first category are the sucking insects which are controlled by means of contact sprays; in the second, biting insects, controlled by means of poisons; and in the third injurious fungi controlled by spraying with fungicides. What is the present status of dusting in connection with the control of these categories? For the control of sucking insects orchard contact dusts are still wholly in the experimental stage. We have tested some contact dusts which appear very promising, but I am sorry to say they are a little too costly to be of any use, at least in Ontario, for controlling our orchard pests; however, I hope in the future we will be able to get these contact dusts a little lower in price. I expect this year to do a considerable amount of work with some more contact dusts, but

the fact remains that contact dusts from our point of view are still wholly in the experimental stage.

Orchard dusts have on the whole proved to be as effective as spraying mixtures for the control of biting insects. That is the case at least in Canada and the northern states. In the southern states and in a state like Colorado where they have several broods of codling moth these orchard dusts have been quite ineffective.

In regard to the control of fungus diseases, an examination of the experiments, which have been conducted in the different parts of the North American Continent, shows a very great variation in the results secured by different investigators in the same year, and by the same investigators in different years. We notice the same thing in the work done by growers. Some years they have had excellent results; in other years the dusts have fallen down badly, particularly in the control of apple scab. How are we to account for these differences? As I see it they can be accounted for by the varying weather conditions under which the experiments have been conducted. It is a fact, which no one who has investigated the matter would deny, that orchard dusts are more easily washed off than liquid materials. For this reason, in seasons when there is very much rain, dust mixtures will not protect the trees over as long a period from injurious fungi as liquid sprays will. Orchard dusts I am satisfied, are very efficient fungicides as long as they are on the trees, but of course when they are washed off you can scarcely expect them to function.

I wish to refer for a moment to some experiments which Prof. Caesar and I conducted last year with liquid sprays and orchard dusts in the Newcastle District.

Last year in most parts of Ontario we had possibly the worst infection of apple scab that we have had for many years back. We had two apple orchards and divided each orchard into four blocks. We tested two dusts (1) copper arsenic dust, composed of copper sulphate or blue stone, hydrated lime and arsenate of lime; and (2) 90-10 sulphur and arsenate of lead dust. We also tested liquid sprays of Bordeaux mixture and lime sulphur. We put on all three regular applications: (1) after the buds had burst, (2) before the blossoms and (3) after the blossoms, and in all cases the work was done very thoroughly.

As to results: I will not refer to the results secured in controlling biting insects, because in all cases we had satisfactory codling moth control; I wish to refer only to the control of scab and sooty fungus or blotch.

On McIntosh: Where we used copper arsenate we had 92% scab; where we used sulphur and lead dust we had 76% scab; with a fraction in both cases. Where we used liquid spray 7% scab.

On Stark: Which is very subject to scab, where we used copper arsenic dust we had 82% scab; sulphur and lead dust 74% scab. Where we used the liquid, which was lime sulphur, 2% scab, practically nothing at all.

On Spy: The differences were not at all marked; copper arsenic 11%, sulphur and lead dust, 13%, liquid 3%.

In regard to the sooty fungus, we had not any on McIntosh or Stark, or the apples were so scabby we did not notice any. On the Spy where we used copper arsenic we had 10.47% sooty fungus, sulphur and lead dust 2.7%, liquid spray four-tenths of 1%.

Q.—What was the date you applied the material for sooty fungus?

A.—We made no special application for sooty fungus at all. We found in the two orchards, that the three regular applications of liquid sprays controlled the disease. I suppose it would be the codling moth spray which would be most effective. We made no special application but where it is necessary to make a special application for sooty fungus it should be put on about the first or second week of August. Of course in controlling sooty fungus the first thing you want to do is to improve the air drainage by opening up the trees and by getting rid of wind breaks which make the orchard conditions so favourable for the development of this disease. Where you have good air circulation, as a general rule, sooty fungus won't trouble you at all.

Q.—Do you think those early sprays have an effect on sooty fungus? A.—I am sure they have. Where we used liquid sprays we only had four-tenths of 1%, and the trees just got the three regular applications. The conditions in the block which was sprayed were really more favourable for sooty fungus than were the conditions in the dusted blocks, because the liquid block happened to be in the centre of the orchard.

Q.—What sroy would you use for sooty fungus? A.—Lime sulphur one to forty.

Q.—Do you use one to forty for the summer spray?

A.—Yes.

Q.—Never one to thirty-five?

A.—I have been using one to forty right along and it has always given me good results; you can use one to thirty-five for the second spray.

Q.—Would not you be apt to burn the foliage if you used one to thirty-five for the second spray?

A.—Not to any appreciable extent.

In the case of the McIntosh and Stark apples the scab on the trees dusted with copper dust was of a more severe type than that on the trees dusted with sulphur, and in the case of the apples that were sprayed, many of the scab spots were so small that the average grower would never have noticed them.

Dusting not only fell down badly in the Newcastle district but it failed to control scab in all sections of Ontario where scab infection was very severe. I spent considerable time last year going around examining the orchards and in all cases I noticed where the trees were very thoroughly sprayed with the three regular applications there was very little scab; whereas where the trees had been dusted they were badly infected with scab.

There was one orchard I came across in Norfolk County that proved to be rather interesting—a forty acre orchard of Baldwins, Spys and Greenings. The Greenings were sprayed three times; the Baldwins and Spys were dusted four times; for the first, second and fourth applications copper arsenic dust was used, and for the third or codling moth spray, sulphur dust was applied. The Greenings had not any more than 2% scab. The Spys had in the neighbourhood of 75% scab. The Baldwin is not at all susceptible to scab but it showed 50% scab.

It is only fair to state that in other sections, for instance in the Brighton and Trenton district, orchard dust gave very good results but there was a reason for that. Apple scab infection was comparatively slight in that district. I believe that was also the case in some other sections which I was not in.

My ideas about the status of dusting can be summed up in a few words. Dusting is not a substitute for spraying but it is an extremely useful adjunct to

spraying. The owner of a large orchard who for various reasons cannot get over all his trees with liquid sprays can use dust to advantage, especially on the varieties not very subject to scab. Then again dusting has proved to be of great value for special purposes; it has proved to be of value in the Niagara District in controlling grape mildew and in preventing the development of brown rot on ripening cherries and plums, and in controlling strawberry weevil.

Q.—What about the grape leaf hopper?

A.—We have been trying some contact dusts on that pest but our work so far is still in the experimental stage. In your case I would advise you to stick to the liquid, you can control the grape leaf hopper by spraying with Black Leaf 40 at the rate of half a pint to one hundred gallons. The time to put the application on in your section would be about the second week in July; thoroughly drench the undersurface of the leaf and you will control the hopper.

PROF. CAESAR: Most of them are in the immature state and you have to get them before they grow wings.

MR. ROSS: We had very striking results in controlling the hopper in one of Mr. J. W. Smith's graperies. We thoroughly drenched the vines about July 9th, and from then on to the end of the season the foliage remained green in this particular grapery. Whereas in neighbouring graperies the foliage was brown and rusty in appearance.

To get back to dusting, the only advice entomologists can give to growers is this: Spray by all means if you can possibly do it. But if for various reasons you cannot spray all of your trees by all means use dust, especially on the varieties not very susceptible to scab. Growers who depend on dust for controlling their orchard pests will have to be prepared to put on extra applications, timed according to the weather. Under Ontario conditions the control of apple scab seems to be largely a question of keeping the leaves and blossoms coated with a fungicide from the bursting of the buds up to two weeks or so after the blossoms drop. Three applications of liquid sprays will generally protect the trees over this period, but in the case of dusts more applications may be necessary, depending on the weather. For these extra applications sulphur dust without a poison should be of use.

In conclusion I wish to state that although I am fully aware of the present limitations of dusting as a method of controlling orchard pests, at the same time I recognize that it has great possibilities. The big advantage it has over spraying, namely speed of application and economy of labour, make me hope that further improvements in dusting machinery and in dust mixtures will make dusting as reliable as spraying.

Q.—Not to mention the price?

A.—That will come down too.

Q.—Is the composition of the dust similar to the composition of the liquid with the exception of the water?

A.—It is not.

Q.—Could not it be made that way?

A.—I do not know whether that could be done or not. In the case of copper arsenic dust the composition is quite similar to Bordeaux mixture, but unlike Bordeaux mixture the dust has the great weakness that it is washed off too easily. Some will tell you it will form a film of Bordeaux mixture on the leaf. I have used it since 1915 and I have never yet found that film of Bordeaux on

the leaf. If heavy rains come along they will wash the dust off. What we want from our manufacturers of dust materials is dust which will adhere to the leaves and stand a little rain.

Q.—What has been your experience with dusting plums and cherries for the rot?

A.—As I said before, dusting plums with sulphur is undoubtedly of great value in preventing the development of brown rot. The same thing holds good in the case of sweet cherries.

Q.—What preparation of liquid spray would you use to prevent cherry rot on sour cherries?

A.—This year we also conducted, as we have been doing for several years, spraying and dusting experiments in cherry orchards. The trees received the three regular applications; for the dormant application lime sulphur was used on all the trees. The second application was put on just after the fruit had set and when most of the shucks were off, and the third application was made about the time the early cherries were beginning to colour. For the second and third applications, Bordeaux mixture, lime sulphur, copper arsenic dust and 90-10 sulphur and arsenic of lead dust were used in the various blocks. All these materials gave us control of brown rot on sour cherries. On unsprayed sour cherry trees we had 50% brown rot. In connection with the control of yellow leaf or leaf spot on sour cherries, Bordeaux mixture gave by far the best results. Notes made in August give the following percentages: Check—seventy-five per cent. fallen or yellow; Copper-arsenic dust—thirty per cent. fallen or yellow; Bordeaux mixture—foliage in beautiful condition, no yellow leaf; Sulphur dust—twenty-five per cent. fallen or yellow; Lime-sulphur—ten per cent. fallen or yellow. You can see from this that both lime sulphur and Bordeaux mixture will control brown rot on sour cherries, but in view of the fact that Bordeaux mixture gives better results in controlling leaf spot, I prefer to use it. This year brown rot was bad on sweet cherries. In spite of this, however, in our experiments the three regular applications of lime sulphur or Bordeaux mixture controlled the disease.

PRUNING AND FERTILIZING.

New Light on Old Problems.

PROF. J. W. CROW, GUELPH.

The chief contribution of recent years to our knowledge of fruit tree management is that fruit bud determination takes place much earlier in the season than we formerly thought. I well remember when it was first stated that fruit buds had been detected under the microscope in July. Later investigators found that in some cases fruit buds showed very distinct differentiation as early as June. We know now that in the apple, fruit bud formation actually begins about blossom time and, what is far more important, that the condition of nutrition of the tree prior to blossom time determines whether or not there will be any fruit buds formed. This information appears to be fully authenticated for the apple, and I have no doubt in my own mind that it will be found to apply also to pears, plums and cherries.

We find by careful observation of the Wealthy apple that fruit bud determination is completed for the season by the time the variety has finished blooming. In some seasons at Guelph this will be toward the end of May, in other seasons it will be as early as May 24th or perhaps earlier. I do not mean that fruit bud development is complete at that time, but simply that fruit buds will be formed if they are formed at all as the result of conditions existing within the tree prior to that date. The Wealthy apple is, of course, very pronounced in its biennial fruiting habit. The tree produces fruit buds one year and blossoms the year following. Determination of fruit buds on the non-bearing tree is practically complete by the time the bearing tree of the same variety has finished blooming.

The practical application of this new information is of chief interest with respect to the possibility of securing annual crops in those varieties which fruit alternately. This will include many important varieties of apples, pears and plums. It is for this reason that our attention is now centered upon the conditions surrounding the tree in early spring, and which have to do with the amount and vigor of growth made at that season. Biennial bearing is a condition of over-fruitfulness for which the only treatment is to prevent the formation of so many fruit buds in the off-year. Moderate heading back of small branches throughout the top of the tree will force into vegetative shoots a considerable number of growths which in that year would otherwise form fruit buds. This stimulus to vegetative growth early in the spring of the off-year can be given also by the use of Nitrate of Soda and applications of stable manure at that time would no doubt have a similar effect. It is probable also that thorough soil drainage and early tillage may likewise contribute to the desired vigour of growth in early spring. It is highly probable that cold soil may act in early spring as a check upon growth and with trees of this kind under the conditions we have in mind, a check in vegetative growth in the early spring of the off-year is certain to result in a larger number of fruit buds.

If this viewpoint is correct one could insist, first of all, on the best of drainage for fruit land, also on early tillage in case tillage is to be practised.

So far as I am aware the above statements cover all that is at present known regarding pruning and fertilizing in relation to annual bearing. As has been suggested the problem in this connection lies actually in the direction of checking fruitfulness somewhat by stimulating vegetative growth. I am most anxious to see this matter tried out in commercial orchards, and may say we have at Guelph Wealthy trees which formerly bore in alternate years and which are now bearing annually, having produced full crops in 1920 and 1921 and being well set with fruit buds for 1922.

You will be interested in knowing whether the new information presented herein will have any relation to the problem of bringing young trees into bearing at an earlier date or of securing heavier yields from shy bearing trees. I am inclined to think that, in general, trees on cold soils tend to come into bearing later and to bear less heavily than those on well drained land. If this is correct the explanation lies no doubt in the better aeration and higher temperature of the drained soil in early spring. At the Indiana Experiment Station it was found that apple trees grown under straw mulch without fertilizer came into bearing earlier than those grown under tillage, although the tilled trees were considerably taller and larger. The explanation seems to lie in the soil conditions, as

the tilled trees rooted deeply, whereas the trees under straw mulch developed roots at or near the surface. Aside from the conditions which may enter into the two cases just mentioned I know of no way to hasten the bearing period of young trees, except by root pruning. There is some reason to suggest that phosphatic fertilizers may in some cases promote earlier bearing by their corrective effect on excessive vegetative growth. Certainly there is no method of pruning the top of the tree which will produce the desired result. We have been told for many years that summer pruning is a means of inducing fruitfulness, and many growers practise dormant pruning under the impression that they are likewise stimulating the fruit bearing tendency. The fact is that fruit trees come into bearing earlier with no pruning whatever, and actually bear more heavily if unpruned. The fact is also that the most important effect of pruning and the main object thereof in nearly all cases is simply to change the nature of the growth produced. We know that pruning gives results, but we should know also that the result on the tree is chiefly a matter of reducing the number and increasing the vigor of the shoots produced. The result on the fruit is similar. We reduce the number but greatly increase the size.

Summer pruning of bearing trees admits sunlight to the fruit and may greatly improve the colour but has no other value so far as I know. Dormant pruning may help to secure annual bearing if done prior to the off-year, or may increase the size of fruit if done prior to the bearing year. Aside from these the only important purposes served by pruning are in respect to forming the head of the young tree for maximum strength and securing the most convenient form and height of the same.

In general I am inclined to think we should aim to secure rather more growth on apples, pears, plums and cherries than we have been getting, and I would also suggest the liberal use of phosphate fertilizers for heaviest yields after trees come into bearing. In order to avoid winter killing it may be necessary to sow cover crops rather earlier than we have been in the habit of doing.

One should not omit to mention in a paper of this kind the possibility of inducing a heavier setting by use of fertilizers and by pruning; some varieties of pears and plums particularly, also apples to a less extent, exhaust themselves in blossoming and fail to set fruit. Severe pruning before growth starts may help to reduce the loss, and nitrate of soda applied ten days ahead of blooming gets pronounced results. There is a good reason to suppose that nitrate applied in the preceding summer may exercise a similar effect as it is absorbed in the tree and held as a reserve supply.

MR. MACOUN: I noticed Prof. Crow did not state in his paper how he got these Wealthy trees to bear every year.

PROF. CROW: I have given in my paper two methods to produce that result: one by moderate pruning back of small branches in the off year, and the other by the use of nitrate of soda supplied in the early spring of the off year. I should say a combination of the two methods would probably be more desirable. So far as biennial bearing is concerned; I pointed out in my paper the method of securing annual crops is to supply some stimulus to growth in the early spring of the off year. The same stimulus applied in the spring of the on year has no effect on the biennial bearing. If you want to correct biennial bearing we believe you may do it; at least in part and in a large measure successfully by stimulating the growth of the tree in the early spring of the off year, because as I tried

to point out it is in that year that the tree sets fruit buds and what you are aiming to do is to increase the number of fruit buds set. Then the following year you are due to have a very heavy setting of blossoms and a heavy crop of fruit.

Q.—How much do you apply to your Wealthies? A.—To a Wealthy tree eight or ten years old I would think four pounds of nitrate of soda ought to be enough.

Q.—Would manure applied every year have that same effect? A.—I would be inclined to say it would.

Q.—Every year? A.—If applied in the on year it would develop a crop of fruit in the on year; applied in the off year it may help to give annual bearing. Don't you think so, Mr. Lick?

MR. LICK: I doubt that a little. I find putting on nitrate of soda or fertilizer when you have some buds on the tree makes those set. You cannot get a crop in the off year if you have not any blossom, but if you have blossom the nitrate is a factor that carries it through the rain and storm.

PROF. CROW: Might I add a word to Mr. Lick's suggestion? Our explanation of the way this works out is this:—In a Wealthy tree which is bearing every other year you get no blossoms whatever in the off year. Now, ordinarily, a tree of that kind will set perhaps up to 80% or 90% and we have actually counted as high as 93% of the growth on a Wealthy tree as fruit buds in the off year. By forcing the growth of that tree somewhat in the early spring of the off year you change into vegetating shoots four or five or six inches long and force some of these growths, which otherwise form spurs, into shoots, and you reduce the number of fruit buds in that off year. The result is in the following year you may reduce the percentage of spurs to perhaps fifty; that means that you have about 40% of spurs which are in a position to set fruit buds for the following year, and you arrive at two sets of spurs on that tree, one set bearing one year and the other set bearing the next, and no spur bearing two years in succession, because each individual spur operates independently, producing buds one year and fruit the next.

MR. LICK: I may be wrong and you may be wrong, but we are both right on the practice.

Q.—Do you advise the use of nitrate for berries? A.—The year they are going to bear quite a number use nitrate of soda or sulphate of ammonia on strawberries, and some make two applications before the bearing season; I believe that gives results. In regard to raspberries I have not found any grower making any particular applications before the fruiting season.

Q.—How is that applied on the strawberries? A.—Nitrate of soda may be applied to strawberries, simply broadcast, with safety but it should not be applied when the leaves are covered with dew and especially just before rain. Acid phosphate is a valuable fertilizer for strawberries or raspberries. I would like to have land in good rich fertile state. These materials are only supplements.

Q.—Do you advise commercial fertilizer instead of barn-yard manure?

A.—I am glad you asked that question. I would not want it to be understood at all that I recommended fertilizer in place of stable manure. I believe the proper use of the fertilizer is a supplement to stable manure. I believe you have a difficulty in making commercial fertilizer take the place of farm manure. I realize many fruit growers are not able to get stable manure but the continued use

of commercial fertilizer gets you into difficulty with regard to the humus of the soil and the soil gets hard and dry and pasty.

Q.—What kind of fertilizer do you advise? A.—The only fertilizer I can recommend, almost without hesitation, for almost any condition in fruit growing is acid phosphate. Either phosphate or bone meal. I believe all orchard soils and fruit soils are deficient in phosphate. As far as I can learn there is no deficiency of potash, but phosphates give decided results on the crop. I would not want that recommendation applied to every condition indiscriminately; but I believe if any general recommendation can be made that would be it.

Q.—Do you mean acid phosphate? A.—Acid phosphate or super phosphate; some growers prefer bone meal. There are only two phosphate fertilizers that would be used in general practice, acid phosphate or super phosphate, and the other is bone meal.

Q.—Do you believe heavy cover crops turned in, take the place of barn-yard manure? A.—If you turn in a crop like red clover, it has the value of many tons of barn-yard manure.

Q.—Have you ever tried sweet clover? A.—Not particularly, but we have our own orchard sown partly to sweet clover now. Sweet clover makes a tremendous growth the next spring, and that is the time I would want it under ground. If we are going to cultivate the orchard at all, cultivate early in the spring, as early as the land is fit to work.

Q.—Do you plow. A.—For myself I plow my orchard the first thing in the spring. I would not wait for the spring growth in order to turn that soil over; I believe that is a mistake. I realize it has a value because you have roots there to turn under.

Q.—How late in the fall would it be safe to plow? A.—It is safer to plow later than earlier. I would prefer to plow the orchard about the last thing in the fall. If you plow an orchard too early, I have seen this work out with peach trees, you may actually keep those trees growing in the fall when they should stop growing and rest up, and I would leave the plowing until the last thing in the fall.

Q.—With heavy soil it is dangerous? A.—With heavy soil when plowed up rough and cloddy I would harrow it over, break up rather than leave it in that condition for the winter, because those big openings will certainly let frost into the ground.

Q.—Would you plow your apple orchard every year? A.—Would I recommend sod mulch of an orchard? I am not sure but that I might for the reason that there are some splendid orchards in this province under sod. I would say in that connection of course that sod without fertilizing or mulching is the worst possible thing you can do; but there are some good orchards handled by the sod mulch method, where grass or clover is cut and the soil is mulched around the tree and supplemented with stable manure or fertilizer.

MR. CRAISE: In regard to that a neighbour of mine had an apple orchard that he had cultivated that way. It is all right in the average year possibly, but about three years ago—I think it was that mild winter—there was quite a little growth of grass around the trees and a couple of inches of frost, and the mice got in there and he had fifty per cent. girdling in the spring.

PROF. CROW: That sort of thing can be taken care of, but this observation might be made in that connection: It is a well known fact that where trees are

grown under sod mulch, and the trees are properly fed, those orchards suffer less from winter killing. I do not want to make any suggestion here that is likely to be misunderstood. I do not want to recommend sod mulching for orchards, but I would say if I had an orchard I would certainly consider that practice and perhaps try it out, because I am told there are some important advantages. I would not want to recommend it, but it is worth thinking about.

Q.—Do you get better results from phosphate used along with stable manure?

A.—I would say so decidedly.

Q.—What chemical do you find most valuable in connection with stable manure? A.—I would say phosphate fertilizers. Stable manure gives you all the nitrogen you need which for fruit trees is not a large amount.

DISCUSSION ON GRADING, PACKING AND PACKAGES.

O. W. BAXTER: This is one of the subjects we have for consideration at the forthcoming fruit conference, and I have no doubt the delegates who have been selected by this Association to represent the fruit growers of the Province at that conference would appreciate very much having an expression of opinion from the growers here.

It has been suggested that the advisability of adopting the Imperial pint and the Imperial quart boxes as the two standard containers be considered at this conference. Last summer the markets across the line were very attractive to our berry growers in Ontario. I had occasion to visit Grimsby in the height of the season and we found buyers from the largest markets on the other side there who assured me they were prepared to buy twenty-five car loads of Ontario berries, but they said, "We cannot ship your berries into our markets in the quart boxes unless we stamp the box with the actual contents of the package," which was not practical at that time. So they asked us if there was any objection to importing the standard berry box of the United States. We consulted our manufacturers to see if it was possible for them to supply these boxes, but they said they could not do so. The buyers said, "There is nothing for us to do but bring in these packages," but they did not succeed in getting the supply; therefore, our growers in Ontario lost the sale of twenty-five car loads of berries. While we might not always find such a market in the United States, still I think it is the feeling of many that we should be prepared to take advantage of these markets when they are offered. In British Columbia they use the two-fifth's quart box and the pint.

MR. FLETCHER: I represent the Clarkson Fruit Growers' Association. I have made inquiries amongst our growers to find out the consensus of opinion on this matter of standardizing our quart box as compared with the American quart, and the members of our Association at Clarkson are not favourable to the American quart. They feel that at the present time if we introduced the Imperial quart that we will not obtain any more returns for an Imperial quart of berries than what we do for the four-fifths quart, and besides we will have to pay more for picking. With the present cost of land and of producing a quart of berries we feel we cannot afford at the present time to hand out this gift to the consumer unless we can be assured that we will be sufficiently remunerated for the increased size of the box.

MR. CRAISE: Speaking for the Niagara Peninsula Growers, last year we did not make any experiment with regard to strawberries in the pint box, but we did with raspberries, and we just received slightly over two cents less for pints than for quarts. I do not think that is making any gift to the consumer, but it is a nice thing for the producers. If we can get more money out of the pint box than out of the quart, let us have it, for we need it.

MR. BAXTER: I would not advocate using the quart box for raspberries, the pint box would be the largest package suitable, and only in a year of large crops would we use the quart box for strawberries.

MR. PALLETT, Clarkson: The first market of our Ontario berry is destroyed by the importation of American fruit. We supply the home market for the canners and the housewife; we give her good fresh berries in our own quarts. As you all know during the first week of the berry season the berries are firmer than during the second week and during the last week the berries become soft. If we hold to our quart as at the present time and endeavour to create a better home market, I believe every berry will be sold in Ontario. It seems only fair if our government at the present time allows the American people to flood the market with their quart because the price here is better than in their own market, that we should have reciprocity, and our quart should be allowed to go to the other side. I think in this case we are giving something to the American people and getting nothing in return. It does not seem fair to me if the American quart can compete with my quart in Toronto why my quart should not compete with theirs in Buffalo. Our quart up to date is good enough for our own people, and should be good enough for the American people.

MR. JOHNSON: They cannot tell early in the season whether they are going to have a good crop of berries or not, and they must have a certain amount for canning, and making into jam. Any who have been on the other side will know that they pay more for the berries than we do over here. The American buyers came to us last year and paid thirteen cents a box for our berries in the four-fifths quart, and in the full quart they paid one cent more a box for the berries than they did in their own state.

MR. ARMOND SMITH: In the first place being a jam maker I will try to reply to Mr. Johnson. We do not buy in the United States just to lower the price of berries in this country. We buy there in the expectation that they are lower there than the berries will eventually be in our own country. Taking a span of years we consider it would be safe in buying a certain number of berries there cheaper than in our own country, but we only buy a certain proportion over there. We are personally in favour of the Imperial quart box and the Imperial pint box, and we think our growers should use the same box as the United States because we feel we could take advantage of the American market when the price is higher there; but I differ from Mr. Johnson that the price is always higher in the United States. We cannot tell what price we will get until right in the season, and then sometimes it is too late to get the quart boxes. Taking all in all, I think it is best to have the Imperial quart box and be able to enter the American market when it is higher than ours.

MR. FISHER: As a grower of strawberries I have heretofore very largely held the view that our friend from Clarkson expressed, but I have begun of late

to see things in a little different light. I believe it will be beneficial for our growers and for our markets if we standardize these packages.

MR. SHOOK: In regard to the standardization of the quart, I do not feel as Mr. Fisher does. He says he has seen things in a little different light lately in the last few months. I believe the Clarkson Fruit Growers' Association are the heaviest shippers of strawberries and raspberries of any association in the province. We handled last year in the neighborhood of two million quarts. We feel that the quart we have now is the one we want to stay with, and we have found out that three of our quarts will make four for the retail dealers and if you increase the size of the quart we do not think we would be sufficiently remunerated to pay us for the berries. It is an established fact that the Italians make four quarts out of three, and our trade is mostly retail.

MR. BUNTING: I think we will have to meet the American proposition and adopt the Imperial pint and quart.

MR. MAHONEY: It would be a great advantage to our growers in this province if they would adopt as far as possible the American package.

The experience of our company this year is that the pint package is the proper package for raspberries, and if we had the American box for our strawberries we could have unloaded a considerable quantity there and relieved the local market.

MR. WATSON: That being the case why should not the peach and plum growers here to-day adopt the American container for these products. I think we are losing sight altogether of the keeping qualities of the Canadian berry in comparison with the American berry. We all know that the American fruit will stand up much longer and much better than the Canadian fruit. On the Toronto market last year there were many consignments of berries which should have brought 14 or 15c. but which were sold for 4c. Why? Because the growers are not equipped with pre-coolers. Large growers with eight or ten acres should have pre-coolers. If we ship in American boxes to the Toronto fruit markets the loss is going to be very great through spoiling. I am sure the commission men in Toronto would bear us out in that statement. I think we are making a mistake to advocate the standardization of the American package until our products are handled completely through associations that have pre-cooling plants. We have at the present time and the box which we now have is preferred by the Toronto consumer.

THE CHAIRMAN: The final decision of this matter rests with the convention at Ottawa.

STANDARDIZATION OF BERRY CRATES.

MR. BAXTER: We received numerous complaints as to the quality of the berry crate which was being supplied to the growers. Our good basket manufacturers will know in many cases the containers were not sufficiently strong to enforce the safe carrying of goods beyond the railway station. We have been requested to control the manufactures of berry containers, as we do baskets

and other packages. I would like to express the Fruit Branch's appreciation of the great co-operation we have had from most of the basket and package manufacturers during the last year, and I think they too will be pleased to have the berry container clearly defined.

THE CHAIRMAN: The question is whether the construction of the 24 or 27 box crate should be standardized like the baskets and which of these two will carry our products more safely to the markets. I think we can leave that in the hands of our representatives.

GRADES FOR TENDER FRUITS IN OPEN PACKAGES.

MR. BAXTER: At the present time the only regulations in respect to fruit in open packages is that each package shall be marked with the name and address of the packer. The principle of grading farm products is generally recognized to-day. I think we feel that any agricultural product that is not standardized is not keeping pace with the markets, and I think our growers feel there should be grades adopted for fruits. Having that in mind we prepared grades for tender fruits two years ago. Nothing was done with it at the time, but last year at the annual meeting of the Niagara District Fruit Growers Association these tentative grades, prepared largely for the purpose of bringing out discussion, were submitted at these meetings and committees were appointed to go into them. I do not know that those committees met. But the Niagara Peninsula Growers Limited, realizing the advantages of grading, took the matter up and in consultation with the committees appointed by the Association made certain changes of which we were glad to approve, and the Niagara Peninsula Growers Limited used them in their business last year. Mr. Mahoney will be glad to tell us with what degree of success. At the time we prepared these we had no thought of incorporating them in any legislation. My idea was that if the growers would adopt these grading rules, the Fruit Branch having federal supervision might recommend their adoption and their use probably for a year or two to try them out. During that time we could determine what changes may be necessary. These grades have been tried out in the Niagara Peninsula to a certain extent during the past year, and it may be advisable to recommend their adoption for the next year or two.

MR. MAHONEY: As Mr. Baxter has stated, we established grades for the growers, and we met with considerable success in doing so. While it was a difficult matter the first year of our operation to secure the co-operation of all the growers in observing these grades strictly, still we made considerable progress, and we feel in this coming year's business by having a sufficient number of inspectors to see that these grades are maintained it will be a great advantage to have in our selling operations. There is no question about it if we had the backing of the Fruit Branch in this matter we would much more easily accomplish the purpose we have in view.

CENTRAL PACKING HOUSES FOR ONTARIO.

COL. H. L. ROBERTS, GRIMSBY.

In regard to central packing houses, the experience of the Niagara Peninsula Growers this year has demonstrated beyond question that the whole crux of the tender fruit question lies in the matter of grades. It has also been demonstrated how much improvement has been made in grading in localities in which co-operation has been enforced as compared with those in which it has not. Anyone who has seen the results of handling fruit that has gone through central packing houses as compared with fruit that has not gone through will have no doubts of the advantages in that regard. I hope it will be possible for the tender fruits to be handled through the packing houses as well as apples and pears. In the old days in Grimsby we started co-operative packing houses for tender fruits, such as peaches, and we had considerable difficulties. We had not the facilities to handle them. Packing houses should be well adapted for their purposes, both in connection with the location for shipment and its flexibility for the quantities of fruit coming in. There are two principal things to be considered in the matter of construction. If the stuff is to be handled over a grader then it will have to correspond more or less to the methods used in the citrus industry and other industries where the crop is graded and where each individual's product is brought in and kept separately and then put through the grader and packed out. On the other hand if you have tender fruits in many varieties such as St. John and Crawford peaches, which will not stand the grading, I do not think there is any other method than giving the individual members of the company their own location in the packing house and having their fruit put into a recess as it were and packed there and graded as it goes out. If that is to be done it is necessary that the division between these packing areas should be flexible. These are matters that require to be worked out, but I think they can be overcome, but by far the more important point is that the locality of the packing house should be convenient for shipping purposes.

We made a fatal mistake in placing our packing house convenient for the growers without considering the matter of placing it convenient for shipping. The idea of that was to get the grower to bring his stuff to the packing-house early in the day so that the packing operations could start early. But you cannot get the growers to do that, they wait until they have their load ready, and you cannot start your packing until the afternoon. If the packing-house is placed convenient for shipment, that is on the rail, you will avoid the rehandling necessary when it is placed convenient for the growers. Even if it is not possible to have cold storage facilities at each point it is at least possible to have refrigerator capacity near the plant, say, an iced car placed to take the surplus that does not get off in the shipment. By that method it would be possible to work out the packing of tender fruits. I feel that the question of tender fruits is a vital one for the Niagara Peninsula and that is my excuse for introducing that end of it so much. I do think this problem, although not simple is solvable, and it is up to the Niagara Peninsula to solve it, because I do not believe we will ever succeed in grading that will give us the confidence of the consumer and be fair to the grower until we have fruit moving through central packing houses and very rigid inspection on the fruit that does not go through. I think exactly the same applies to the apple and pear proposition. There are many districts where by far the more satisfactory way of handling the fruit would be through central

packing houses, and there are other districts where conditions would not allow it. In that case, rigid inspection is absolutely necessary. As far as the Peninsula Growers are concerned I hope their policy will include at least the beginning of a central packing house for tender fruits next year.

ADDRESS.

HON. MANNING W. DOHERTY, MINISTER OF AGRICULTURE, TORONTO.

I congratulate you on the success of your meeting, and also upon the wisdom shown in the making up of your programme. I notice from it that you have not devoted your attention alone to one phase of your industry but, in addition to considering the best methods for the protection of your crops, you are considering also the best methods of marketing your crop. I believe that our farmers in this Province and in this Dominion to-day realize that there is but very little use in producing anything unless there is a market for it. I have been pleased during the last year to see a spirit developing among those engaged in all the branches of agriculture, a spirit which would indicate that they realize the prime necessity of acting together in the handling of their crops.

Only two weeks ago I had the pleasure of attending the Agricultural Economic Conference in Washington which was called by President Harding. That conference was called because the men in charge of the Government of that country realized that the great agricultural industry of the United States was in such a critical position and condition that it was jeopardizing the safety of every other industry in the country. At that conference we had some of the leading bankers and business men of the United States, and we had farmers from every branch of the agricultural industry and from every State in the Union. I came away from that conference with the feeling that at least the business men in that country were fully seized with the importance to them of the agricultural industry being stabilized and being put upon a basis where men could go into it, and with the exercise of intelligence and industry, be fairly sure of a return on their investment and on the labour they put into it. They realize that they are up against a condition which has got to be rectified if the whole industrial fabric of that country is not to go to the wall. That is why we had on that platform men like Mr. Myers, of New York, the multimillionaire banker, who was a most enthusiastic advocate of an extension of a grading system which would meet the needs of the farmers of the United States. President Harding made a statement, on which he defied contradiction, that in viewing all the agricultural countries of the world, this great truth is brought home to us: the countries which are going through this period of deflation best are the countries in which the agricultural industry is best organized; and he pointed to the various countries and indicated the degree to which they were feeling the depression. He said, "We can go one step farther than that: we can go into each and everyone of these countries (and he analyzed the conditions prevailing in the various branches of the industry in these countries), and we find that the various branches of the agricultural industry have prospered in 1921 exactly in proportion to the degree of their organization. In the face of this, it behooves every man, professional and business, to do everything in his power to enable the farmers of the country to become organized." It was shown there, and I want that point to be understood in this country, that whereas in the beginning it was felt by many of those who occupied a place in the wheel of machinery by which we transact our busi-

ness, that the organization of the farmers was going to eliminate them, that feeling has entirely been dissipated, and those who are in the business of handling agricultural products to-day—commission men and such like—acknowledge that they would not for the world have these organizations go out of existence, and they want them to go on and to prosper.

Let me say in particular reference to the matter under discussion, that I have for years held that what we must have, if the industry is to be permanently successful, if it is to be stabilized, is economic production. If we are to compete successfully, we must produce economically. Assuming that to have been accomplished, or on a fair way to accomplishment, then the step we have got to look to is this: that our products are marketed economically and profitably, and the economic and orderly marketing of farm products has never been successfully accomplished in any other way than by the organization of the producers themselves.

After we had heard men from the livestock industry in the West, men representing the corn growers in the Middle West, men representing the cotton growers—branches of the industry which were not organized—depict the deplorable conditions which were prevailing, it was very encouraging to have a man like Mr. Powell of the Citrus Fruit Organization of California stand up and say: "While 1921 was not the best year that our organization ever had, I can say that there was not a member of our organization growing fruit in 1921 but made money; we had a big business, over \$100,000,000, and everything was sold."

Now, it was encouraging in a year like we have gone through, with the decreased purchasing power of the people, to find others, by organization, had reached out and placed their crop no matter how large the crop was, and no matter to what degree the buying power of the public was embarrassed: they simply extend their markets.

In our fruit industry here, I have all along felt a great deal of attention should be devoted to this, and as head of the Department of Agriculture, I am very anxious to have the views of those who are directly concerned in that industry, the fruit growers of the Province.

The matter of the establishment of central packing plants has been brought to my attention several times, and I can assure you, it has received sympathetic consideration from me, because I have always claimed that we can never place our products on the markets of the world, so as to get the greatest returns, with the least expense, unless we properly grade, standardize our grades and insist upon our grades being lived up to. I feel this is absolutely true in regard to the fruit industry because, while I am prepared to acknowledge the intelligence shown by the farmers in British Columbia in their organization, I have time and time felt that we should wake up, and if we cannot get and hold other markets, at least hold the markets right at our own doors, and hold at least a fair percentage of the markets not only in Western Canada but in Great Britain. It is shown beyond dispute that we can produce in Ontario as fine apples as can be grown on earth. But our apples do not occupy the first place in the markets of the world, nor in the mind of the buyers of the world because we have not sufficiently established our grades and insisted upon our goods going on the markets in those grades.

This trophy shows that we can produce and we can win. The matter of another Show this year in England is under consideration at the present time. My own opinion is that we cannot afford to lose the opportunities we have at this

very critical stage in the history of our agricultural industry, of showing the people of the world that we can produce the goods and do produce them, not only in our fruit, but in our livestock, and in every other line. I feel that this Show held in England once every two years would be quite sufficient, but a meeting was held a few days ago over there, and the feeling seemed to be that they would like the Show again this year. Our representatives there made the suggestion that if the Show was to be held again this year, Canada should be a little better represented upon the executive so that they may have a little more to say in the selection of those who are going to do the judging. I believe the suggestion was accepted, and although it is not distinctly settled, it looks at the moment as if the Show would be held.

In regard to these packing plants, I believe that every possible encouragement should be given to the grading of our products. How far should the government go in these matters? This is a very important question. Personally I have always felt that the government should go only so far and then should have absolutely nothing to do with the management of the affair. I feel that these organizations prosper better if they are founded on proper principles, and are left under the management of the right kind of men.

I would like the department to assist in getting our growers to adopt the grading principle for all their fruit. With that in mind, I have drawn up, in rough draft form, what was in my mind, and I would like to have from this meeting suggestions. If you feel that the Department should not assist in any way in the establishment of these grading stations, all well and good; if you feel that the Department should assist in some other way, than herein suggested, I would like to have it; if you feel that we should not assist to the degree that I suggest, I would like your recommendation.

It is not necessary for me to read this in detail. The idea is that the Department should offer assistance to Co-operative Fruit Organizations in the establishment of grading stations.

An association shall mean any co-operative organization of fruit growers incorporated under the Ontario Companies Act or other Acts of the Province for the purpose of marketing any kinds of fruits, and holding at least 100 acres of bearing fruit lands, the fruit from which shall be contracted to be sold through the association. Upon the recommendation of the Minister a grant shall be made in accordance with the provisions of this Act for the purpose of erecting or providing for the necessary storage of the fruits grown by the members of the association, such grant shall not exceed 25% of the present value of the building or a total of \$1,500 in any one case.

It may be you think 25% is too much or not enough; in either case your views will be very seriously considered. "The plans and location of the buildings must be approved before the grant is paid and no such building shall be disposed of by any association without the consent of the Minister. The control and management shall be invested in the association, and the association shall fix the charges and may accept fruit for grading, packing and storing from growers not members, on such terms as may seem reasonable." I am not sure whether that paragraph is satisfactory or not. The idea I had was this: that in these grading and packing houses facilities shall be available for all the growers in the district, so that it shall not be possible to keep them in the hands of half a

dozen growers. A grower might not at first see the advantage of such facilities and might not come in the first year but in another year he might change his mind. I think the facilities should be made available to any grower in the district who wants to come into the association.

Those are the only paragraphs of any importance. I would like the views of the meeting, in the first place, the necessity for the establishment of central packing plants, and your suggestions as to how our department can best assist in this work. I know that this move has the approval of our friend Mr. Baxter and his department, and I am sure that the Federal Fruit Department will co-operate and assist in every possible way. No doubt Mr. Baxter himself will state to what extent his department will be prepared to assist in carrying out this work.

OUR SALES ORGANIZATION—THE NIAGARA PENINSULA GROWERS, LTD.

T. J. MAHONEY, GRIMSBY, GENERAL MANAGER.

In dealing with the matter of sales organization, I will confine my attention to those in the Niagara district, because it is with the sales organizations in that district that I am particularly acquainted. It was my privilege last year in speaking before this convention to deal with the organization of the Niagara District Grape Growers' Company, and I explained to you the object for which that company was organized. It was organized in order to deal with an emergency which had arisen during the year 1920, on account of the basket famine. Owing to the acute shortage of baskets in the district it was felt by the grape growers, disaster would overtake the grape crop unless some means were taken to control the basket famine which was prevalent in the district. In order to meet that situation the grape growers, at a meeting held in St. Catharines on the 7th of August, 1920, decided to organize a company in order to secure, in the first place, sufficient packages to market their crop, and in the second place to secure a fair price for their product, which up to that time had been fixed by the wine manufacturers and dealers.

The two-fold object which the grape growers had in organizing were certainly accomplished in their first year, because we imported from the United States enough bushel hampers to market 200 cars of grapes in the United States. Of the 410 cars of grapes which we handled between September the 13th when we opened our office in St. Catharines and the 11th day of November when we shipped our last car load there were 341 placed on the United States market, the balance were sold in Ontario, and the price obtained by the grape growers for the crop that year was certainly the highest they had ever obtained in the history of the Niagara Peninsula.

It was the success which the grape growers had the first year of organization which convinced the other grape growers in the district that organization and co-operation would possibly solve a good many of their troubles, and if the organization had been in existence in 1920 when there was an abnormal fruit crop it would have saved the fruit growers much of the loss experienced that year. No person was more convinced than the Minister of Agriculture, and it was under his auspices that the meeting was held in Vineland on the 26th of November 1920, for the purpose of discussing the advisability and practicability

of organizing a fruit marketing company for the remaining fruits of the district. At that meeting there were twenty-five prominent growers present, also representatives from several small co-operative companies in the district. After a thorough consideration of the matter it was decided that the proposition was practicable and feasible, a sub-committee was appointed to draft rules and recommendations which were later submitted to a much larger meeting held in Hamilton on the 28th of December, 1920.

That meeting considered the rules and recommendations as drafted by the committee, and after some revisions it was decided to adopt these rules and recommendations, and to appoint provisional directors for the organization of the company. These provisional directors worked for some four months, and they certainly had a very difficult problem to solve. They had to reconcile the conflicting interests in the district, line up the five small co-operative companies which had a total membership of eighty, and they also had to persuade some of the dealers in the district that it would be in their interest to line up with the new organization and help make it a success. In accomplishing these different objects they were successful to the extent they were able on the 11th of May, 1921, to have an organization meeting of the Niagara Peninsula Growers. I may say that the fruit growers of the Niagara district certainly owe a debt of gratitude to the provisional directors who did such hard and difficult work in order to start this company on its way to progress.

The grape growers' organization included the whole district from Hamilton to the Niagara River, and I think it was the first co-operative company organized in the district which ever attempted to include such a large extent of territory. The Peninsula Growers in organizing included the district from Burlington to the Niagara River and the Fonthill district. It was divided into fourteen divisions: Burlington, Stoney Creek, Fruitland, Winona, Grimsby, Grimsby East, Beamsville, Vineland, Peachland, St. Catharines, Niagara-on-the-Lake, Queenston, St. Davids and Fonthill. A manager for each division was appointed to look after the shipping and do the other business of the company.

It might be of interest to know how the stock of the company was made up, and the amount each fruit grower had to subscribe in order to be a member. The stock of the company was non-dividend bearing, and the amount each member had to subscribe was based on his crop turn-over for the year 1920. If he had turned over less than \$2,000, one share; between \$2,000 and \$4,000, two shares; \$4,000 and \$6,000, three shares; \$6,000 and \$10,000, four shares, and over \$10,000, five shares. He was required to put all his fruit through the company and the fruit was pooled according to grades and varieties, and he was paid for the fruit every two weeks, on the 10th and 25th of each month. 20% was held back to cover overhead expenses of the company. After the business of the company was completed on the 31st of December, the balance from this 20% was returned to the owners. We closed our books on that date, and it was found the treasury expenses amounted to 12%, and the balance was returned to the growers. Of that 12% treasury expenses, 1½% was absorbed in equipment and organization expenses, which really should be charged to capital expense, so that the annual cost of operating the company was really 10½% instead of 12%.

In beginning the first year's work the company had a number of difficulties to contend with. The objects of the company were possibly misunderstood by some, and we met with difficulty on that account. Of course we expected opposition from those interests which had prevailed in the past and whose business

would be affected by the success of an organization such as our company aimed to become. We were also misunderstood, I think, to some extent by the general public. There was an impression created that the company was merely a big combine organized for the purpose of boosting prices and it was not going to give the public any compensating advantages. The principal object was by proper grading and systematic marketing to eliminate the waste which had prevailed in the district in the past, and we know waste and loss is of no benefit to any person. There is no question about it that with proper organization and a proper system of marketing, waste can be largely eliminated to the mutual benefit of the consumer and producer alike.

We had every difficulty to contend with in the abnormal weather conditions which I think were probably the worst we have had in thirty years. The government record showed that the summer of 1921 was the hottest in thirty years, and as a consequence all crops matured in advance of their normal time. As a result the shipping qualities of the fruit were very much inferior to previous years. There is also disadvantage in marketing any variety of fruit before its proper season because the people are not ready for it, and the result is they do not buy as freely as they otherwise would.

There was another factor which influenced the market to a considerable extent, and that was the limited amount of fruit used by jam manufacturers and canning factories. As you know the jam manufacturers and canners carried over a considerable stock from 1920, and they were not in a position in 1921 to take their usual supply, which had a very serious effect on the marketing problem. Another factor also was the high cost of transportation as compared with other years. It cost this year to haul an eleven-quart basket of fruit to Winnipeg, 40c., and that 40c. had to be paid whether the fruit arrived there in a condition to be commercially used or not. That was certainly a very considerable increase over the year 1920.

There was another item of expense which we had to meet, and that was 50% increase in the cost of icing over 1920. 1920, the cost of icing was \$4 a ton; 1921, \$6.50.

Those are factors which certainly affected the market this past year, and on top of that we had the great amount of unemployment which existed in Canada, and which decreased the buying power of the country to a great extent.

Notwithstanding these difficulties the company has had a successful year. We market forty-nine different varieties of fruit and vegetables, and the total volume amounted to something over 1,700 cars. Of the different varieties marketed there were eighty-five cars of strawberries; thirty-five cars of raspberries; 564 cars of peaches, seventy-nine cars of plums; forty-nine cars of cherries; 324 cars of grapes; 133 cars of tomatoes; fifty-four cars of canteloupes, and there were a large number of other varieties of a lesser amount. The whole totalled something over 1,700 cars. We succeeded in disposing of them to fairly good advantage. A good deal of discussion took place this morning with regard to the question of grading. One fact which was impressed upon us more strongly than any other was the necessity of grading if we wished to get any place in successfully marketing our fruit. There is no question about it, one of the principal handicaps which the fruit growers of the Niagara district have had to contend with is the lack of uniform grading, and in order to overcome that handicap one of the essential things is a central packing house and better cold storage facilities than we have had.

Although the Niagara district is one of the oldest, possibly the oldest, district in Canada, it is a remarkable fact we certainly have a lack of facilities for handling our fruit profitably and systematically. When our company started business this year we did not have a central packing house in the whole district. We know it is by means of taking advantage of central packing houses and cold storages that the B.C. growers and co-operative companies in the Western States have been able not only to drive us out of the western market, but to take our own markets here in Ontario; and I think it is safe to say, as has been said on different occasions before, that the only way to reach our competitors successfully is to adopt the methods they have adopted and which have proven successful. There is no doubt about it that the means which have enabled the British Columbia growers and co-operative companies of the Western States to pack and ship their fruits so successfully is because they used central packing houses and cold storage facilities and, as I have stated, one of the big handicaps which the company was under in its first year's operation was lack of these facilities in the Niagara district. We had in the shape of cold storage facilities only the obsolete structure at Grimsby with a capacity of fifteen cars, and there is no doubt thousands and thousands of dollars have been lost to the fruit growers this year because we lacked these necessary facilities. It is true they had cold storage facilities in Hamilton, but those were not convenient to the growers and could not be taken advantage of in the emergency which arose in the middle of the tender fruit crop in a hot season such as last year.

Possibly no better example can be given than that which was afforded by the Grape Growers' Company in storing, during the slump, some fifty cars of grapes in Hamilton. It was done under difficulties, because it meant a lot of handling and an added expense of something like \$3,000. However I think it saved the situation with regard to the grape crop in that critical period of the season. It certainly saved the market from breaking, and those who are engaged in marketing know what it means when a market breaks, and how difficult it is to get it back. On the grapes which were stored at Hamilton we realized at least anywhere from \$15,000 to \$20,000 more than we would have realized had they been sold at that time instead of being put into cold storage, and we did something that had not been done before by any other company either in the United States or in Canada. The sales manager of the American Fruit Growers who handles our American business stated that in his opinion no such attempt had ever been made to store grapes, and the fact that it was successful speaks well for the judgment of the men who were particularly instrumental in trying out that experiment.

It might be asked what the company has accomplished since it started some nine months ago. There is one thing the company has accomplished, and that is by its constant driving home to the growers in the district at the different meetings held, the absolute necessity of better grading of their products. I think we have also demonstrated the fact that the best results can be secured through grading in a central packing house. One district under our control certainly got this idea, and acted on it, and that was the Burlington district. Shortly after the season commenced the growers invested \$13,000 in a central packing house at Burlington. It may be of interest to those who are thinking of a central packing house in their district to know that on the 4,000 or more barrels of apples put through the packing house the average cost of packing ran from 15c. to 27c. a

barrel less than in other parts of the district, so the amount saved in packing alone on the apples was sufficient to cover the interest on the investment. Pears were also packed from that central packing house, and of 119 cars of pears which the company handled, eighteen were exported to the Old Country, and they brought a very satisfactory price and helped to relieve the market here to that extent. There would have been more sent to the Old Country had we the necessary facilities for packing and grading. We did not have those facilities except in the very contracted space in the cold storage at Grimsby and Burlington. Had we facilities in other parts of the district to take care of pears we could easily have shipped another twenty-five or thirty cars, and the price here would have advanced accordingly.

I am glad to know that the Minister of Agriculture has seen the necessity of central packing houses, and is inclined to give some encouragement in the way of financial assistance. I do not know whether it is the proper time to express my opinion on the amount of assistance he proposes to give. I was impressed by the photograph passed among the members yesterday showing the space in the fruit show at the exhibit at London. You might have noticed there was a sign which stated that the Province of Ontario had 300,000 acres of land planted to fruit. If the Province of Ontario has 300,000 acres of land planted to fruit surely it is up to the government to do a little more for the fruit growers of this province than they have done in the past. I am not making this statement by way of criticism at all, but there is no question about it that when the fruit industry of this province is in the condition it is in at the present time, where we are practically driven off our own market by British Columbia and the United States, it is certainly time for the government to take definite action, and this applies to the Dominion Government as well as the Provincial.

In 1920, the biggest fruit year we have had in this province and possibly in the Dominion, there was imported from the United States \$19,000,000 worth of fresh fruits, and when you consider exchange ranging from 12% to 18% you will realize the amount of toll the people of Canada paid the United States fruit growers. I consider the giving of some substantial assistance to keep this money at home is a matter of sufficient importance to impress on any government, whether Federal or Provincial. For that reason I hope that the Minister of Agriculture for the Province of Ontario will endeavour to be a little more generous in the grant which he proposes to give to the central packing houses.

With regard to cold storage facilities I am glad to say that owing to the public spirit of one of the citizens of Grimsby, Col. Roberts, to whom the fruit growers owe a debt of gratitude, we will have next year in the Grimsby district an up-to-date cold storage and pre-cooling plant with a capacity of sixty-five tons of ice a day and a storage capacity of fifty cars. Owing to the publicity which has been given to the necessity of cold storages for our fruit industry by the Provincial Growers' Company and the Niagara District Grape Growers' Company, there is also under way a similar plant in St. Catharines. In fact, I understand from Mr. Welsted that \$200,000 is already in sight for that project, and we will have these facilities in St. Catharines this year. There are also districts where cold storage facilities would be commercially profitable, and it is up to the government, whether Provincial or Federal, to give the necessary assistance to these districts to enable them to have such a building. I do not know what the regulations are from the Federal Government, but whatever they are they should be changed if necessary in order to apply to sections like Burlington or other

similarly situated sections of the province. I think these remarks are worthy of consideration, and I am glad the Minister of Agriculture and the Chief Fruit Commissioner for the Dominion are here, and I hope they will impress on their departments the matters which have been brought before them.

There is no question about it that grading is a very important factor to successful fruit marketing. In order to do your grading properly it is necessary to have central packing houses; and in order to ship, especially for long distances, it is necessary to have cold storage and pre-cooling facilities. If we could have these facilities and make use of them as we expect to do there is no reason why we should not be able to hold our market here in Ontario, and also gain some of the advantages we have lost on the western market. There is also no reason why we could not sell a good deal of our products in the Old Country. It has been done this year to some extent, and it can be done to a greater extent with the proper organization and facilities. When we can be sure our product is properly packed and graded and so shipped that it will arrive at its destination in a satisfactory condition we can then establish a brand, and when we reach that point we should make use of an intelligent advertising campaign of our products.

One reason why our company this year has refrained from any extensive advertising has been due to the fact we were not sure of our grades although the company established its own grades. We have 650 growers in our company, and many of them have had no experience in grading, and they could not be expected to learn everything in one year. It would have been a real hardship had the company endeavoured to make all the different growers grade up to standard because it was simply impossible for them to do so. We hope to arrive very shortly at the stage where the growers will grade up to the grades, established by the company. When that time comes and our products are properly shipped and packed we feel that real advertising will be of some use to the company and the fruit growing interests of the province. We certainly think that in the accomplishing of these different objects which I have cited, we should have the assistance and backing of both the Provincial and Dominion Governments, because there is no doubt about it that other parts of the province and the country is watching what might be considered the experiments going on in the Niagara Peninsula.

Of the 952 shares of stock which we had, 20% was paid up by the members of the company amounting to about \$18,340. The total cost of our equipment and organization was \$33,280, and the difference between that and the \$18,340 was made up by deducting an amount from the sales, instead of calling for further payment of stock from the members. The intention was, when the company was organized, that 30% should be paid on the 1st of October, 1920, which would make 50% paid up, but owing to the short crop it was felt it might be hard to call that 30% on the 1st of October, so we omitted doing so. The balance of the organization and equipment expenses was made up by deducting 1½% from the total sales turn over of the company of \$1,501,000, which included \$324,000 worth of grapes sold for the Niagara District Grape Growers.

THE NIAGARA DISTRICT GRAPE GROWERS, LTD.

W. G. MONTGOMERY, MANAGER, ST. CATHARINES.

Mr. Mahoney has thoroughly outlined the inner workings of the Niagara Peninsula Growers, Limited, but he is also President of the Niagara District

Grape Growers' Company, and their work is carried on along the same lines as the Niagara Peninsula Growers, Limited. It is on a co-operative basis and the company has been operating fifteen months to date. The association known as the Niagara District Grape Growers was formed by a number of the large growers throughout the section in 1920. In August 1920 they received their charter as a limited company and started doing business on October 5th of the same year. In that year they shipped some 410 cars of grapes, 310 cars to the American markets and the balance sold on the Canadian markets, making a gross turn-over of half a million dollars. That was the first year's operations of the Niagara District Grape Growers' Company, with some 400 members and from 150 to 200 shareholders. The past season of 1921 we feel has been the hardest we have ever had or will have on account of the market conditions. The grape crop this year was at least one month earlier, and conditions throughout the United States and Canada were far from normal. Of 752 car loads of grapes, about 346 cars were shipped to American markets and 325 cars sold on the Canadian market, and the balance sold to the local wine manufacturers; making our gross sales turn-over for the year \$890,000. You understand the Grape Growers' Company handles nothing but grapes, and controls approximately 90% of the grapes grown in the Niagara Peninsula between Hamilton and Niagara Falls. We have 900 grape growers and 350 of these are shareholders of the company.

The policy of the company has been, as far as stock is concerned, to make it optional for the grower as to whether he takes stock or not. We have \$41,000 stock subscribed to the company; that has all been subscribed voluntarily. 10% has been called up, and the stock has not been used in any way. That was the policy of the Association before the company was formed.

In 1920 we paid back to the growers of the Niagara district who delivered grapes to the company as a first payment on their entire grape crop \$85 a ton, and at the end of the season we pooled our profits pro rata and we paid back \$33,000 to the growers as a bonus. This year we were up against an entirely different proposition. We had very serious market conditions throughout Canada and the United States, and the biggest problem was the grape crop coming on at least one month earlier, and this year we paid the growers the highest price I think ever paid in the Niagara Peninsula for any grape crop. We paid the growers on an average 40c. per basket, that is six-quart baskets, and \$85 a ton on bulk shipments. I believe that was due to co-operation as we had probably 90% of the grape crop under contract and the growers belonging to the company stayed with it from start to finish and we finished the year very satisfactorily.

Mr. Mahoney has mentioned the cold storage facilities, and also that we stored fifty cars of grapes in Hamilton. This was just an ordinary storage warehouse, not equipped for handling grapes or storing fruit. We got this warehouse into the best shape we could and stored these grapes, putting them in from the 15th to the 25th of September and taking them out from the 15th to the 25th of October. They were in on an average of four or five weeks, and we sold that fifty cars at a profit of \$12,000 over and above the price we would have had to sell them at had we sold them at the time we stored them.

The Niagara Peninsula Grape Growers are anxious to have cold storage facilities throughout the district. We are quite willing to contribute in any way we can. It cost us \$5,000 to put those grapes in Hamilton, which we could have saved had we storage facilities in the heart of the district.

At the present time our market in Western Canada on grapes is going back, due to the fact that the Western fruit jobbers say they cannot handle our product and make a margin of profit on account of the rates. There were eight or ten cars of California grapes going into Western Canada in 1921 to every car of Canadian grapes. That is not a very healthy condition, and it is something we want to get away from as soon as we can. One of the things that will help us get the Western market back is cold storage facilities in the Niagara Peninsula. Both companies are working along the same line in harmony, and I believe the two companies will be two of the strongest co-operative companies in Canada, financially and as far as membership is concerned. We have only been operating fifteen months, and the first year we handled 410 cars and 754 in 1921. We have used the American market to a great extent in the past two years, but we feel the American market will not always be there, and we are anxious to develop the Canadian market as much as possible.

The growers apparently are well satisfied with our operations this year, and many men who did not belong to the company are joining with us and putting their grapes through our association, and I feel that in another year or two the Niagara District Grape Growers will be 100% strong.

We use the standard Canadian package, a six-quart basket, for which we get the same price on the American market as the Americans get for their four-quart baskets. If we had a standard package between the two countries it would make a big difference to the grape growers.

THE CHAIRMAN: In reference to the remarks of the Hon. Mr. Doherty, Minister of Agriculture, we appreciate very, very much the proposition Mr. Doherty has made, but the executive feel that we have not the time to take up a discussion on the point here, and we have recommended the appointment of a committee to consider the matter. Mr. Fairbairn has a motion covering this, and I will ask him to present it.

MR. FAIRBAIRN: We listened with interest and pleasure to Mr. Doherty this morning. It seems to me not only in the best interests of this meeting and of the fruit growers generally, but also in the best interests of the scheme which the Minister proposed, that a committee from this meeting be appointed to confer with Mr. Doherty and possibly also with the Dominion Minister of Agriculture, Mr. Motherwell, on the matter. I will, therefore, move that the following committee be appointed to confer with Hon. Mr. Doherty on the proposed aid relating to Central Packing Houses, and also to take up with the Hon. Mr. Motherwell the matter of assistance in financing Cold Storage Warehouses: Mr. Fisher, Burlington; Col. Roberts, Grimsby; Mr. Palmer, Vineland; Mr. Johnson, Simcoe; Mr. Craise, St. Catharines; Mr. W. H. Gibson, Newcastle.

This resolution, seconded by Mr. Grierson, was carried unanimously.

THE NORFOLK FRUIT GROWERS' ASSOCIATION.

J. E. JOHNSON, SIMCOE.

Your secretary has placed my name on the programme to talk to you a few minutes on the success of the Norfolk Fruit Growers' Association.

This association was organized sixteen years ago, appointing myself as manager and secretary-treasurer, which position I still hold. I might say that we have had sixteen successful years for the apple growers, besides making Norfolk County famous as an apple growing county.

Our success is due to education, publicity, and co-operation.

EDUCATION.

When we organized in 1906 we began to hold educational fruit growers meetings in different parts of the county, assisted by the Provincial Department of Agriculture. The success or failure of a fruit grower's association depends a great deal on quality. Our aim being success, we realized the importance of producing good quality fruit. In 1908 we co-operated with the Department of Agriculture and made personal visits with every member of the association, talking over with them the best way to care for their orchards, besides, apple grower's meetings were held in many parts of the County of Norfolk.

It is useless for me to take up time in dealing with the many problems of education which we carried on in caring for the orchards.

PUBLICITY.

Publicity was our greatest asset after we had produced quality apples. The press took a great pride in using a considerable amount of printer's ink in the advertising of Norfolk apples which in return, was also a great encouragement to our growers. In short, the press, and rightly so, put Norfolk on the map as a county well adapted for the successful growing of summer, fall, and winter apples.

CO-OPERATION.

Each for all and all for each carried on under good management must succeed. I have had the opportunity of personally gathering information from many of the largest co-operative societies in America. We also read of the great success of co-operative associations across the Atlantic. I believe it would be far easier to manage a co-operative association in Denmark, as there for generations they have been doing business under strict rules which make it necessary that all merchantable produce grown by the producers must be turned into the association.

We are always told by selfish interests in Ontario when we organize a co-operative association "Oh, they will soon go out of business, they cannot last." This was the case in Norfolk. The apple dealers who had previously bought apples from our Norfolk growers for 50c. to \$1.00 per barrel would tell our growers all sorts of things to try to discourage them. Their two greatest assertions were "Spraying would kill their trees" as one of our rules was "The members must spray." Another, "The manager cannot get as much for the apples as he could afford to pay the farmer." I have been in places (but not in Norfolk County) where this line of talk had the desired effect, as in many places the grower's main object is to get more for his produce than his neighbour so he can make himself believe that he is a better business man. Jealousy amongst the producers has cost this country millions of dollars.

There is no way produce can be handled to better advantage than by co-operation, and be in a position to purchase supplies for the growing of the crops at the minimum price and selling the produce at the maximum price which will encourage production. This is the solution for the lowering of our taxes.

I feel a little timid in talking on management of a co-operative association but I am going to give you my personal ideas.

The manager must be a big man and the larger the association the broader ideas he must possess. Therefore, the members of a co-operative association must first make up their minds to secure a capable manager and that they are willing to pay him a good remuneration for his services. There have been more associations fail by having a manager not big enough for the job than from any other cause.

Now we will return to Norfolk and deal with our small association, the Norfolk Fruit Growers, which does not require a big man. Our members are all Norfolk boosters and rightly so, because they have something to boost for. They have handled successfully sixteen crops of apples on the plan of each for all and all for each. There is no jealousy there. We are all jolly good fellows, each one believing that in a few years Norfolk will be the greatest county in Canada and his ambition is to do his best to make it so. Our greatest asset to co-operation is kind thoughts for one another.

We can only attain our objective by co-operation. Come to Norfolk, where we handle all kinds of produce co-operatively. We will make you feel at home by telling you everything we know, believing that frankness is our strongest argument in our efforts to secure your confidence.

This is our co-operative platform in Norfolk County.

OUR GRADING, PACKING AND PACKAGES.

SPECIFIC NATIONAL GRADES FOR APPLES. BOX AND BARREL GRADE NAMES.

SHALL WE ADOPT THE WESTERN GRADES FOR BOXES ONLY?

MR. BAXTER: The subject of grades for apples opens up a very wide subject, and I do not know whether you have the time or inclination to discuss it. I think the differentiation of grade names between boxes and barrels is perhaps more important.

THE CHAIRMAN: That is what I think.

MR. BAXTER: I might explain briefly that this subject refers to a specific interpretation of the present grade definitions; in other words: that the size be determined in inches and the colour in percentages. My personal opinion is that so long as we have one grading law for the Dominion of Canada, it is not desirable that we make any changes in the No. 1 and No. 2 grades, but I think it would be to the interest of the industry if you should give a definite opinion as to the grades.

With respect to differentiation in grade names as between boxes and barrels, this, I believe, will be one of the most important questions discussed at the Dominion Conference. Our Commissioner in the United Kingdom sometime ago issued a report to the effect that Canadian exporters of boxed apples were losing money by reason of the fact that their apples were graded 1, 2, and 3, and they came in competition with the North-western States apples which were graded fancy, extra fancy and choice. That report has been given publicity and our friends in British Columbia, who are in the boxed package altogether, have taken the matter up, and at their recent convention they passed a resolution that the grade names be changed, and that we adopt the fancy, extra fancy and choice for boxed varieties only. That, of course, involves a new definition, probably, for the quality which shall be packed in boxes. I asked the Commissioner if he would prepare a memorandum in support of his contention that we were losing money by reason of this fact, and he has been good enough to do so. I have that report with me, and if it is the wish of this meeting, I will read it because it gives a clear description of the situation in the markets of the United Kingdom, and will give the members of this Association an opportunity of expressing their

opinion to the delegates who come to Ottawa, because I am sure the British Columbia representatives intend to put forth every effort to have this change made. I cannot give you my own opinion, because I have not had the privilege of watching the results of our marketing in the Old Country, but I am prepared to accept Mr. Forsyth Smith's opinion without question:

CASE FOR ADOPTING AMERICAN GRADES AND GRADE NAMES FOR CANADIAN BOXED APPLES.

1. United Kingdom importers are practically unanimous in holding the view that Canadian boxed apples are seriously handicapped in competition with their competitors from Washington and Oregon, by their grade nomenclature as No. 1, and No. 2.

2. The American grade names, Extra Fancy, Fancy and Choice, are all suggestive of excellence and quality, and tend to reinforce and direct the judgment of the buyers to the highest limit rendered possible by the actual quality as ascertained by inspection. Even No. 1, does not connote as high a degree of quality as Extra Fancy, and No. 2, and No. 3, definitely tend to suggest inferiority, which is most undesirable.

3. The boxed grades of Canadian apples are comparatively new on the market. The buyers have been familiar with the No. 1 and No. 2 barrel grades, and what they represent in quality and selection, for many years past. They inevitably tend to associate the boxed grades with the well-known barrel grades, to the decided disadvantage of the former. American boxed grades are under no such handicap. They have no association whatever with barrel grades.

4. The theory of the Canadian Sales and Inspection Act is that No. 1, and No. 2, apples as defined, are the same whether packed in boxes or in barrels. As the Act only indicates the minimum requirements, no account is taken of the fact that the grading standard for boxes must necessarily be higher than that for barrels, and no account is taken of the fact that a fair proportion of No. 1, barrel apples could not be packed at all in boxes as No. 1. Again, the Act clearly contemplates a definite distinction between the sizes graded as No. 1, and those graded as No. 2, and, in practice, this is the case with the barrel-packed apples, No. 2, always being so consistently smaller than No. 1, that, on this market, size is recognized as the principal distinguishing factor, and the only one that is commonly put forward when claims of misgrading are made. In the case of boxes, there is no such distinction until we approach sizes that would justify grading as No. 3, in barrels. Boxed apples are commonly packed as small as 200, in the No. 1. Grade, although in the case of most varieties, these are much smaller than "medium size for the variety." It would, however, clearly be unreasonable to insist upon a stricter interpretation of the Sales and Inspection Act, in view of the fact that these smaller sizes, if of prime quality, usually make higher prices on this, perhaps, the most important market of the future, than sizes 96 to 138, which, of course, are No. 1. sizes. The one outstanding distinguishing factor between No. 1, and No. 2, barrel apples is, therefore, not a factor at all, or one of negligible importance in distinguishing the two grades in the box pack. In other words, Boxed No. 2, in spite of their being covered by the same legal definition, are not, and, under existing commercial conditions, cannot be, the same as barrelled No. 2's, and being essentially different, there is no good reason for retaining them in a category to which they do not actually belong, especially when this carries with it a suggestion of inferiority which is detrimental to their competitive situation on the market. The plain fact that will have to be faced by Canada sooner or later, is that boxed and barrelled apples are essentially different in their grading requirements, and should, therefore, be described by distinctive grade names, and by differing definitions, as is done in the United States. The American box and barrel grades developed separately, and each does the best for its own with outlet or hindrance. The Canadian grades were made for barrel apples, and have been applied to boxed apples, to which they are not adapted.

Assuming that it will be generally conceded that commercial and not scientific or pomological considerations must be the paramount factors in determining grading principles, the fundamental point must be realized that the conditions affecting the sales of barrel apples are and always must be different from those affecting sales of boxes. Small-sized barrel apples could not be sold at high prices. Small-sized boxed apples can and are. The preference for comparatively small sizes is inherent in the

box package and is due to conditions that apply to boxes and do not apply to barrels. It is not that the market prefers small sizes *per se*. Other things being equal, large sizes would be preferred. But, the higher standard of selection in boxes makes them more costly. The public cannot afford to buy large sizes in boxes except at a discount, as they would, otherwise, be paying too much per apple. They are willing to forego large size, in itself desirable, if they get quality in its stead, at a lower price per unit. They can afford to pay, and do pay a premium for large sizes in barrels. And if boxed apples could be offered at a price equal to or less than barrel apples per fruit unit, large boxed apples would also sell at a premium. In this connection, it is interesting to note, that, this year, as a result of the lower prices of boxed apples, much better relative prices have been paid for large sizes than in previous years of high-price boxes. These facts, in all, appear to point logically, to the necessity for separate and distinctive grades for distinctly different products, boxed and barrelled apples.

This, however, while so closely connected with the question of the change of box grade nomenclature as to be quite relevant in discussing it, raises a somewhat broader, and, probably, more controversial issue. It may also be objected that the size considerations mentioned do not apply to the home market, where the cost of boxed apples to the consumer is so much less than abroad that size preferences are reversed, and, size 138 is more desirable, and, if sold by count, as in England, would bring more money than 175, and where, in fact, the demand for large apples is probably very much the same whether they are packed in boxes or in barrels. It would appear, therefore, that immediate necessities would be met if present legal grades were retained as the minimum indications for both boxes and barrels, and it were enacted that, for boxes, the grade names, Extra Fancy, Fancy and Choice, should correspond to No. 1, No. 2, and No. 3, with the one modification of expressly, or, as at present, tacitly, permitting smaller sizes for export. Box shippers with the advantage of distinctive names for the distinctively higher grading that must necessarily characterize the box pack, could then proceed to make and maintain their own grading regulations at as high a level as those of their competitors, Washington and Oregon.

5. If the above recommendation is adopted, it will be necessary to raise the color requirements of No. 2 to equality with Washington and Oregon Fancy.

6. The trade of the United Kingdom is practically unanimous in holding that a change to American grading nomenclature would result in higher prices for British Columbia apples.

9. An importer calls attention to a point that is worthy of some consideration. A fair proportion of fruit is bought at auction by buyers, who are commissioned to buy by inland wholesales, who are either not members of the buyers associations, and, therefore, have not access to the salesrooms, or who cannot afford to take the time to be in personal attendance. These buyers give their orders by mail, and, as American box grades are long established on the market, they ask for Extra Fancy and Fancy. It would be quite impossible to substitute Canadian No. 2, for these requested Fancy, and so Canada loses this business.

10. It has been objected to the various considerations set forth above, that the Fruit Trade Commissioner has been emphatic in his declaration that the bidding at auctions is based upon judgments of quality and value formed after the most minute inspection of each particular lot offered for sale, and that, therefore, there is an element of inconsistency in insisting that grade nomenclature is more than of negligible importance in determining values. This inconsistency is more apparent than real. Nothing can alter the fact that, in the case of Fancy Grade inspected for the sale, the attractive names act as a plus force reinforcing the buyers' inspection judgment, while, in the case of No. 2, this designation is a minus force, working against it. The quality of remarkably good No. 2's would probably be able to prevail against this adverse influence. They would invite a particularly close inspection, and such inspection confirming first impressions, the influence of known quality would be stronger than that of nomenclature. Average or inferior No. 2's, would be passed over as devoid of particular interest, and the debasing effect of the No. 2 classifications would have full effect.

MR. FOSTER: Looking at this matter first-handed, without having time to think about it, it appears to me that the Canadian brands would be handicapped on the European market in competition with the American, and that is not a good position to be in. We certainly are entitled to get all the credit for our fruit, and all the money out of it that it is possible to get in an honest way. I do not

think it is a good thing to have too many brands or too many names, and I think it is worthy of great consideration as to whether a change should be made. Anything that will work out in the best interests of our fruit and its marketing is what we want.

THE CHAIRMAN: I think we are all prepared to leave our interests so far as this is concerned in the hands of our delegates, without any further discussion.

OUR FINANCIAL RETURNS.

INVESTIGATIONS INTO THE FRUIT INDUSTRY IN DURHAM COUNTY AND THE NIAGARA PENINSULA.

C. E. RILEY, O.A.C., GUELPH.

I do not propose to lead you through a maze of analytical figures in regard to the fruit business: I would rather discuss some of the general economic features as they exist at the present time. I notice on your programme that you have devoted time to the study of methods of controlling and handling those pests which affect your business; you have discussed methods of improving your crop; you even have discussed putting labels on your boxes to procure an extra 10c. for your product; but the ordinary farmer sows the grain on his land, looks up into the sky and prays that the Lord will send rain, and he is pretty well finished with it. I have never yet met a really successful fruit grower who was not always worrying about some problem in connection with his fruit growing business. There is an eternal fight to make a business out of it. Why do we have a business of that kind?

If we started away back at the beginning, we might find that the factor of land was the important thing. In the beginning of the history of Ontario, we had land in abundance with practically no value, except that land which might be easily cleared would be taken sooner than any other land. All land had practically an equal valuation for its ability to grow ordinary grain crops.

In certain sections, some person discovered the fact that he could grow apples, and he could make more money growing apples than growing grain, and he immediately raised the value of his farm, because it would produce more than his neighbour's would growing grain or other crops. Then his neighbour discovered he could grow apples, and that his land was as good as the first man's, so he raised the value of his farm. We have an example of that in the counties east of Toronto in the apple growing section where all land values are raised. The average land value in the survey which we made in Durham County of land without apples was \$100 or \$96 per acre; the fruit lands were valued at \$184 per acre because they could produce larger revenues per acre.

In the first survey we had 165 farms of 125 acres each, of a total valuation of \$16,000, making an average labour income of \$896. We had thirty-five farms devoted to orchards, of an average of 110 acres; average value of each farm \$184 per acre; average labour income \$964, which is \$68 higher labour income. Those men had increased their revenues by planting apples, but they had raised their land values so closely to the increase that to pay 5% on their investment a man was making practically the same thing in the old farming business as in the fruit growing business.

During 1919-1920 and 1920-1921, the period of deflation started. Increasing of land values is good while revenues are increasing, but in 1920 things began to look a little blacker for the fruit grower and for the farmer; the price of products dropped, and the costs of running his business if anything went up. We found that in 1920, that the mixed farmer instead of receiving interest on his money and a labour income of \$896, had a minus labour income of \$702, that is these 165 farmers in Durham County who were not growing apples had nearly \$1,600 of a drop. The apple growers had a labour income of \$298; they survived that deflation period a little better.

That drop of \$1,600 might be represented by four things: Two things wiped out the labour income of \$896 received in 1920; one was the decreased price of farm products that brought the average returns down to about \$500, and the increased cost wiped out the balance. The minus \$700 was made up in writing off the inventory; values of livestock dropped; values of feed and supplies dropped. Fruit growers did not have such a large amount of stock on hand, and they did not have that deflation in their inventory; apple prices were maintained fairly well, as a matter of fact they increased in 1920.

Apples in 1919-1920 sold at \$3.63; the average cost of producing them was \$4.17. In the following year, the selling price was \$4.02, and the cost of production \$4.84, showing an increase not only in price but an increase in cost resulting in a decrease of their profits, but they survived that fairly well. The business should be down pretty well to the bottom now.

With regard to the Niagara district, we have probably the greatest example in Ontario of increased values in farm land. Those old farms once had the same values as any other farms, but we have prosperity in the Niagara district—or evidence of it at least—that is not equalled in any other part of Ontario in agricultural lines. We have farms there worth five and ten times the market value placed on them. Improvements of all kinds have been made possible by that increase in value, which is due to the fact that somebody could grow fruit there and make a profit on it.

Land is different from any other kind of capital in existence; there is a possibility that land will increase in value. That is a speculative element.

There is another big speculation in the fruit business, and that is in the business itself. In ordinary farming their returns range from zero to \$3,000 or \$4,000, with farms all the way in between. In fruit growing sections, you will find a group of say fifteen farmers with incomes quite low and fifteen others with incomes quite high, and there is practically no intermediate stage, which indicates a speculative business. That speculative element can be to a certain extent overcome by a diversity of business, to cover the greatest possible number of sources of revenue.

We found with a yield of under twenty barrels per acre, the cost of producing a barrel of apples was \$6.48; where the yield was from twenty to forty barrels per acre the cost was \$5.36; over forty barrels, \$3.76, allowing the owner wages and interest on his money. We found the man with the low yields spent \$7.60 per acre for labour, or \$23.00 per acre of orchard land. We find the man with the high yields spent \$11 for every acre in his farm, or \$68 for every acre of orchard which he had. \$23 yielded under twenty barrels of apples; \$68 yielded practically three times as much money. More money spent for labour resulted in cutting the cost practically in half by increasing the yield. That is an important factor.

With regard to our tomato investigations, although the average cost might indicate a loss figuring interest and labour, yet, we find that where a reasonably large amount of money and labour were expended on the crop, it proved profitable. There is one thing in connection with those costs that has to be borne in mind: farm costs vary from other manufacturing costs in that so much of it may be made up of the owner's own labour and his own capital. We find that the tomato growers where the cost, figured on a basis of interest, labour and all expenses, amounts to 90c. a bushel, had sufficient out of 50c. to pay all direct cash expenses. We find the average man in growing tomatoes paid all his expenses, had 30c. for labour and 3.1% interest on his investment.

Studying the returns in other sections of the Niagara district, although we found the average returns to be fairly uniform in each section, yet we found in St. Catharines, for instance, an average labour income of \$2,000 for 1920. We found the best 25% of these men making \$6,000 labour income, and the poorest 25% making minus \$1,000. There is a difference of \$7,000 between the best culture and the poorest culture. Around Jordan and Vineland we found the largest profits were made on those farms where a large amount of small fruit and grapes were grown. Around Beamsville on those little farms, we could not find any apparent cause for the difference in income, until we began studying the personal factor.

We divided the farms up according to the years that the men had spent on those farms, and we discovered a very important factor in connection with the success of the fruit business. We had twenty-two farms on which men had spent less than two years, with an average size of thirteen acres, and an average labour income of \$503—39% adjusted labour income. Adjusted labour income means adjusted by size; men are buying smaller farms than they were fifteen or twenty years ago, on account of the price, so that these farms were not uniform in size, and we had to average them, taking 100 acres as the average size. Men who had from two to five years' experience, their labour income was 87% of the average; men on the farm for six to ten years had a labour income slightly above the average, 106%. Men on farms over twenty years had an adjusted labour income of 127%, or 27% better than the average. We had fifteen old homestead farms, farms run by young men, some of them graduates of the colleges, averaging thirty-three years of age. There were two generations of experience in the fruit growing business there, and their adjusted labour incomes was 157%, or 57% better than the average man. Their average was \$3,966 actual labour income. Inexperience gave 39% income: two generations of experience gave 157%, a difference of 118% due to experience.

There are a number of ways of improving the fruit growing business. The easiest way is to improve your markets and raise the price. Another way is to reduce the cost, and you can do that by cutting expenses, or increasing expenses and increasing the returns.

In all the work we have done in the fruit growing business, we have found the increasing of the yields to be the essential thing. I do not want to leave any wrong impressions with you. I think I have made it clear that for the average man, the fruit growing business offers the same opportunity as any other business. If he has no experience he will fail to a greater extent than in any other kind of farming; if he is a good man he will make more money in the fruit business than in any other kind of farming, and there is probably no department in our agricultural development that requires so much experience, so much knowledge and so much study as the fruit growing business.

THE FUTURE OF FRUIT GROWING IN ONTARIO.

J. W. CROW, PROFESSOR OF HORTICULTURE, O.A.C., GUELPH.

The Province of Ontario possesses natural advantages for fruit growing which, I fear, are not fully recognized, even by ourselves, and which in some respects are not surpassed by those of any State or Province on the continent. Our climate, soil and location with respect to markets are so much more favorable than those enjoyed by any of our competitors as to make our continuance in the business certain. Fruit growing ought to be, and eventually will be, a far more important source of revenue than it is to-day and the advantages I shall attempt to outline are in my judgment actual and real.

It is not generally realized that in our inland location, a thousand miles from seaboard, and lying between latitudes 42° and 45° we nevertheless possess extensive areas of good fruit soil ranging in altitude as low as 250 feet above sea level. We possess a summer season long enough and warm enough to mature properly any variety of apple, pear, plum, cherry or peach which can be grown anywhere on this continent. We possess a winter season moderately cold but steady and on the whole our climate is singularly free from the extreme changes of temperature common to other inland regions and characteristic of almost all of the commercial fruit districts of America. We derive a greater benefit from the modifying effect of the Great Lakes upon temperature, snowfall and humidity than any of the states lying adjacent thereto. Our summer season has sufficient rainfall and is sufficiently free from periods of extreme heat to bring strawberries to a high state of perfection with most creditable yields. Raspberries, currants, gooseberries and grapes are likewise grown to perfection.

Our local topography is in some cases of such a nature as to secure for us the maximum benefit of our favorable latitude and low altitude. The fruit belt proper of the Niagara district in Ontario holds the record, I believe, for continuous commercial crop production. The only complete peach failure known in this district occurred in the year 1914. So far as I am aware no commercial peach district in North America can equal this record. The explanation lies in the fact that our winter is sufficiently steady to keep the buds dormant and to prevent the mid-winter advances which are common and disastrous in other peach districts, not excepting even those of Georgia or California. I have no doubt the same condition pertains at least in some measure to plums and cherries also, as they are likewise easily damaged by cold weather following mild periods in winter.

In general I believe careful observation would establish the fact that fruit trees in our climate bear more heavily than they do farther south; also, that they are longer lived and more vigorous. Fruit trees in the north require less heat to bring them into bloom, and I am inclined to the view that the heavier bearing of trees in the north may be due to the extraordinary vigor of early spring growth in our climate. In this connection it may be pointed out that the comparative coldness of our winter may be a blessing in disguise. Freezing is well known to have the effect of shortening the rest period of hardy plants and there is in my mind no doubt that the resulting vigor of growth may have an important effect upon bud formation. In this connection I beg leave to refer you to another paper written for this convention and dealing with early spring growth conditions as related to fruitfulness.

It should be remarked also that the climate of the Province of Ontario is remarkably free from frosts in the growing season. There are important fruit

districts lying a thousand miles nearer the equator than we are in which frost fighting apparatus forms an essential part of orchard equipment. A total crop failure among tree fruits due to frosts at blossom time is almost unknown in this Province.

With respect to markets I am very glad indeed that this subject is now beginning to receive the attention it has long merited. It would appear that there is no lack of markets for high grade fruit, although there is still much to be done in the direction of organizing for efficient marketing. It might be well to bear in mind that there is and can be no profitable market for poor fruit and in this sense it seems to me impossible to draw a line between activities which relate to marketing and those which relate to the production of fruit of sufficiently high grade to be worth marketing.

That fruit growing is a profitable line of industry is, I believe, very plainly brought out in connection with Professor Leitch's surveys conducted in the Niagara District and in Durham County. Land values for fruit growing purposes are still rising. Particularly is this true in apple growing, and this industry offers unusual opportunities to skilled men.

The fruit industry in the Niagara Peninsula shows a record of almost continuous expansion from 1896 down to the present. This has been brought about by improvement in transportation facilities, in marketing methods and in grading and packing the product. Throughout the apple districts, however, there has been very little commercial planting since 1912, with very heavy losses from winter killing occurring in 1913-14 and again in 1917-18. The extent of the losses in the latter winter amounted to nothing less than a national calamity and would, no doubt, total one-quarter or one-third of the commercial bearing trees of the Province. It might be mentioned here that losses from this cause are preventable for it is surely possible to propagate our fruit trees upon hardy roots. Efforts in this direction should be undertaken without delay.

The small farm orchard which formerly produced the bulk of the commercial crop is, in my judgment, a thing of the past and while there will be, no doubt, in future many apple orchards operated as side lines on mixed farms we need more large orchards operated by specialists. The prospects for apple growing were never brighter in Ontario than they are to-day, but if the industry is to prosper the orchard must be looked after in poor years as well as in good years. Small orchards are certain to be neglected in poor years. We need orchards of from twenty to fifty acres—the more the better.

There is much discussion with regard to the most suitable varieties, and a great lack of information concerning several which have been suggested. In my judgment one of the most regrettable occurrences was the discontinuation of the Fruit Experiment Stations which for many years furnished reliable information on varieties for the several districts. There are, nevertheless, dependable varieties for every district. It will probably be many years before we can supersede the Spy as a late keeping winter apple of high quality and while in general I do not consider the Spy as the most profitable variety which could be grown I feel very certain that we are not yet making the most of its valuable qualities. The Spy is certainly a box apple, second to none in its season, the most serious objection urged against it being that it produces too many low grade fruits. In my judgment here is a problem to be solved only by hand thinning of fruit on the tree. The Wealthy, Snow and McIntosh cannot be excelled as box apples in their proper seasons.

The future of the fruit growing industry in this Province will be entirely what we make it. Prof. Leitch's survey results show that an orchard properly taken care of pays well, and that a neglected orchard is a cause of loss. In other words, profit in fruit growing is a matter of spending money in order to make money. I believe the fruit grower is anxious to learn of better methods, and I believe further that so far as educational agencies are concerned the problem is to show him how to invest his time and money to best advantage in caring for his orchard.

RESOLUTIONS.

The following resolutions were adopted:

1. That a committee be appointed to bring before the proper authorities the desirability of having the duty removed on miscible oils.

2. That this Convention of the Ontario Fruit Growers' Association hereby petition the Federal Department of Agriculture to change the regulations with regard to Government assistance towards the establishment of cold storage warehouses, so that such assistance may be available for co-operative marketing companies as well as municipalities.

3. That the following resolution from the Clarkson Association be approved and forwarded to the local associations in the Niagara District for joint action: That the Clarkson Fruit Growers' Association are opposed to the present rate of commission charged by commission merchants, and asks that such rate be lowered, and that a copy of this resolution be sent to the Secretary of the Ontario Fruit Growers' Association."

4. That this Convention approve of the proposed formation of a national Horticultural Council as outlined by Mr. C. W. Baxter.

5. That the President and Secretary be appointed to meet representatives from other horticultural bodies in reference to a National Show and Association.

6. We, the Ontario Fruit Growers' Association, are convinced that the present condition of the apple-growing industry merits the careful consideration of this Association; that the question of desirable varieties for planting in the various districts of the Province is one of great importance; that so many new and uncommon varieties are being offered and the present list does not entirely meet the requirements for hardy and late-keeping varieties demanded for export trade; that the experimental orchards at the Ontario Agricultural College, Guelph, and at the Central Experimental Farm, Ottawa, are both situated in districts having very severe winters and are therefore handicapped on account of their location, and the Experimental Station at Vineland is located in a district having a much milder climate but has not the space to devote to extensive varietal tests.

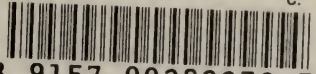
Therefore be it resolved that we petition the Minister of Agriculture for Ontario to take the necessary steps to establish a permanent testing station at some suitable point in one of the principal apple-growing districts not now served by any experiment station, so that the many varieties grown at the present time, and especially those which seem to be of promise for Ontario conditions, may be thoroughly tested, and so new varieties may undergo reliable tests before being recommended or planted. We would point out that such a station would greatly assist the apple growers of Ontario, and encourage the early planting of desirable varieties.



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