REPORT

OF THE

FRUIT GROWERS' ASSOCIATION

OF ONTARIO,

FOR THE YEAR 1885.

Printed by Order of the Legislative Assembly.

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1886.

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ANNUAL REPORT

OF THE

FRUIT GROWERS' ASSOCIATION

OF THE

PROVINCE OF ONTARIO FOR THE YEAR 1885.

To the Honourable the Commissioner of Agriculture:

My Dear Sir,—I beg herewith to submit the Seventeenth Annual Report of the Fruit Growers' Association of Ontario. Three meetings have been held during the year, one in the month of January, in the City of London; the second in June, at the Town of Uxbridge; and the third in September, in the Town of Wingham. The discussions at these meetings have brought out much valuable information, which you will find fully reported, they having been taken down at the time by a competent stenographer.

I have the honour to be,

Your most obedient servant,

D. W. BEADLE,

Secretary.

St. Catharines,
October 13th, 1885.

REPORT OF THE DIRECTORS.

To the Members of the Fruit Growers' Association of Ontario:

GENTLEMEN,—The term for which your officers were entrusted with the oversight of the interests of the Association expires at this time. We therefore come before you to return into your hands the charge committed to our care at the last annual meeting. We regret to have to report a reduction in the number of our members, a result which we believe is due to causes beyond our control. We would urge on our successors renewed efforts in the way of a vigorous canvass for members so that we may, if possible, during the coming year, recover the ground we have lost; also the enlargement of our premium list, with the view of stimulating those interested to more active effort, coupled with the strictest economy in the management of the funds.

As exception has been taken to the former method of electing the officers of the Association at the Annual Meeting, your Directors would also recommend the following change in this respect, namely: that a Nominating Committee of eight be appointed to nominate both Officers and Directors—five to be appointed by the open meeting and three by the chair. The names of the persons nominated to be submitted separately in the usual order, and voted on by the members present.

All of which is respectfully submitted.

WM. SAUNDERS, *President.*

TREASURER'S REPORT.

Receipts.

From 1,652 members	$1,737 20
From advertisements	46 75
From Government grant	1,800 00
From notes discounted	779 25
Balance from last year	86 66
Total	$4,449 86

Disbursements.

Audit, 1884	$20 00
Reporting two meetings	105 00
Freight and express	46 65
Canadian Horticulturist (part of the year)	1,412 44
Postage and telegrams	131 61
Advertising and printing	69 80
Stationery	11 30
Guarantee premium	20 00
Commissions, collecting	56 00
Committee and Directors' expenses, including collecting fruit for the New Orleans Exhibition, delegates to county fairs, etc	754 43
Plant and seed distribution	314 42
To papers clubbing with *Canadian Horticulturist*	193 27

Sundries	$11 35
Clerk	150 00
Secretary-Treasurer	200 00
Editor	400 00
Balance in hand	553 59
	$4449 86

TORONTO, Sept. 15th, 1885.

We, the undersigned Auditors, have duly examined the accounts of the Treasurer of the Fruit Growers' Association of Ontario and find them correct, and shewing a balance of $553.59 on hand at this date.

CHARLES DRURY, JOHN CARNEGIE, } *Auditors.*

OFFICERS OF THE ASSOCIATION.

At the Annual Meeting, held in the Town of Wingham, the following gentlemen were elected officers for the ensuing year:

President.—William Saunders, F.R.C.S., London.

Vice-President.—Alexander McD. Allan, Esq., Goderich.

Directors.—Division No. 1, John Croil, Aultsville; No. 2, A. A. Wright, Renfrew; No. 3, R. J. Dunlop, Kingston; No. 4, P. C. Dempsey, Trenton; No. 5, Thomas Beall, Lindsay; No. 6, W. E. Wellington, Toronto; No. 7, Murray Pettit, Winona; No. 8, A. M. Smith, St. Catharines; No. 9, Frederick Mitchell, Innerkip; No. 10, J. A. Morton, Wingham; No. 11, John M. Denton, London; No. 12, W. W. Hilborn, Arkona; No. 13, Charles Hickling, Barrie.

Auditors.—Charles Drury, M.P.P., Crown Hill; James Goldie, Esq., Guelph.

At the meeting of the Board of Directors, held subsequent to the election of officers, D. W. Beadle, St. Catharines, was appointed Secretary and Treasurer.

STATUTORY PROVISIONS

It is provided by the Revised Statutes of Ontario, as amended by 45 Victoria, chap. 4 (1882), section 9, that the Fruit Growers' Association shall hold an annual meeting at such time and place, not later than the fifteenth day of October, in each year, as the Executive Committee thereof may designate, and the retiring officers shall at such meeting present a full report of their proceedings, and of the proceedings of the Association, and a detailed statement of its receipts and expenditure for the previous year; and the Association shall at such meeting elect a President, a Vice-President, and thirteen Directors (one for each of the thirteen Agricultural Divisions mentioned in Schedule A., and within which division he shall be a resident) and the officers so elected shall elect from amongst themselves, or otherwise, a Secretary and a Treasurer, or a Secretary-Treasurer; and the Association shall also elect two Auditors.

Vacancies occurring through death, resignation, or otherwise in the directorate of the Fruit Growers' Association shall be filled by the Commissioner of Agriculture.

The officers, a majority of whom shall form a quorum, shall have full power to act for and on behalf of the Association; and all grants of money and other funds of the Association shall be received and expended under their direction, subject nevertheless to the by-laws and regulations of the Association.

A copy of the Annual Report of its proceedings, and a list of the officers elected, and also such information as the Association may have been able to obtain on the subject of fruit culture in the Province, shall be sent to the Commissioner of Agriculture within forty days after the holding of such annual meeting.

SCHEDULE A.—AGRICULTURAL DIVISIONS.

No. 1. Stormont, Dundas, Glengarry, Prescott and Cornwall.
" 2. Lanark, Renfrew, City of Ottawa, Carleton and Russell.
" 3. Frontenac, City of Kingston, Leeds, Grenville and Brockville.
" 4. Hastings, Prince Edward, Lennox and Addington.
" 5. Durham, Northumberland, Peterborough, Victoria and Haliburton.
" 6. York, Ontario, Peel, Cardwell and City of Toronto.
" 7. Wellington, Waterloo, Wentworth, Halton, Dufferin and City of Hamilton.
" 8. Lincoln, Welland, Haldimand and Monk.
" 9. Elgin, Brant, Oxford and Norfolk.
" 10. Huron, Bruce and Grey.
" 11. Perth, Middlesex and City of London.
" 12. Essex, Kent and Lambton.
" 13. Algoma, Simcoe, Muskoka and Parry Sound.

CONSTITUTION OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

Art. I.—This Association shall be called "The Fruit Growers' Association of Ontario."

Art. II.—Its objects shall be the advancement of the science and art of fruit culture by holding meetings for the exhibition of fruit and for the discussion of all questions relative to fruit culture, by collecting, arranging and disseminating useful information and by such other means as may from time to time seem advisable.

Art. III.—The annual meeting of the Association shall be held at the place and during the same time as the Exhibition of the Agricultural and Arts Association is being held in each and every year; two other general meetings shall be held in each year, at such time and place as shall be designated by the Association.

Art. IV.—The officers of the Association shall be composed of a President, Vice-President, a Secretary, or a Secretary-Treasurer, and thirteen Directors.

Art. V.—Any person may become a member by an annual payment of one dollar, and a payment of ten dollars shall constitute a member for life.

Art. VI.—This Constitution may be amended by a vote of a majority of the members present at any regular meeting, notice of the proposed amendments having been given at the previous meeting.

Art. VII.—The said Officers and Directors shall prepare and present to the annual meeting of the Association a report of their proceedings during the year, in which shall be stated the names of all the members of the Association, the places of meeting during the year, and such information as the Association shall have been able to obtain on the subject of fruit culture in the Province during the year. There shall also be presented at the said annual meeting a detailed statement of the receipts and disbursements of the Association during the year, which report and statement shall be entered in the journal and signed by the President as being a correct copy; and a true copy thereof, certified by the Secretary for the time being, shall be sent to the Commissioner of Agriculture within forty days after the holding of such annual meeting.

Art. VIII.—The Association shall have power to make, alter or amend By-laws for prescribing the mode of admission of new members, the election of officers, and otherwise regulating the administration of its affairs and property.

BY-LAWS.

1. The President, Vice-President and Secretary Treasurer shall be *ex-officio* members of all committees.

2. The Directors may offer premiums to any person originating or introducing any new fruit adapted to the climate of the Province which shall possess such distinctive excellence as shall, in their opinion, render the same of special value; also for essays upon such subjects connected with fruit growing as they may designate, under such rules and regulations as they may prescribe.

3. The Secretary shall prepare an annual report containing the minutes of the proceedings of meetings during the year; a detailed statement of receipts and expenditure; the reports upon fruits received from different localities; and all essays to which prizes have been awarded, and such other information in regard to fruit culture as may have been received during the year, and submit the same to the Directors or any Committee of Directors appointed for this purpose, and with their sanction, after presenting the same at the annual meeting, cause the same to be printed by and through the Publication Committee, and send a copy thereof to each member of the Association and to the Commissioner of Agriculture.

4. Seven Directors shall constitute a quorum, and if at any meeting of Directors there shall not be a quorum, the members present may adjourn the meeting from time to time until a quorum shall be obtained.

5. The annual subscription shall be due in advance at the annual meeting.

6. The President (or in case of his disability, the Vice-President) may convene special meetings at such times and places as he may deem advisable, and he shall convene such special meetings as shall be requested in writing by five members.

7. The President may deliver an address on some subject relating to the objects of the Association.

8. The Treasurer shall receive all moneys belonging to the Association, keep a correct account thereof, and submit the same to the Directors at any legal meeting of such Directors, five days' notice having been previously given for that purpose.

9. The Directors shall audit and pass all accounts, which, when approved of by the President's signature, shall be submitted to and paid by the Treasurer.

10. It shall be the duty of the Secretary to keep a correct record of the proceedings of the Association, conduct the correspondence, give not less than ten days' notice of all meetings to the members, and specify the business of special meetings.

11. The Directors, touching the conduct of the Association, shall at all times have absolute power and control of the funds and property of the Association, subject however to the meaning and construction of the Constitution.

12. At special meetings no business shall be transacted except that stated in the Secretary's circular.

13. The order of business shall be:—(1) Reading of the minutes; (2) Reading of the Directors' Reports; (3) Reading of the Treasurer's Report; (4) Reading of prize essays; (5) President's Address; (6) Election of officers, and (7) Miscellaneous business.

14. These By-laws may be amended at any general meeting by a vote of two-thirds of the members present.

15. Each member of the Fruit Committee shall be charged with the duty of accumulating information touching the state of the fruit crop, the introduction of new varieties, the market value of fruits in his particular section of country, together with such other general and useful information touching fruit interests as may seem desirable, and report in writing to the Secretary of the Association on or before the fifteenth day of September in each year.

16. The President, Vice-President and Secretary shall be *ex officio* members of the Board of Directors and of all Committees. The reasonable and necessary expenses of Directors and officers in attending meetings of the Board of Directors and of Committees shall be provided from the funds of the Association.

THE WINTER MEETING.

The Winter Meeting of the Association was held in Victoria Hall, London, on the 28th and 29th of January, 1885, President Saunders in the chair.

The minutes of last meeting were read and confirmed.

THE PRESIDENT'S ADDRESS.

The PRESIDENT.—It affords me very much pleasure to meet you all in the City of London. It is four years since a meeting was held here, and that was one of our annual meetings, which you know, in old times, was simply an evening session, when officers were elected, the President's address delivered, and no time allowed for the discussion of those matters which we are now met to consider. It is more than ten years since a meeting such as the present one was held in London, and during the intervening time our people have made considerable progress both in fruit culture and horticulture. I am sure that those of you who can look back ten or twelve years will notice the changes that have been brought about, especially in the beautifying of our homes and of the city in general. Within these ten years the area of fruit culture has been very much extended, and in addition to meeting our own requirements a large quantity of fruit has been raised for foreign shipment.

We are glad to have you representative men from all parts of the Province with us to-day to discuss matters relating to the fruit interests, and we have no doubt that we shall be greatly profited by what is said at this and subsequent meetings. It is rather a cold reception to you this morning, with the thermometer five degrees below zero; but we hope to have a good attendance during the afternoon and evening and to-morrow, and that those who come will feel well repaid for the time given to these meetings. The discussions are always of great interest, and afford opportunities of acquiring much information. There is one feature always attractive in connection with our meetings, that is, the Question Box. We have really no box. The Secretary is the box. The questions are handed to him, and any gentleman desiring information on a point not covered by the programme, has the liberty to bring that point before the meeting and obtain all the information that can be had. I trust you will make a good use of the Question Box.

Mr. E. B. REED then presented the following address:

To the Officers and Members of the Fruit-Growers' Association of the Province of Ontario:

GENTLEMEN,—This occasion of your visit to the City of London, and the holding of one of your interesting meetings, affords an opportunity that is most gladly seized by the members of the Entomological Society of Ontario to convey to you a most cordial and fraternal welcome to our Forest City.

For nearly a decade and a half of busy years our sister societies, under the kindly care and wise provisions of the Legislature of our Province, have worked side by side in thorough harmony and good fellowship, each in our own sphere of labour endeavouring to utilize and disseminate amongst the vast body of the agricultural, horticultural and fruit-growing community the many practical lessons obtained from our varied experience.

It is from meetings such as this that we who study the science of entomology gather many a hint of the curious lives and habits of beneficial and injurious insects, and we venture to think, that the friendly intercourse that has always existed between the members of our societies has been productive of mutual benefit and instruction.

We gladly recognize the wonderful results that have been achieved by your society throughout Ontario.

Each succeeding public exhibition as the years roll by has borne ocular demonstration to the increasing zeal and skill called forth by your society in the selection, growth, and production of a beneficent Creator's bounteous gifts to man from orchard, field and garden; and we congratulate you on the result of your praiseworthy efforts in causing the science of fruit-growing to become, as it now is, such a source of income to those who pursue it.

As citizens of this fair Province of our great Dominion we have watched with pride the peaceful victories won by your society at Boston, Philadelphia and elsewhere amongst our enterprising and energetic friends and neighbours of the United States.

In the broad domain of Horticultural Science we want and must have the fullest reciprocity, and nothing should be permitted to stand in the way of procuring the "greatest good for the greatest number," and by a judicious selection of fruits, trees and flowers, enabling us to bring the best productions of nature within the reach of all.

We notice with pleasure that you expect on this occasion the presence of delegations from kindred societies in the great fruit-growing States of Michigan and New York, and we extend to them our hearty greeting and welcome to the city.

We desire to place at your disposal during your session, our rooms, our library and our collection of insects, and we shall esteem it a pleasure to give you any information in our power on entomological matters.

Submitted on behalf of our Society.

EDMUND BAYNES REED.
JOHN M. DENTON.

London, Jan. 28, 1885.

The PRESIDENT.—On behalf of the Ontario Fruit-Growers' Association, I beg to tender you our sincere thanks for your cordial words of welcome. We recognize this society as a great help to us, and we find the annual report of the Entomological Society, which is appended to ours, of great use, giving us material aid, guiding us in our labours among the fruits.

ADDRESS OF THE MAYOR.

Mayor BECHER was received with applause, and said:

Mr. PRESIDENT AND GENTLEMEN,—I have much pleasure in coming forward to fulfil my part on the programme, and beg to welcome the visiting members of this Association to our city. Your meeting is being held in one of the best fruit growing sections of this country, where large and small fruit alike may be developed to the highest perfection. After humorous references to his early experiences in horticulture, and Mark Twain's tribulations in editing an agricultural paper, the Mayor continued: The benefits derived from the work of this Association are apparent even to those who are not fruit growers, and the country in general profits very much by your work. Your object, I believe, is to disseminate such information as will assist persons in every part of the Province to select the best varieties of fruit adapted to their several localities, and thus prevent many failures and save valuable time. You thus encourage and increase the growing of fruit, and add to the commerce of the country. From little or nothing our export of apples has grown to very great proportions, and the effect has been to bring into this country a large amount of material prosperity. This district, and all the districts from which you have come, are capable of almost indefinite extension in fruit growing, and the greater the extension within reasonable limits, the greater will be the benefit to this country. In addition to the commercial benefits that arise, is the great benefit which results to the health of the people from the use of fruits as a diet. It has been said with some degree of force that we are using too much flesh in this country and too little fruit, and from

this springs many of the diseases to which we are subject. I say, therefore, that any Association whose work will have the effect of increasing the public health, deserves every encouragement. I understand also that the efforts of this Association are not confined to fruit trees, but are extended as well to ornamental and forest trees. In this city, I think, we have a large number of specimens of forest shade trees, well worthy of careful inspection. The City Council, under the Ontario Act of 1883, called "An Act for the Encouragement of Planting Trees," have passed a by-law by which all those who plant trees not less than thirty feet apart, shall receive the bonus provided for in that Act. The Inspector takes note of them when they are planted, and then at the end of three years, if they are growing, the planter gets twenty-five cents per tree. Of this sum the Ontario Government pays one half and the city the other. It is a very fine thing to have these ornamental trees adding to the beauty of the city, and if some of the visiting members go and look at our Queen's avenue or Dufferin avenue, they may obtain some hints as to the planting of shade trees that may be useful to them. The objects of the Association, then, being as I have stated, it is not surprising that its membership extends to 2,500. It is surprising that it should not be larger. The City of London congratulates itself on the fact that our fellow-citizen, Mr. Saunders, is your President. He is a gentleman this city feels proud of. His fame extends over this whole continent, not only for his learning, but also for his good works in the interest of humanity. I trust you may have a pleasant and profitable session, and that our visitors may take home with them such information as may be valuable to the localities whence they come. My heart is with you in your good work.

The PRESIDENT.—Mr. Mayor, I desire, on behalf of the Association, to thank you for the kindly sentiments you have expressed towards us. We realize the force of many of the statements you have made in regard to the importance of our work, both from a commercial standpoint as well as from the standpoint of its relations to the health of the community and that elevation of the moral sentiment which almost always occurs wherever a love for fruit culture, horticulture or arboriculture is created. We fully recognize the healthfulness of fruit as an article of diet, and regard this as one of the most important points in connection with our work as an Association. We are glad to see so many evidences of taste in this city, over which you have been chosen to preside as Chief Magistrate. We trust that your hopes for a pleasant and profitable meeting may be realized. The object of our Association is not only to give information, but to gather it as well, and our peripatetic plan of holding meetings is calculated to carry this information over the whole country. We hope that our local men, by an interchange of experience with our visitors, may both get and give information of value. Our meetings bring out a very large amount of experience in fruit culture, which is disseminated in our annual reports, and stimulates the progress of this industry in a marked degree. I thank you again for the kindly sentiments you have expressed, and for your words of welcome.

NEW VARIETIES OF APPLES.

Mr. DEMPSEY (of Albury).—It is exceedingly difficult to distinguish between a new variety of apple, and an older one with a new name. Again, what is new to us may be old in another section of the country. It also occurs to me that varieties which have been in use for hundreds of years in another country, may be considered new by us when introduced here and subjected to the severity of our climate and a change of soil. There are several varieties of apples that are not distinctly new, which, I am glad to say, are succeeding in our country. One is an English apple, though not very new in England, called the Cellini. It is a magnificent apple, ripening in October. I notice that it has proved sufficiently hardy to survive in Algoma; it should be disseminated more; I have fruited it for several years. We should not at the same time lose sight of the Wealthy apple; although it has its faults, it is a good fruit; ours all blew off this year, and there was a good crop. There are other new varieties which are being introduced, that I have

not had much experience with, and therefore cannot speak positively about; but these two, I am satisfied, are coming apples.

Mr. BEADLE.—What about the McIntosh Red?

Mr. DEMPSEY.—It is a very good apple; but I have never been able to see one clear specimen. It is very pretty, is a good dessert apple and keeps well.

The PRESIDENT.—Do you grow the Jonathan?

Mr. DEMPSEY.—Yes; but it has one serious objection,—the tree does not seem to be hardy or reliable.

Mr. BEADLE.—What about the Grand Sultan?

Mr. DEMPSEY.—It is a magnificent Russian apple, but like all other Russian apples, we can get better ones. The Grand Sultan is an early apple, and is almost transparent; it is a very pretty fruit; the objection to it is that it does not ripen evenly, and we cannot pack all the fruit at the same time. It is valuable for market and home use. It bears an abundant crop, and I have never known it to fail to do this in eight or ten years.

Mr. BEADLE.—Does that apple spot?

Mr. DEMPSEY.—I have never known it to do so.

Mr. BEADLE.—How does the Yellow Harvest do?

Mr. DEMPSEY.—It spots badly, and sometimes turns nearly wrong side out.

Mr. BEADLE.—Do you think the Grand Sultan would make a substitute for the Yellow Harvest where it spots badly?

Mr. DEMPSEY.—I think it would; I have the Grand Sultan and Early Harvest growing on the same tree, and this gives a good test. The two apples ripen together every year, and the Grand Sultan produces much the finer fruit for marketing purposes, although a little too acid to suit my taste.

Mr. BEADLE.—Have you fruited the Yellow Transparent?

Mr. DEMPSEY.—Yes; but I think they are the same variety; they appear to be exactly alike. It does not seem to be quite so productive, although this may be caused by the soil causing the tree to be too vigorous.

Mr. BEADLE.—Have you the Montreal Peach apple?

Mr. DEMPSEY.—No, sir.

Mr. BEADLE.—Have you Fameuse Sucrée?

Mr. DEMPSEY.—Yes; I have fruited that just a little, but would not give an opinion.

Mr. A. A. WRIGHT (of Renfrew).—Of course our country is yet in its infancy, so far as fruit is concerned, and these newer varieties have not been fruited to any great extent. Some of those mentioned, however, have been fruited. I have the Wealthy apple, and for a northern section I do not think we have found its equal; it keeps well, and is a nice, round, shapely apple; it bears young, and is a good bearer and is hardy. For northern sections you cannot find a better apple. With reference to the Yellow Transparent, I have seen them growing, and I do not think them quite so valuable, because they do not keep so long. It is thin-skinned and is very nice, but being a yellow apple does not take as well as a red. I have grafts of the Grand Sultan growing, but as yet it has never fruited with me. I was talking to Dr. Hoskins in Montreal, and he says the Grand Sultan he has is the same as the Yellow Transparent. The Cellini is not growing, but we had it on exhibition in Montreal and it is a very hardy apple. The tree appears to be hardy in that section; bnt I cannot say how it would be in ours. The McIntosh Red had spots with us, and it is only in favourable localities that we can raise it. The tree is very hardy, but its cold-resisting powers are not equal to all emergencies. It is very tenacious of life where other trees would fail, but it will not always stand the cold of our district. We had several on exhibition at our annual show last fall, but every specimen was somewhat spotted; it does not make a nice appearance, and is ribbed. Then we have Scott's Winter, which is a new fruit introduced by Dr. Hoskins, of Vermont. When the tree is loaded, it looks almost like a ball of fire, the red colour is so bright. We also have the Peach, but a serious objection to it is that it cannot be shipped any distance. In baskets, however, it answers very well, and the tree is hardy. In Montreal it gives good satisfaction. It is not the best flavoured apple we have, however, and lacks acidity.

Mr. P. E. BUCKE (of Ottawa).—Does the tree blight?

Mr. WRIGHT.—In some localities it may; but it has just been introduced. Some

seedlings have been grown in our section, and there is one called the Forest Winter, which we believe is going to prove successful. The tree has proven itself valuable, and we think it will not be long before we shall have some good seedling specimens to bring you. There were seven specimens given me and I laid them away carefully, but the rats found them and ate them.

Mr. JOHN CROIL (of Aultsville).—I find the same objection to the Wealthy as Mr. Dempsey—blowing off the trees.

A. MACD. ALLEN (of Goderich).—If there is one subject more than another that I want to be cautious about, it is in speaking of new varieties. We have some of these English fruits, and I do not think the Cellini will be valuable for us. Some of the older fruits suit us very well. As far as local consumption is concerned, we have too many early fruits, and in regard to the Russian apples, they do not seem to suit our section. I have examined some that would suit colder sections, but were not as good for us as our standard varieties. There is the Taylor Fysh ; it is too early, but is a splendid cooker and baker. For an early fruit we like the Duchess of Oldenburg better than any. It bears abundantly, and you can begin to cook the apple when it is perfectly green. It is one of our best.

Mr. A. M. SMITH (of St. Catharines).—Mr. Dempsey is too modest to mention one of the finest new apples I have seen, because it originated with himself. The best seedling I have seen was what he exhibited in Barrie. What can he tell us about it ?

Mr. DEMPSEY.—I can tell you something about it. It is a very fine apple. It is a beautiful red color, as most of you have seen, and is grown from the seed of a Golden Russet fertilized by the Northern Spy. The tree appears to be hardy, as far as I can judge, and it is quite prolific. It is only three years since it first blossomed, and the trees at the present time are no thicker than broom-sticks. They are not two inches in diameter. I am considerably encouraged with the appearance of the apple so far, and I hope it will never spot. When we were packing our apples for New Orleans, I picked some apples off the top of the basket and asked "where did these McIntosh Reds come from? I never saw a McIntosh Red without a spot." We did not send them down as McIntosh Reds ; but after they had gone, we found out that they were my seedling. Had I known it, I should have had them marked as such for the New Orleans show. Still it may fail, as many others have done.

Mr. HICKLING (of Barrie).—I do not know that I can say a great deal as regards the new varieties, for I have not grown a great many of them. There is the Wealthy, however, that has been spoken about. It appears to be very good. I think, from my observations, that it will be very successful for the market. The Haas has been spoken of as a nice apple. It is a very hardy tree, and the fruit seems to be very fine ; but it has not been sufficiently tried to enable me to say much for it at present. We find, as a rule, that we raise too many early apples. The Duchess of Oldenburg is the fall apple for us, and we cannot find anything to equal it for market purposes and cooking qualities. There was a large apple shown at our fall meeting that was called the Red Pound ; but I do not know whether it was a good keeper or not.

Mr. WELLINGTON (of Toronto).—Of the varieties named very few are really new, and the newer kinds, of which there are a great number, have yet to be tested. Of all the varieties mentioned, I think the Wealthy, if not the most valuable in all sections, is at least one of the most valuable ever brought out. There is one thing that should be understood regarding the Wealthy, and that is with respect to its earliness. In Western Canada it is certainly a fall fruit ; but in cold northern sections—in many parts of New Brunswick and Quebec—it is strictly a winter apple, and keeps well into January and February. This should be borne in mind : that locality makes a good deal of difference. I have yet to see a spotted Wealthy. For three years I have had a graft bearing, and each year it is becoming better. For three years the crop has been enormous ; as much as any tree could bear ; and I have thought it is the best apple I have ever seen. In appearance it was handsome, and in flavor it was good. There is a new apple known as Scott's Winter, which is particularly adapted to colder sections. It is of fine quality ; is a late keeper, and for sections where the more tender fruits cannot be grown, it is certainly desirable. In the same class is the Magog Red Streak, another of Dr. Hoskins' seedlings.

He speaks highly of it, and I think it is valuable. Yellow Transparent is new, or as some have called it, Russian Transparent, and I believe it will in a measure take the place of Early Harvest. The Early Harvest has almost grown out of date, and will soon have to be discarded on account of spotting and cracking. The Yellow Transparent is an abundant bearer, the tree is quite hardy and can be planted in any section where apples will succeed. Another apple which our Quebec friends think highly of is, Canada Baldwin. It is fine in appearance, and the quality is very fair. The tree is hardy and it may be put down as one of the valuable apples for colder sections. The Hastings is an apple which can be classed with the Wealthy. The tree is hardy, the fruit of good quality, and the bearing qualities are excellent. We sent a specimen to Charles Downing, and he pronounced it one of the finest apples he had ever seen. The Salome, from all accounts, is going to be very valuable. I hope next season to fruit it. It would be well for fruit growers to obtain information of this fruit, because I believe that it is one of the coming apples. It is a long keeper, and being of good quality is likely to be a good shipping apple, and will bring good prices in the spring.

The SECRETARY.—I do not know what more I can say. I do not live in the cold parts of this country. We do not have the thermometer down very much below zero where I live, so we do not need to grow any of these apples mentioned. What do you want better than the Northern Spy? We are satisfied with what we have got, and I do not think you can beat the Northern Spy or Grimes' Golden, or the Swayzie Pomme Grise. When they can get apples like these in the cold north, I believe they will not want any new varieties; and I am convinced that gentlemen present will live to see that.

Mr. A. A. WRIGHT.—I have fruited the Magog for the first time and its quality is very good. It is hardy and is a fine size. We thought highly of it at the Exhibition. With reference to the Hastings, we can only grow it in favourable localities. It fruited with me last year; but it is not going to be hardy enough for the extreme cold sections of the country.

T. H. PARKER (of Woodstock).—There is the Ontario. Last year, with me, it had a crop of magnificent apples, and the fruit, as I saw it before coming away, is in a good state of preservation. Among winter apples I think this good.

Mr. BUCKE (of Ottawa).—Arnold's Beauty is fine and hardy with us, and I think it is going to be an acquisition to our part of the country.

The PRESIDENT.—I have had the Ontario fruiting for two years, and it is one of the best bearing trees I have for its age. The fruit is uniform in size, a little flatter in form than the Northern Spy. It is a good keeper, an excellent cooker, and not bad for the table. It is an apple that I think the Fruit Growers' Association has done the country good by having it disseminated. It seems to be fulfilling the expectation of those who have grown it. There is another apple which has been originated here by Mr. George Nixon, from the seed of the Northern Spy. It is of extra medium size, differing somewhat in appearance from the Spy; not so tender in the skin, and seems to be an excellent keeper. I hope that during the meeting some specimens will be brought here. It was sent down by me to New Orleans under the name of the Nixon, and I would suggest that that name be adopted for it.

Mr. SMITH.—I would just add that the Ontario is succeeding well in the Niagara district.

Mr. MACD. ALLEN (of Goderich).—It is one of the best shipping apples.

Mr. HICKLING (of Barrie).—It is an excellent fruit.

Mr. BEALL (of Lindsay).—I wish to exhibit a couple of apples grown by Alexander Robinson, of Verulan, a seedling apple which he reported to me as being grown on an exceedingly hardy tree that bears an unusually large crop. The apples are uniform in size, and he says they are the best cookers grown on the lake shore. For dessert he thought them too tart, but they will keep until June. I have found all he has said to be correct, but as to the keeping quality, of course it is not yet June. Its flavour in the fall was good and not too acid, and it was one of the best I ever had cooked. Being a seedling grown in our northern country, I think it would be desirable to test it further.

Mr. BODWELL (of Ingersoll).—I wish to ask something about the Mann.

Mr. WRIGHT.—We have found it hardy.

Mr. WELLINGTON.—The tree is hardy, and I have found the keeping quality of the fruit most excellent; have had splendid specimens in June, and I believe it would be a fine market apple. It is not quite so productive, however, as some of us would like. You can grow the Mann where you cannot grow the Rhode Island Greening.

Mr. MACD. ALLEN.—The Mann brought nineteen shillings a barrel in Liverpool, but it is a poor bearer. The tree is hardy and I think the fruit is valuable for its long keeping qualities, and its colour does not seem to be an objection.

Mr. SMITH.—My father raised it when I was a small boy, and he did not think much of it on account of its dropping from the tree. It acquires a yellowish cast of colour towards spring and is a valuable apple then. It was formerly called the Spring Swan.

Mr. DEMPSEY.—Some of the Scotch people have produced good fruits and so have the Irish. There is an apple called the Hawthornden New, which is a rival to the Hawthornden. I never saw a tree that carried such a weight of fruit. It is a good cooker but not a dessert apple, although a man who could eat the Ontario would like it. There is money in the Ontario, but I never want to eat it myself. There is another apple called Seacliff's Hawthornden, which grows a little slower. I have a tree not more than two feet high that has fruited for six or seven years. It is a beautiful ornament for the lawn or door yard.

THE LATE CHARLES DOWNING.

The PRESIDENT.—I desire at this stage to make an announcement in reference to the recent death of Mr. Charles Downing, which occurred at his residence in Newburgh, N.Y. He was a gentleman who has done more to advance horticulture than any other man who has lived during the past hundred years, and I am sure you will hear of his death with feelings of the deepest regret. Horticultural societies all over the continent are taking the opportunity of expressing their sentiments of admiration for the man and regret at his decease, and with your consent I would like to nominate a committee to introduce a resolution at a later stage of the meeting which will embody our sentiments of the man and of his unselfish labours in devoting nearly the whole of his life to the development of horticulture, and especially fruit culture. I would, with your permission, name Messrs. MacD. Allen, Wright and Dempsey as that committee.

Mr. Bucke re-echoed the sentiments expressed by the President, and at a subsequent stage the following resolution was proposed and adopted unanimously:

Moved by Alex. MacD. Allen, seconded by P. C. Dempsey, and resolved, "That the Ontario Fruit Growers' Association have learned with feelings of the profoundest regret of the death of the venerable Chas. Downing, of Newburgh, N. Y., one of the most unselfish of men; in his writings pointed and always reliable; in his correspondence prompt and obliging; charitable towards all men, yet firm in all good principle. There is, we believe, no horticulturist of the present century who has left behind him so valuable a work of reference upon fruits and fruit culture, and at the same time retained so warm a place in the hearts of all true friends of horticulture. A man possessed of the finest traits of character that combine to make a perfect model of the true horticulturist, the man and the Christian. In placing upon record our sentiments at parting with one of so great value not only to horticulturists but to humanity at large, we know that the gain is his while we deplore the loss, and that he is now reaping the rewards of so pure a character.

NEW VARIETIES OF PEARS.

The PRESIDENT.—What experience have you had with Kieffer's Hybrid?

Mr. DEMPSEY.—We have fruited it for several years. The first year it was very poor and small; the second year it was improved, and this last fall I have found it a fair specimen of a pear. The largest specimens we had were about the size of the Golden Russet apple, and when ripened it was a pretty fair fruit. I think it will be one of the best cooking pears.

The PRESIDENT—What about Souvenir du Congress?

Mr. DEMPSEY.—I have given it up, my patience having worn out. The only way I could get a tree to winter was by protecting it. It was the tenderest variety we have

ever undertaken to grow. There are several new French pears that turned out the same with us, and I have concluded that there are very few of these new foreign pears that can be made to succeed. The Doyennè du Comice is a better pear. It comes a little later in the season ; but the trees are liable to blight, and I think it is going to prove a failure.

Mr. BEADLE.—I think the Kieffer pear would be good to cook or can, but we never want to eat it raw. It is like a turnip. The tree is somewhat tender, and I do not think it is going to stand where the thermometer has to be lengthened to ascertain what the temperature is. In our part of the country I find it cracks badly and gets covered with rusty spots. Wherever that spot appears it cracks. All the fruit of my Kieffer tree cracked so badly that I didn't get a solitary specimen ; but I do not know whether that is going to be characteristic of it. Still I do not believe in trying to hold up a pear because I had some expectation of it once. When it goes back on me I go back on it. I had hoped that pear would prove blight-proof. The foliage is unusually close and of rich appearance, and in the autumn it is as pretty a thing as you can have. With the fruit on it the first year it bore with me, it made up a very pretty sight ; but I am afraid we must go slow with that tree. Perhaps along the shore of Lake Erie or our southern counties it may prove more valuable.

The PRESIDENT.—What about the Doctor Reeder ?

Mr. BEADLE.—The tree seems to escape blight very well, and the trees of that survived when other varieties got killed. The pear, although small in size, is of very fine quality. I think Manning's Elizabeth the finest quality of early pear we have.

Mr. WELLINGTON.—In my opinion of the Kieffer I agree with Mr. Beadle, but we do not want to eat turnips raw. There is money in the Kieffer. One great trouble is that fruit growers allow it to fruit too heavily. If the fruit were thinned out we would have better quality ; but even as it is, if we want a pear for money, I believe we have it in this variety. We know that it is not always quality that sells. It is size and appearance. The Kieffer is certainly of good size, and when ripened is one of the most handsome pears we have. For those reasons it will sell. As a canning pear I believe it has no superior. In flavour it is something like the quince, and its hardiness is superior to the Bartlett. I think it will grow in most sections where we wish to grow pears for marketing purposes. It is about the only new variety that is obtaining any prominence just now. There is one new pear, however, that I saw growing in the orchard of Mr. Barry, in Rochester, and it is called the "Petite Margaret." Mr. Barry spoke very highly of it, and I found it a fair grower and hardy.

Mr. MCGILL (of Oshawa).—The French pear that has been spoken of was a failure in our section. That is the Souvenir du Congress.

The PRESIDENT—I have fruited the Kieffer here for the last two years, and have found it a little tender, the shoots killing back during the winter. As far as I have been able to judge of its quality, it is not desirable for eating. I think, however, it is superior to the Bartlett for canning. There is a pleasant quince flavor and more acid in it than in the Bartlett, while a slight grittiness in the flesh gives a character to the pear and makes it desirable. I doubt if it will be hardy enough to stand in the colder sections of the country. With regard to the Dr. Reeder, we have had a very good test of this tree on the asylum grounds here. There was a very large collection of pear trees planted there, and among others were ten or twelve Dr. Reeders. While nearly all the other fruits have died, there are nine of the Dr. Reeder there yet, and these nine trees bear an abundance of fruit every year. As Mr. Beadle says, the fruit is of fine quality, and is worth a more extended trial than we have given it. It is one of the fruits that promises well as to its freedom from blight.

Mr. BEADLE—I was going to speak about another pear that is cousin to the Kieffer, known by the name of Le Conte. Somebody is trying to boom it, and you will find it spoken very highly of in our American cousins' papers. I wish to caution our friends that I have tried it two or three winters, and have concluded that it will not be a success in our climate.

Mr. DEMPSEY.—When it comes to maturing pears my wife is man of the house. This Kieffer pear was placed by her in a certain temperature in the house, and we found that it compared very favourably as an eating pear when properly ripened. I fancy this will be

the experience of everybody when it has been learned how to handle them. There is also the Duchess de Bordeaux pear that created considerable stir. I got a couple of trees out from France and tried to ripen the fruit, but failed. It shrivelled up until it was the worst looking thing you ever saw. For several years we have thrown those pears into the cellar with the potatoes; but last year my wife took them and placed them at a temperature of about 65 or 70 degrees, giving them sufficient air, and about Christmas she brought one to me and asked what it was. It was one of the most delicious pears I have ever tasted in my life. She also gave me some of the Vicar. They were well ripened and some of them commanded $4 a bushel in Belleville as dessert pears.

Mr. BEADLE.—Will Mr. Dempsey spare to each of us his wife to ripen our pears? (Laughter.)

Mr. DEMPSEY.—No commerce in that respect.

Mr. F. W. WILSON (of Chatham).—I have tried some trees of the Kieffer pear. They grow well. I have never had any die. I cannnot, however, keep the Souvenir alive. I have never seen the temperature below 22 degrees below zero, and other fruits are better with us than in many parts of Canada. The only section that compares with us is south of Hamilton, and we want a fruit that can be put into the market before these northern men can ripen theirs.

Mr. P. E. BUCKE (of Ottawa) then read the following paper:

EXPORTS AND IMPORTS OF GREEN FRUITS.

As there appeared to me to be a feeling getting abroad that the fruit business was being overdone in this Province, I made application to the Customs Department at Ottawa for some statistics on the exports and imports, and was very kindly furnished, by Mr. W. H. Frazer, Chief Appraiser, with the following letter:

"OTTAWA, January 26th, 1885.

"P. E. BUCKE, ESQ., *Vice-President Fruit Growers' Association, Ottawa.*

"SIR,—In compliance with your request, I have now the pleasure of sending you herewith statements showing the imports and exports of fruit, for the past five years, which I hope may be of interest to your Association.

"I would respectfully suggest that the attention of your members should be directed to the important subject of the export of fruit and vegetables packed in glass instead of tin.

"During a late visit to Great Britain, I learned that tin packages were almost universally objected to, and which prevents a large consumption of these goods in that market.

"I would recommend the use of glass jars, similar to the 'gem' fruit jar, which, after the fruit being used by the consumer, could be utilized for many domestic purposes.

"Peaches put up in this manner would find a good market, as I found that high prices were obtained for this fruit in Great Britain.

"Hoping that your meeting in London may be interesting and profitable, and that your next meeting will be held in Ottawa.

"I am, dear Sir, yours very truly,

"W. H. FRAZER."

This was accompanied by some very valuable statistics, which I have taken the liberty of arranging in such a way that a comparison can be made between the fiscal years 1881 and 1884.

APPLES:

Imported in 1881	8,000 barrels.
Imported in 1884	6,000 barrels.
Value of same in 1881	$12,000.
Value of same in 1884	16,000.
Duty on same, 1881	3,250.
Duty on same, 1884	2,500.

BLACKBERRIES, GOOSEBERRIES, RASPBERRIES, AND STRAWBERRIES:

Imported in 1881	45,000 quarts.
Imported in 1884	101,000 quarts.
Valued at, 1881	$ 6,500.
Valued at, 1884	14,800.
Duty on same, 1881	900.
Duty on same, 1884	2,000.

CHERRIES AND CURRANTS:

Imported, 1881	12,000 quarts.
Imported, 1884	14,000 quarts.
Valued at, 1881	$1,000.
Valued at, 1884	1,000.
Duty on same, 1881	125.
Duty on same, 1884	150.

GRAPES—from Great Britain, United States, and foreign countries:

Imported in 1881	138,300 lbs.
Imported in 1884	149,650 lbs.
Valued at, 1881	$11,000.
Valued at, 1884	11,700.
Duty paid, 1881	2,760.
Duty paid, 1884	3,000.

I may mention that the duties were largely increased on fruits, at the request of our Association, when the National Policy was framed at Ottawa some few years ago, as a protection to the producers residing in western Ontario.

The quantity of green fruits imported into the other Provinces of the Dominion is about four times in volume that imported into Ontario, so that this Province has very arge customers without going outside of Canada.

In 1880 the exports from Ontario was about 60,000 barrels; but in 1884, owing to the poor crop in the autumn of 1883, this fell off to 15,000 barrels. From the statistics furnished, it is found Great Britain is our best customer, and the United States comes next; whilst Newfoundland and the West Indies come last on the list.

The PRESIDENT.—It would seem that we have not yet reached that point when we can meet all the demand for fruit, judging by the imports.

Mr. BUCKE explained that a large quantity of Malaga grapes were brought in during the winter that could not be produced here.

Mr. WELLINGTON believed the amount of importations was made up largely of fruits brought in from the South before ours ripen.

Mr. BUCKE further explained that he did not include oranges or lemons in his statistics.

Mr. DEMPSEY.—I have seen car-load after car-load come into Montreal, and among them such fruits as Fallawater.

Mr. MACD. ALLEN.—I think it was in 1881 that we had a great deal of trouble in shipping, as we had apples brought from Missouri to Montreal and repacked and sent away as Canadian apples.

Mr. BEADLE.—All this shows which way the current runs. Our Canadian apples must be better than those of the Yankees or they would not wish to brand theirs with our name.

GREEN PEAS.

J. CAMPBELL (of London).—I grow the Little Gem and Daniel O'Rourke principally; hey succeeded very well. I do not cultivate any of the late ones.

Mr. CROIL.—As far as my experience goes there is no pea to compare with Bliss's American Wonder. It is a perfect dwarf pea, growing not more than ten inches in

height; the quality cannot be excelled and it is an immense bearer. My experience with it leads me to the conclusion to grow no other until I see a better. I think if Mr. Arnold had left nothing else to keep him in remembrance, this pea would do it. I have also tried Bliss's Abundance and found it very prolific. The report of it in the *Horticulturist* was true; it is a beautiful pea, but as a standard I do not think it will come up to the Wonder.

T. H. PARKER.—Is Bliss's American Wonder a hardy pea? I tried it and thought it was tender.

Mr. CROIL.—I feel quite convinced that Mr. Parker has had a pea that was not the American Wonder. It is a splendid pea; I sold ten bushels for $50 in Montreal. I never lost a pea, and we have had the thermometer down to 40° below zero. It is perfectly hardy.

Mr. CAMPBELL.—I sowed the American Wonder last year and the first sowing was nearly killed with the frost. I would not compare it in quality with the Little Gem. The Wonder, however, is a little earlier.

Mr. CROIL.—It is not extra early. The Blue Peter and it are about the same; but for hardiness and dwarf character it is the best.

Mr. BEALL.—I am glad that Mr. Croil has spoken about the difficulty in getting the right variety. There are a great number of persons who have been growing a pea they thought was the American Wonder, but which was not such. I have grown those which were said by seedsmen to be the Wonder alongside those which grew from seed obtained from Mr. Arnold, and there was a marked difference; both the blossom and the pea were different. I think some steps should be taken to find out the difference, as I cannot by the samples. With regard to the frost in Mr. Campbell's case, I think that shows a mistake in the seed, as the true American Wonder will stand more than others. I have used it for the past six or seven years in my own family, and on the 24th of April I invariably plant the American Wonder and Yorkshire Hero. I put these two in together and by the time Bliss' American Wonder is finished the Yorkshire Hero comes into use. A month after I plant the first lot I plant another, and they catch up greatly on the others. On the 30th of May last we had frost, eight degrees below the freezing point. The American Wonder peas were injured as they were just coming into bloom, but the injury was so slight that we scarcely knew the difference. I think there were very few places in the Province where peas were grown and the thermometer went so low. I confine myself to these two varieties, and while there are others that compare favourably with them, there are none any earlier.

Mr. CROIL.—I remember the same frost, and it destroyed half of the blossoms of the Early Canada strawberry; but the peas were damaged so little that we scarcely noticed it.

Mr. HILBORN (of Arkona).—We grew some peas for our own use; we planted D. M. Perry's First and Best, American Wonder, Champion of England, and Premier Gem. We thought the Premier Gem had the best crop. I had two samples sent me by the *Rural New Yorker* and *Horsford's Market Gardener*. The American Wonder did not do so well with us. We considered it was not worth planting, but it may be that we did not have the true seed.

W. L. BROWN (of Hyde Park).—I grew some last year and found Little Gem and Abundance very good.

Mr. GILDERS (of Delaware).—I had a pea called Morning Star, which was very early. We used them both as feed and as a green pea; they answered very well.

Mr. GOLDIE.—I have grown McLean's Gem and have also tried American Wonder, and am satisfied that I did not have the right variety of the Wonder; it was not nearly as good as the Gem. I also grew a later crop of the Stratagem, Telephone and Telegram. These are large growers, and are probably the finest peas I have used; they are rather tender, as all English peas are, and are liable to suffer during the hot summer, but with that exception they are the finest peas grown; these three kinds seem to be the same, and they all ripened about the same time. These peas were the only thing I saw the sparrows attack, and after they ripened, the blackbirds took so many that we did not get half a crop. It is necessary to stake them; they grow very strong in the straw and succulent, and if allowed to fall over you get very little good from them.

Mr. BEALL.—I can corroborate what Mr. Goldie says about the Telephone. They are the most prolific I ever saw; but I cannot afford to grow them on account of staking. I think the Champion of England is the best, but I can't afford a ladder to go up and get them.

Mr. BEADLE.—As a matter of taste I would only grow one pea, McLean's Little Gem; I plant them and do not want any other. I cannot afford to hunt up brush and rod long growing peas. Years ago, when there were plenty of woods about me, I could go and get brush and rod the Champion of England. I can get more peas off the Little Gem than off the American Wonder.

Mr. GOLDIE.—In New York last year, amongst the novelties of seedsmen was a pea that was noted for using pod and all. I brought home a small package; they grew freely and wanted staking, but I did not find them an improvement on the others and shall not grow them further.

Mr. BEADLE.—Perhaps some of you, like myself, have light soil. By planting them deep, although it makes them later, I find that they do not suffer from the drought so much; I get a better crop. I like to have a soil on which potatoes have been grown, and have it well enriched. I plant them four or five inches deep, and leave them a little shallow so that as we hoe up the ground it fills around the vines. In that way the roots are protected.

Mr. BUCKE.—Can you do anything against mildew on peas?

Mr. BEADLE.—No, sir; I cannot afford sulphur enough.

The PRESIDENT.—A gentleman living near here, plants his seed in the autumn and he finds that he has peas several days ahead of those who plant in the spring.

Mr. CAMPBELL.—I tried it one season and only about one-third of the seed grew.

Mr. DEMPSEY.—I never have planted any in the fall; but I cannot understand what Mr. Beadle means by deep planting. A part of the field of peas we ploughed under, the other half harrowed in. In almost overy case we would have a larger crop from those ploughed under. We have always planted garden peas shallow.

The Association adjourned until two o'clock.

AFTERNOON SESSION.

Letters of regret were read from W. C. Barry, of Rochester, N. Y., J. C. Morgan, of Barrie, and B. Gott, of Arkona.

The question box being opened, the following queries were read:—

QUESTION.—"What may be done to rid a lawn of fish worms?"

Mr. E. B. REED.—I have seen salt tried with fair effect, but it is a difficult thing to exterminate them when once they get in.

THE PRESIDENT.—What advantage would be gained by getting rid of them? I think Darwin has shown that they are one of the most potent agents in forming fertile soil to support plant life. They swallow the earth and digest the vegetable fibre mixed with it, and then eject it on the surface. He assumes that in ten or fifteen years they add an inch or two to the soil, but in the course of ages the whole soil passes through the bodies of these fish worms, and is so affected by the process that it is better fitted to serve the purposes of plant life. If they were destroyed, the soil might lose in fertility.

Mr. JOHN LITTLE, of St. Marys.—I bought some choice strawberries five or six years ago, and I made the soil very rich. I thought after I had planted them that I should not get a strawberry at all on account of the fish worms. I could not kill them. In the fall of the year, when the ground got dry they went away, and I covered the plants in the winter with pea straw. When I took the straw off in the spring there was not a leaf left; but by and by the leaves came out, and I never had such strawberries in my life.

Mr. PARKER.—A few years ago when croquet was in vogue, and I was very fond of

the game, my lawn was almost destroyed by these worms. Salt was recommended as a means of getting rid of them. We tried it, and in some spots where too much was put on, the grass was killed; but after every little rain they were there throwing up their little hills, and we could not play on the lawn. The robins now keep them in check. There was one gentleman who went to an expensive remedy. He took off the surface of the soil and laid leached ashes beneath it. That kept the worms out.

Mr. GOLDIE.—Strong lime water keeps them off.

GRUBS IN PEACH TREES.

QUESTION.—"What can be done to prevent grubs at the root of peach trees?"

Mr. BEADLE.—I do not know whether the gentleman is troubled with the borer or some other grub around the roots.

A VOICE.—It is the borer.

Mr. BEADLE.—It can be kept out by putting a little mound of unleached wood ashes around the trees early in the spring, so as to hide the collar until the first of August and then you can take it away. By that time the insect is done laying eggs. If you can prevent them getting at the collar, they can do no harm. If, however, the borers have got in, the ashes will not keep them out. You then have to take your jack knife and trace them up. If they have got in some depth you must take a stout wire and kill them. You can keep them out in the first place by putting a mound of wood ashes up to three or four inches above the collar. There is another remedy just as good, I presume, if more convenient. Scrape the earth away and rub the tree with soft soap, and the alkali will prevent the insect from laying her eggs. She seems to know by the smell not to lay eggs there.

SPOTTED FAMEUSE APPLES.

QUESTION.—"How many who have had Fameuse apples badly affected by the spot have had them free this year?"

Mr. CROIL.—Some of my neighbours have been entirely free; but mine were badly spotted. Where the apples have been most cared for they seem to have been killed with kindness; while those standing in grass and uncared for have had better apples and less spot. Another thing I may mention is that I have thoroughly pruned these trees and perhaps I have hurt them.

Mr. SMITH.—I think there was a committee appointed to experiment on this spot on apples.

Mr. CROIL.—Yes, I was one of that committee. They all experimented; but from inquiries made, I think they made nothing of it. Is the disease moving away? Mr. MacD. Allen says that last year he got large quantities of apples that were not spotted. That is encouraging. I count that it has been a loss of a thousand dollars a year to me.

Mr. HICKLING.—I had some of the Fameuse that were very badly spotted, so that I don't think you could get a single apple that was not affected. At the time the committee was appointed, an invitation was given to others to investigate. I tried sulphate of iron. Early in the spring I made a solution and with a force pump threw it on. This was before budding. Some of the trees I did twice. I had them all marked. These trees that were so badly affected the year before were comparatively free. I do not think there was a quarter of the fruit affected by the spot, but I cannot say positively whether it was the sulphate of iron that caused it, or the sulphur I applied to the apples after they were formed. There were two trees of the Fameuse that I applied it to, and there was not one-fiftieth part of the spot I had before. I wish to try it another year, however, before coming to any definite conclusion. There were some of them that did not bear this year. I am of the opinion that it did a great deal of good, as those which had not been so treated were no better than usual.

Mr. DEMPSEY.—I heard a novel remedy the other day. A gentlemen living not far from me had a Flemish Beauty pear tree, the fruit of which had been worthless for several years. Last year I said to him: "How is it the fruit is so good this year?" He says:

"That old horse of mine flared up under this tree and I had to unload a load of manure right there. It was partly from the chip yard and seemed to suit that tree." I may say that I have heard of trees being benefited by the application of sulphate of iron to the roots.

RASPBERRY BUSHES.

QUESTION.—"What is the cause of the canes of some raspberry bushes dying, while fruiting or bearing, especially the Clarke, and what is the best preventive?"

Mr. JOHN LITTLE.—I never could find any other remedy than burning.

THE PRESIDENT.—I found that most of mine which decayed had borers in them, and we cut off the affected parts and burned them.

WHAT VARIETIES OF WINTER APPLES ARE MOST PROFITABLE?

Mr. MACD. ALLEN.—The varieties that are most profitable with me are, first, the Baldwin, which I ship to England; and I think it is the most profitable of all the apples in our section. The American Golden Russet is profitable, and the Wagner and Rhode Island Greening are also profitable. Specimens of the Rhode Island Greening were poor three years ago, and consequently were looked down on in the English market; but now it is going up again. If, however, you plant an orchard of them, you have to wait ten or fifteen years before they become very profitable. We top graft with the Northern Spy and get very good results. I thought at one time the Mann Apple was going to be very profitable; but it has been found that while it comes into bearing in good time it does not bear large crops. The Ben Davis has been very profitable, and it is really a large bearer. The Canada Red is also a profitable apple. When we are looking for profits from an apple orchard in future, we must pay more attention to quality. For that reason I believe the time is coming when the Baldwin will go down in the English market, simply because it is not an apple of good quality. We get higher prices for the King of Tompkins. When the Baldwin is fifteen or sixteen shillings, we can get eighteen to twenty-one for the King of Tompkins. The American Golden Russet, however, is preferred. I have done very well with some of the earlier apples, but these that I have mentioned are most profitable.

The PRESIDENT—Is Grimes' Golden shipped?

Mr. MACD. ALLEN.—Yes; it is a magnificent apple for the dessert table, and there is nothing prettier when arranged in a dish than they are. They are gold just now; but are nevertheless not profitable to grow. Esopus Spitzenburg is good for price, but is not profitable for the grower, as it takes some time to get into bearing.

Mr. BEADLE.—I have made arrangements with Messrs. Keeling & Hunt, of Pudding Lane, London, England, to have the prices of apples in the foreign market reported in the *Horticulturist*. You will see that on the 12th and 13th of November last they sold 873 barrels of Canadian apples at public auction, with the following result: Greenings brought 14s. to 15s. 6d. sterling per barrel; Northern Spy, 14s. 6d. to 15s.; Baldwins, 15s. to 17s.; Fameuse, 13s. 6d.; Golden Russet, 21s. to 14s.; Roxbury Russet, 14s. 6d. to 16s.; Ben Davis, 12s. 6d.; Pomme Grise, 17s. 6d.; King of Tompkins, 18s. 6d.; Ribston Pippin, 22s. to 22s. 6d.: Montreal Fameuse, 16s. 6d.

Mr. BUCKE.—Most of the Fameuse that came in to us from the west were spotted, while those along the branch of the Ottawa were free.

Mr. CROIL.—A friend of mine in Montreal told me that the spot would get no better; but I think that perhaps the worst time is past. From what I can hear it seems to be moving, and we hope that like other plagues, including the potato bug, it may depart altogether.

Mr. WELLINGTON contrasted the prices of Nova Scotia apples with those read by Mr. Beadle, and showed that quotations for them were lower.

Mr. A. M. SMITH (St. Catharines).—My experience is about the same as Mr. Allen's. I would mention one variety that is considered of very little account here, and I think does not command very high prices in the English market. That is the Talman's Sweet. In the Boston market, a year ago, I realized as much for them as any other.

Mr. SHOFF.—The King of Tompkins and Spy, and Ribston Pippin, when matured, are rich apples, and will command good prices in the English market.

Mr. MOTT (of Burford).—Our section raises and ships a large quantity of apples, and I think the Baldwin takes the lead. There is the Northern Spy for another, and the Russet is becoming very popular. I think the Russet has been planted of late years more than any other. As to prices, the buyers in our section have realized such low figures, that in some cases they have lost money.

Mr. CORNWALL (of Burford).—My orchard is quite young, but I would corroborate what Mr. Mott has said regarding the Baldwin being considered the best for shipping purposes. The Greening was badly affected by the Black Scab, I was one of a committee to try remedies, and I diluted sulphur in water and showered the trees twice with the liquid, once when the apples were about the size of cherries and the second time about two weeks later. I cannot say, however, that this produced any good results.

The PRESIDENT.—What varieties have you planted most largely?

Mr. CORNWALL.—The Baldwin and Rhode Island Greening. I have a number of Roxbury Russets and Northern Spys, but the principal part of my orchard is made up of the two mentioned.

Mr. DEMPSEY.—I find that the Ben Davis is a most profitable apple. I may say that in shipping apples the result depends largely on the culling done. It is a great deal better to sell one barrel and get the same amount of money as you would for two of a lower quality. Take any variety you like, and it will be found to pay you every time to sort them thoroughly and pack carefully. I would recommend every person to cull. Leave a hole, rather than pack a small one in to fill up. I think this is most important, that the apples should be uniform in size.

Mr. BUCKE.—Two actions have been brought against shippers in Western Ontario for sending apples that did not come up to the samples on top of the barrels, and in both cases the agent recovered. I give this as a word of warning to shippers not to send away apples other than uniform in size throughout the barrel.

Mr. WRIGHT.—It might not be unwise of me to give my opinion from the standpoint of buying. We are not able to raise sufficient to supply our own market, so we have to import. Last year we brought in seven car loads from Prince Edward County, and the plan pursued was this:—As soon as we had ordered our cars, we sent around persons to take orders for the apples. We sell from two to five barrels to each family. Every family takes one barrel of Greenings and the next variety in demand is the Russet. The Baldwin or Nonesuch make up the balance. In retailing, the same price prevails of five cents per pound, fifty cents per pailful, or $1.25 per bushel. We will sell ten barrels of Hubbartston's Nonesuch to one of any other variety. We generally get one barrel of Tolman Sweets for certain persons who want them to bake. For retailing, the Nonesuch takes the lead, and for dessert nothing surpasses the Golden Russet.

Mr. MORRIS (of Fonthill).—In our immediate section the American Pippin is still considered the most profitable variety, and brings the highest prices. It is similar to the Grindstone, but is larger and of better quality. There is another apple that has not been mentioned, and that is the Wealthy. I believe that is one of the most valuable apples we have in this country. The first two years I had it it bore a heavy crop, and I thought it was inclined to be wormy; but I concluded that that was in consequence of there being no other variety to attack. This year again, it was loaded, and the specimens were fine. I believe that grown north of Lake Ontario it will rival any other shipping apple, and it is an immense bearer and may be depended on for heavy crops.

Mr. BODWELL (of Ingersoll).—The standards with us are Northern Spy, Rhode Island Greenlng and the Baldwin.

Mr. MITCHELL (of Innerkip).—Since the blight struck our trees, no apple has been so profitable as the Golden Russet. The Rhode Island Greening is profitable, but for the last two years the Russet has taken the lead.

Mr. WILSON (of Chatham).—In our section the Baldwin is the most profitable. The Northern Spy has the greatest crop and the Russets sell when the others are played out. I am glad some action has been taken against shippers, as I have seen the very thing complained of—good specimens at both ends, and very poor in the middle.

Mr. Campbell (of London).—Although not growing apples now to any extent, I have had considerable experience with them. I found when I was on the farm, that the Northern Spy, American Golden Russet and Spitzenburg were good bearers and shippers, and I find that in late years the Russet and Spy hold their own. I found the King of Tompkins bad for losing its flavour, and in that respect it differs from the Northern Spy.

Mr. GILDERS.—I found in our orchard last year that the Greening blighted very much, and the most profitable variety we had was the Northern Spy. There were very few Snow apples, and those we had were spotted.

D. C. DORMAN.—With us, the Northern Spy, American Golden Russet and Baldwin have been most profitable.

Col. McGILL (of Oshawa).—In our section the King of Tompkins has taken the lead. The buyers from every quarter were after it and paid the highest prices. The King, and Baldwin, and Spy and Golden Russet are most sought after by the buyers. Last year there was a run on the Tolman Sweet, and this year the buyers wouldn't take a barrel as a gift.

Mr. BEADLE.—I think that those who ship apples from the Niagara district have agreed pretty well on two varieties:—the Baldwin and Golden Russet, of Western New York. These two varieties taken years together, yield more money to the acre than any other two. Some have been almost inclined to place the Ribston Pippin on a par with them, but if the summer be warm and dry the Pippin ripens up too soon. If, however, the season is cold it brings large prices in the English market, so much so that they can be shipped by steamer. These are the three varieties I have heard spoken most of in our section.

Dr. McKECHNIE (of Thorndale).—The principal varieties shipped from our section were the Golden Russet and Northern Spy. They seem to give most satisfaction.

Mr. BUCKE.—The tree of the American Golden Russet is very hardy, and is being grown near Ottawa, and is considered very profitable.

Mr. DEMPSEY.—I always find out more about fruit by driving through the country than by any other means. In passing through Northumberland county, for instance, I have noticed that there are certainly as many Golden Russet apple trees growing, as all others put together. That speaks very highly for that variety. I have also been through other sections where Northern Spys were almost exclusively grown. If we wish to take a lesson, let us see what is growing most successfully in any section, and then in planting we have a safe guide.

Mr. JOHN McCASH.—We grow apples both for the local and foreign market. For the foreign markets buyers come around and take all the winter apples we can spare. We get the same price for one variety as another. I had settled for that reason on the King of Tompkins County because I thought it would bear more than the rest. There is another apple that is kept for the local market and that is the Golden Russet. It fetches big prices when others are gone. The King of Tompkins ripens early, but unless sheltered the trees are likely to suffer.

Mr. SHOFF.—I think it would be an improvement to pick the King of Tompkins earlier than is the custom.

Mr. WILSON (of Chatham).—The lake shore is a great place for apples, and they grow Rhode Island Greenings almost exclusively. I have seen over a thousand trees in an orchard. I should like to hear of a remedy for preventing damage to the skin of the Northern Spy. They spot badly. Is it because our summers are too long?

Mr. PIERCE (of Tyrconnel).—We have shipped very few from our neighbourhood to the foreign markets, and it is difficult to speak about the profit. As far as my experience goes, I think the Rhode Island Greening is considered about the best.

Mr. WEBB (of London).—In reference to the Northern Spy being a shy bearer, I may state one or two facts. It was my business to study pruning, and in going through the country I found a good deal of top pruning, especially for Northern Spy. To produce finer fruit it is better to take off part of the limb and do what I call setting them back. I had a Northern Spy tree which I top-dressed, and it is the finest specimen I have ever seen. I clipped a tree thoroughly for Archdeacon Sandys, of Chatham, that was a poor bearer, as an experiment. We did the same to a peach tree close by, and last fall he said he took the finest peaches from that tree he had ever seen.

BEST MARKETS FOR WINTER APPLES, AND BEST METHODS OF PACKING FOR FOREIGN SHIPMENT.

Mr. MacD. Allen.—As to the best market, we find that Great Britain will be our objective point. I find Liverpool the best port to ship to, and from there you can distribute to all the different points in Great Britain. For some fruits the highest prices are got in London. For the Esopus Spitzenburg I have got the highest prices in Omaha, Nebraska, and for the Ribston Pippin I have obtained the highest prices in Glasgow. In our own North-west I have had fair prices for early and fall apples, but the consumption there is insufficient to make it a large market. The people are not wealthy enough to indulge in fruit to any great extent; but it will yet be an important market for early and fall fruits. As to the method of packing, the system we follow is this: We go around to the orchards and buy the fruits we want. We instruct the farmer to pick them in baskets and then lay them in piles under the trees. All those that are not coloured or have spots or worm holes we put by themselves. We go over the entire orchard, and in about ten days after they have been on the ground we send around a gang of packers. They cull over these good heaps first and see that all are good and clean, and then when the barrel is sufficiently full, they press down and put in the head. In filling a barrel you must use some judgment as to the kind of apples you are pressing. One kind will require an extra row more than another to carry it to the foreign market. For instance, a Rhode Island Greening will press more than a Baldwin. The King of Tompkins will press more. This is a very important point. I believe the shipping business of this country has been hurt by those who have sent out two qualities in a barrel, and they should meet with the severest punishment that the law provides. The old country markets will not stand it. Two or three years ago they were careless, but now they are different. Everything must be good. Frequently a barrel is taken from the docks and emptied out, and that is taken as a sample. Shippers have to be very particular if they wish to do business. We never allow farmers to fill the barrels, and we carefully cull out every apple that is in any way bruised. The Northern Spy is thin skinned, and if there is the slightest spot it is apt to grow worse if not allowed to sweat on the ground. If it sweats it will bear the voyage better.

Mr. Goldie.—Do you leave them exposed on the ground?

Mr. MacD. Allen.—Yes; to the rain and everything. While we have always packed in barrels, I think there is more money being made by packing in half-bushel crates. The only difficulty is in handling them; but I believe in small packages of choice fruit. Ship them as you would ship peaches, so that the apples can be seen. You must only pack the finest, however.

Mr. Parker.—If you pass through an orchard in this way how do you form your estimate of prices?

Mr. MacD. Allen.—This last year we paid pretty much uniform prices. We will cull one orchard keener than another, and where the trees are trim and nice and the ground clean and the fruit better coloured we will pay a little more per barrel.

Mr. Beadle.—Is there anything to be gained by wrapping specimens in soft paper?

Mr. MacD. Allen.—I believe that is a matter well worthy of consideration. I have obtained the highest prices for medium-sized Northern Spys, by taking an extra good barrel and making it attractive by a nice label. There is a good deal in getting up a nice package. We have taken a pad of soft grass and lined the barrel with thick brown paper, and then wound every apple in tissue paper and packed with dry chaff, and it paid well for the extra expense.

PLUMS.

Most Esteemed Varieties, Soil and Cultivation.

Mr. Goldie (Guelph).—I have not a plum tree left in my orchard. I have grown from twenty to thirty varieties, but the last few years the extreme cold weather of our winters seems to have killed them off. The varieties I had all did very well, but I cannot specify them all from memory. Of the different gages I like the Old English Green Gage

the best; but for market purposes, the Imperial Gage. It is rich in flavour and a heavy bearer. The Prince's Yellow Gage was very fine, and the flavour rich. There were several of that class so much alike that it would be very difficult to tell them apart. The Emerald Drop was the same. I had one called the Prince of Wales, and have only seen one other like it. That I thought was the finest I had ever seen. It was a blue plum. Smith's Orleans was very good, and Magnum Bonum was an excellent cooking plum. Glass' Seedling I could never fruit to any extent. I don't know why, for it was the only shy cropper I had in my orchard.

Mr. WILSON (of Chatham).—There are very few plums grown with us, but among those we have, I think the Lombard is the best.

Mr. CORNWALL (of Norwich).—The black knot has nearly exterminated the plum trees with us.

Mr. MOTT (of Norwich).—About seven years ago I put out something over one hundred trees, and the most profitable fruits for the market were the Lombard and Pond's Seedling. I had very good success for about three years, and then the very hard frosts of four years ago literally killed nearly all the trees. I have six or seven of Pond's Seedling struggling along; but have never got a perfect plum from them since. Our trees have been troubled but little by the black knot, and it is in consequence of the winter-killing that plums have ceased to be raised with us.

The PRESIDENT.—Mr. Mott has scarcely taken the best course, to rest content with six or seven trees. I had a similar experience, and out of a large orchard there are but three or four of the old trees left. These have not borne any fruit since worth speaking of; but I have planted out a young plum orchard, in which the trees have grown splendidly, and this coming year I hope to have a good crop. Whenever we get a severe winter, it seems to destroy the vitality of many of our plum trees, and when this occurs we should plant out the next spring a fresh lot of young and vigorous trees, and thus keep up our supply of fruit. We must expect these mishaps, and if we are content to take them as they come, and make no effort to remedy the evil, we shall suffer in the extreme. I think we should try in such cases to do all in our power to promptly restore our orchards. With regard to varieties, I should place the Imperial Gage and Lombard first, as among the most profitable. They are also of very good quality. The plum I think the most of as a table fruit is the McLaughlin. It has a pale, rosy cheek, and a delicate melting flesh that is very desirable. That tree was disseminated some years ago by the Fruit Growers' Association, and I think the reports have been favourable. It has always borne fair crops; sometimes very heavy, although not so heavy as the Lombard or Imperial Gage; and if it were not for the occasional visit of the curculio, the trees would almost kill themselves from over-bearing. Many persons are willing to take all the fruit they can get; but it is the better policy to thin it out, for one bushel of handsome fruit will bring as much money and give more satisfaction than two of inferior specimens. Lawrence's Favourite is a delicious little plum, and is always very desirable on account of its rich flavour. The Washington is handsome and of good quality; but is a shy bearer. I have not had much satisfaction with that kind. The Prince of Wales that Mr. Goldie spoke of, I have grown, but have not had much success with it. General Hand is a large and handsome fruit, but with me has been a shy bearer. The Columbia is a fine blue plum, and while it is not of first quality, it will always command good prices on account of its size. The Bradshaw is desirable because it has a large proportion of flesh and small stone, and being of good size always commands large figures.

Mr. SHOFF.—I have been cultivating plums for over forty years, and have grown some fifteen or twenty varieties. I have been planting every year. My greatest trouble has been the black knot, and I have found but one tree that withstands it, and that is the Prince's Yellow Gage. The tops of the Prince's mingle with others, and have not yet had the black knot.

Mr. DEMPSEY.—I have never seen black knot on the Prince's Yellow Gage, but my trees have borne themselves to death, and I have none now. I killed the curculio, however. I lost very much by over-bearing, and I think it would pay us to thin the fruit and thereby save our trees and have a crop every year. With me Glass' Seedling is as good as any I have, and is quite as reliable. I have another, however, that is a straight seedling

from the old horse plum that cannot be told from the Glass. It stands free from the black knot, and so does the Glass' Seedling. When I was growing plums extensively I had none which paid me so well as the Victoria. It was necessary that we should pick the fruit twice over, one part beginning to colour while the other would be mature. I cannot fully endorse all that the President has said about Lawrence's Favourite, although it brought good prices and was profitable. The Lombard is always too productive, and I lost mine in consequence. I should not forget to speak of the French prune. Although shy in bearing, they are very reliable. We never lost any by rot and have kept them fresh until Christmas.

Lieut.-Col. Jackson (of London).—I lack the experience of many gentlemen here, but my plums were not satisfactory. The black knot was my great trouble. I did not grow for the market, and cannot therefore speak of the value of different varieties.

Mr. McCash.—I grew plums for a number of years, but lost them a few years ago. I believe that the soil has a great deal to do with it; for on low, rich ground they killed out the easiest, while on the higher and more exposed ground they seem hardier. I have taken notice that around St. Marys where the trees are exposed they seem to stand very well. I have found Glass' Seedling to stand the winter best, although it has not borne much. I have planted out the common wild plum, and top grafted on it with some success.

Mr. Bucke.—It has been our experience in Ottawa that Glass' Seedling has not borne well. With regard to the black knot, we never saw it down there on our trees, but on some trees I got from Mr. Dempsey it was very bad. I tried an experiment in the way of cutting them close, and I think the knot will die out of these trees.

Mr. Morris (of Fonthill).—Most of the plum trees are as tender as peach trees, and in discussing their merits hardiness is the chief thing to consider. In the dark fruits I should give preference to the Lombard. It has but one failing, and that is its liability to the black knot. The fruit should be thinned to prevent over-bearing. Next to that I would mention the Niagara plum. It resembles the Bradshaw; but the Bradshaw is a very tender tree, while the Niagara is quite hardy. It is the same as the Mooney plum, and was first brought out by Mr. Mooney. As next best I would place Duane's Purple. In the light varieties I should place the Imperial Gage first, on account of the hardiness of the tree, and Coe's Golden Drop next. This latter ripens well about the 1st of October. The Prince's Yellow Gage is another good fruit. Plum-growing is not much of a business in our section.

The President.—That season I have referred to when the plum trees were nearly all killed in this vicinity, the Victoria survived on my place, while the Lombard succumbed. It is very difficult to account for this as the Victoria is generally regarded as much the tenderer of the two. The Yellow Egg has succeeded very well with me, and I think it profitable on account of its size and the price it commands.

Mr. Morris.—I know the Victoria is good, but it is so tender that I think the nurseries have given up trying to grow it.

Mr. MacD. Allen (Goderich).—There are not so many plums grown now as in former years, the curculio and black knot having reduced the number of trees. I think there is money in the Lombard, Coe's Golden Drop, the Imperial Gage and Yellow Egg. The Washington also does well with us, and bears good enough crops. The Lombard, however, requires especially to be thinned out. I have experimented with Paris green on the curculio, and while it may be a little dangerous, yet if a fine rose is used so as to produce a spray, I think it will do away with the curculio. I have tried it on one row of trees and left the others free. I have tried it two years in succession on an orchard of a thousand trees and have left a tree here and there untouched. On the trees whereon we had not used Paris green there was scarcely a plum. A little too much, however, singes the leaves. We used a full teaspoonful of Paris green to a full patent pailful of water, and that would spray from eight to a dozen trees. One showering answers just when the plums are fairly forming. The moment the blossom goes off, the curculio begins its work.

Mr. Beall (Lindsay).—I have had some experience with Paris green, and have been surprised to learn that there is any danger to the trees, especially after it has been

said that one pailful answered for six or seven trees. I have used one pailful on one tree. I use an exceedingly fine rose and the spray is never thrown directly upon the tree, but allowed to be carried on it by the wind. I have tried this on two trees growing side by side, first putting it on one and the next year on the other. Each time the one I applied the Paris green to had a crop, the other was barren. I would like to ask Mr. Dempsey about the tree he got those plums from that were exhibited in St. Catharines several years ago Are the trees hardy?

Mr. DEMPSEY.—The trees are perfectly hardy, and that variety bears the name of the Saunders, and originated near Belleville.

Mr. CROIL (Aultsville).—In one of the late reports of the American Horticultural Society, white arsenic was recommended. I tried it and killed all the insects, and trees too. The receipt was one pound to four hundred gallons of water.

THE PRESIDENT.—The disadvantage of arsenic is its solubility in water, while Paris green is comparatively insoluble and does not have the same effect on the leaves of the trees. The only object for making a change from Paris green to white arsenic would be the price. You can get arsenic for about half the price of Paris green, but I think the use of white arsenic is not to be recommended, as it would be very difficult to fix on a strength of solution that would be safe to use. It is very strong in its action on vegetable tissue.

Mr. MACD. ALLEN.—The only tree I used an over-strength of Paris Green on was a Hyslop crab. I made up my mind to kill the tree or the codlin moth, but I had a beautiful load of fine fruit.

Mr. WILSON.—We have not the black knot, but the curculio is bad.

The PRESIDENT.—I was skeptical until last year about Paris green as a remedy for curculio, but I have seen enough to convince me there is a good deal in it. I believe it is going to be *the* remedy for curculio, and if it succeeds it will stimulate plum culture throughout the length and breadth of the country more than any other discovery that has been made. The plan I had hitherto adopted was to catch the insect and kill it. That was a very safe way of working, but it was very laborious. The experience given here to-day goes far towards establishing the value of Paris green as a remedy against the curculio.

Mr. MACD. ALLEN.—I have watched the curculio, and never could make out what it fed upon. I never could be certain, either, that Paris green actually killed the curculio. I thought the result was to drive it away.

The PRESIDENT.—There is no doubt that insects have some sense analagous to our sense of smell. There have been several other remedies besides Paris green tried. For instance, the burning of tar or pitch under the trees and allowing the smoke to rise and settle on the fruit while it is in a young state. This is done when the air is still, and in many instances has had the effect of preserving the crop. The sense of smell may have been operated upon in this way, and the insect deterred from visiting the trees so protected. Another remedy, has been to stick elder branches among the trees, and the strong odour arising from them seems to put the insects off the track. I have known good crops of plums to be grown where this has been tried, while other trees where the elder was not used, had the fruit destroyed. With regard to the curculio eating, I may say that I have had them in a box where fruit was exposed to their depredations, and I found not only the marks of egg-laying but punctures through which they had evidently drawn the sap of the fruit. The quantity eaten, however, was very small. The explanation of this Paris green remedy, then, is probably to be found in the fact of its deterring the insect from visiting the tree.

Mr. GOLDIE.—If the smell is what is aimed at, could not something less objectionable than Paris green be used?

The PRESIDENT.—That is a very good suggestion. It would be well to try a coal oil emulsion, and watch its effects.

Mr. MACD. Allen.—I have tried coal oil by tying rags saturated with it under the trees; but speaking of elder berry bushes, reminds me that I boiled them one year in water, and sprayed the trees with the liquid. It had the same effect. I had a better crop on the trees thus treated than on the others.

Mr. HICKLING.—I have found the use of Paris green on plum trees to be very effectual. Last year I had comparatively few plums destroyed. The year before, the whole of my crop was lost with the exception of the Glass Seedling; why this escaped I cannot explain. I have tried it on apple trees as well, and found nothing else so effectual. It killed the codlin moth as well as the curculio.

The PRESIDENT.—For apples it should be used early, while the young fruit is in an upright position.

J. M. DENTON (of London).—The Washington still bears well, and our crop is pretty good. The curculio bothered us, but fumigation was found an effectual remedy. We saturated rags with coal oil and produced a smouldering smoke by covering with leaves and rubbish. This went among the branches and seemed to do the necessary work. The Blue plums have done well, but the Gages have not done so well. I have not tried Paris green. We have had excellent crops the last few years, and I have not been troubled with the black knot since I destroyed the tree that first showed it.

Mr. Craig (of London).—I have lost all my plum trees through the black knot.

Mr. WRIGHT (of Renfrew).—We cannot grow any plums down where I live; not even Moore's Arctic. The winter kills the trees.

Mr. W. H. WINNET (of London).—Is it the general experience of plum growers that every alternate year the crop is a failure? I have cultivated Lombards, and find that to be the case with me. The year before last I had an abudant crop, and last year I had but few.

The PRESIDENT.—Has your experience extended beyond the last two years? Last year there were very few plums in this section of the country, the explanation to the point you have raised, may lie in this:—If plum trees are allowed to overbear one year, the chances are the crop will be small the next.

Mr. BEADLE.—With regard to Moore's Arctic, I have fruited it and find it an abundant bearer. It would not be fully tested with me, however, in the matter of hardiness. It is about the size of a Damson. There is nothing extra in its quality. I was told by some gentlemen living at or near Geneva that it had been found profitable for market purposes. We are now growing more plums in the Niagara district than in former years. The curculio and black knot had so discouraged the plum growers that they had allowed the trees to die. However, there is less of the black knot now, the old generation having died out, and the new one not having yet been affected. Since, a method of combatting the curculio has been discovered, we will plant trees with a view to supplying the market. Mr. Glass tells me he has planted quite a number, probably four or five hundred. He is satisfied he can grow plums and do it profitably. In some seasons when the trees have been allowed to overload I have known plums to rot badly, particularly in moist, showery, warm seasons; but if the fruit is thinned out so that it does not hang in clusters, there is no trouble with the rot. It is neglected trees that suffer.

Mr. PARKER (Woodstock).—My plum trees are nearly all dead. The Lombards have borne themselves to death. I endorse what has been said about the McLaughlin. It is the most delicious plum I have ever tasted. There is just one thing against it. It is very apt to crack and then the bees attack it. The Lombards used to rot very much indeed. Glass' Seedling is a magnificent tree; but I have never had a crop from it yet, although there were many blossoms.

Col. MCGILL (Oshawa).—I have five trees of Glass' Seedling. I got up a large subscription list one year and took my commission in trees. At one time I had some thirty-three varieties of plum trees, but the number has dwindled down to five or six. The black knot and curculio and hard winters have thinned them out. Around the town of Whitby there are a number of seedlings that have produced very fine fruit.

Mr. HICKLING (Barrie).—Respecting the Glass' Seedling sent out by the Association, I thought there would be nothing further than blossoms for several years. At last, however, I gave it a good thinning out and then it commenced to bear. I have taken a good many grafts from it, and grafted on to some wild plum trees, and from those grafts I have raised far superior fruit to the original tree. They are vigorous and doing well.

Mr. GOLDIE (Guelph).—I have seen the Glass' Seedling, when not four feet high, in the nursery rows in Berlin bearing fruit. That soil seemed to suit. Except down the

Hudson River, I think there is no section in this part of the continent where plums do so well as about Berlin. In my case the soil is light and I never got that fruit to do well.

Mr. McGILL (Oshawa).—The soil has a great deal to do with it. When I got those trees from the Association I gave one to my daughter in Whitby. I have top trimmed mine, but cannot make them bear fruit, while hers do well on a clay soil.

NATIVE FRUITS OF THE RAINY RIVER DISTRICT.

Mr. LATIMER (of London).—I have spent the last two seasons in the North-west and have observed something regarding fruit culture there Last year when up in the Rainy River district I found plum trees loaded with very fine native plums, as good as the best natives we have here. I found other fruits there in the middle of September. There were wild grapes in abundance. I also found black currants growing there and a species of wild cherry that I think might be utilized. I should like to see this matter taken hold of by some gentlemen of experience. There is a kind of cherry growing on Lake Winnipeg that I found there a year ago last September in the sand. It is a mere shrub, but the cherry is quite large and about the shape and size of the Ox-heart. I saw it on an island. I picked about three pecks of them, and I think if they could be hybridized in this country they might stand the climate better than those we have. They grow about two feet high, but in very poor soil. I have seen the same kind or nearly so on the north shores of Lake Superior.

The PRESIDENT.—The cherries you speak of grow also on the shores of Lake Huron and Manitoulin Island, but are very poor in quality and are known as the Sand Cherry.

Mr. LATIMER.—These I saw were of good quality. I brought quite a quantity to Winnipeg. The plums were pink and somewhat speckled. They seemed to be plentiful and are brought down and sold at Rat Portage.

The PRESIDENT.—Have you had any experience with the Saskatoon berries the Indians consume so largely?

Mr. LATIMER.—No sir; but I have seen berries on the Souris River like currants. I found trees that were very full of them, and I know that parties picked them for preserving. I ate some of them and found them not only of pleasant flavour, but with a large proportion of flesh to seed.

The PRESIDENT.—These Saskatoon berries seem to be superior to our June berries, and might be cultivated here in some of the colder parts of the country.

Mr. LATIMER.—I have picked those at Lake of the Woods, and they are of a purplish blue colour, and are sometimes called sweet plums there. I have seen them growing very similar to a June berry and at a height of fifteen feet. The berry is somewhat astringent. I brought some of them home and after cooking them found them very pleasant, although needing considerable sugar.

The PRESIDENT.—What about the grapes?

Mr. LATIMER.—I thought they were very fine for wild grapes. The clusters were very well formed, and in one of them I counted over seventy grapes. They were fully ripe by the middle of September. The foliage was not downy but thin and rather pale. I made jelly from them. They were not very sour and were quite eatable.

APRICOTS.

Mr. WILSON.—I should like to learn something about Russian apricots or any other variety that will grow in Ontario.

Mr. BEADLE.—I know nothing about Russian apricots. I have seen flaming advertisements, but concluded I would wait and let somebody else be humbugged. In our part of Ontario we can grow apricots well enough, and if some one would have more patience, and plant pits or seeds, we would soon have apricots that would grow in any part of Ontario. I am satisfied from experience in other things, that by this means apricots can be acclimated, when they could not be raised in any other way. There are some seedling apricots that have been growing about Niagara for a number of years. They are of fair quality, but they are seedlings grown from pits. They are said to fruit well, and a large crop is obtained nearly every year. They pay well.

Mr. MORRIS.—I would like to say that there is a seedling apricot near where I live that is a large tree—as large as an apple tree. I have never seen the fruit, but I am told it is very good. I have tried to grow the improved varieties several times, but never could make them fruit. I think there is a great deal in the seedlings. I don't think the Russian apricots have been out long enough to fruit, but I have trees of them.

The PRESIDENT.—Mr. Gibb, who visited the Northern part of Russia, ascertained that some of the markets of China were largely supplied from the Amoor district with apricots. He and I have been corresponding with persons in China, with a view of getting seeds, but have not yet succeeded. If such fruits are grown there in that northern region it is more than likely we can grow them here. Even though we succeed in getting seed, there is no certainty that the fruit will be worth much when grown. The only way we can ever find out the truth in such cases is by experiment.

Mr. DEMPSEY.—We cannot raise apricots in our section. I have done it, but they were top grafted in a bearing plum tree, and fruited until we got a winter sufficiently strong to freeze them. I don't think it makes them any more hardy to top graft them, but we got them into bearing sooner. I have secured peaches in this way, but if we got one crop that is about all possible. The experiment our Secretary has recommended is well worth trying.

Mr. MCCASH.—Some twelve or fifteen years ago, a neighbour said to me:—"I have got some apricot grafts, and I am going to top graft them on a plum tree." He said I could get some of the scions. They got along well, in fact better than the plum tree. I have no name for them. The only trouble I have is when the curculio gets at them.

Mr. DEMPSEY.—Ours are the "Moorpark" and "Breda."

The PRESIDENT.—I have tried both these, but without success.

The Association then adjourned until eight o'clock in the evening.

PROFITABLE PEARS.

The Question Box having been opened at the evening session, the following queries were dealt with:—

"Which one variety of pear is best to grow for profit?"

Mr. DEMPSEY.—If it was just a question of profit, on my soil I should plant Doyenne Boussock. I find more money in it than in any other I grow. It ripens a few day later than the Bartlett. The tree attains a greater size than others and will produce double the quantity of pears, or more, and all the specimens will be fit for market. We have shipped them, and have invariably got from twenty-five to thirty cents more per basket than for the Bartlett. I should plant that variety for profit.

The PRESIDENT.—Suppose you have the choice of another one, what would it be?

Mr. DEMPSEY.—I would take the Bartlett next. This year, however, we found that a good deal of money came out of the Mount Vernon pear. We have just found out how to mature it, and all that it needs is high temperature. Ripen it as fast as you can. We picked in October. It is a December pear with us, but we got it ripe in November. It does not shrivel after picking.

The PRESIDENT.—It was my experience this year, that it shrivelled.

Mr. DEMPSEY.—You did not watch the temperature.

Mr. WELLINGTON.—What about Josephine De Malines?

Mr. DEMPSEY.—It is all a man can ask as a pear. They seem to satisfy the palate of any one.

BLIGHT.

"What variety of pear will stand the blight best, and what is the best preventive of the blight?"

Mr. BEADLE.—As far as my experience goes, the Duchess d'Angouleme blights least. I have seen a little on it, but very little. The Doctor Reeder is another I have never seen much blight on. I know nothing about preventing blight.

A SOUR-SWEET APPLE.

"What is the name of an apple like a Greening in appearance of tree and fruit, but part of almost every apple on the tree is sweet?"

Mr. WILSON (of Chatham).—I asked the question. The fruit is a curiosity to me. One side of the apple is sweet and the other side is sour.

Mr. HILBORN (of Arkona).—We have grown that apple for a number of years. It is called Sweet and Sour Greening. It is said to be a hybrid between the Greening and the Golden Sweet. You can tell by appearance which side is the sweetest. The different flavors are apt to be in streaks.

Mr. WILSON.—Would there be any advantage in an apple like that, for cooking purposes?

The PRESIDENT.—There might be a saving of sugar; bnt I do not think it would be much in demand.

WHERE MAY GRAPES BE GROWN.

On this subject, Mr. Beall, of Lindsay, read the following paper:—

Any one who takes an interest in the development of the fruit-growing industry must experience a sense of great gratification at the results attending the experiments in grape growing (although on a small scale) in so many places in the interior of this Province, where, until within a few years, it was supposed to be impossible to grow this most desirable fruit.

The fine exhibits of well grown and highly flavoured grapes which have been made at so many local exhibitions in the more central parts of the country during the past season show that this branch of fruit culture may in the near future prove to be one of the most profitable, as well as one of the most pleasant occupations, for large numbers of our rural population over an extensive tract of country hitherto supposed to be unsuited to that purpose. The part of Ontario to which I refer especially (and I believe there are many other districts even more favourably situated), extends from the neighbourhood of Kingston in a westerly direction up the Bay of Quinte; from thence up the Trent waters to Balsam Lake, and across the height of land to the southern end of the Georgian Bay.

Let us for a moment consider what are the conditions necessary to this end, then we need not be surprised at the results. First, Suitability of soil. Most authorities agree that the soil best suited for this purpose must be light, porous, friable, dry and warm. Along the course indicated, embracing large tracts on both shores of the Trent waters, and also a large portion of the land near Lakes Simcoe and Couchiching, and also westwards from Lake Simcoe, there are thousands of acres which cannot be excelled for this purpose in any part of this Province. But the most important factor to be considered in forming an estimate of the probabilities of success is the meteorological conditions of such localities; and it is in this particular, as may be learned from the following table, that much of this large area has advantages over some of the more southern portions of the Province, inasmuch as during the period between the latest frosts in spring and the earliest in autumn severe enough to injure the crop, the atmosphere over these parts is much hotter and dryer during the daytime than over much of the more southerly portions:—

AGGREGATE OF MONTHLY MEAN MAXIMA TEMPERATURE at the following places from May 16th to September 30th inclusive, for the years given.

PLACES.	1880.	1881.	1882.	1883.	1884.
Welland	.....	.....	.....	357.16	362.91
Oshawa	.....	.....	.....	343.37	369.43
Toronto	369.05	374.33	351.82	343.89	359.36
Deseronto	.....	.....	.....	364.19	376.92
Lindsay	377.93	385.90	363.27	346.24	375.03
Barrie	367.24	375.62	361.40	349.73	360.88
Gravenhurst	372.56	380.24	357.10	347.99	369.80

From personal observation during many years, taken in connection with the material from which this table is compiled, I am of opinion that during the seasons included in the four and a half months referred to, an aggregate maximum temperature of 350° is the minimum of heat required to ripen the earlier varieties of grapes, and that at least 10° of additional heat is necessary to ripen the later varieties, such as the Concord, and others ripening a few days after that variety.

The summer of 1883 will long be remembered by vineyardists as being a very unfavourable season for the grape crop. By referring to the above table it will be seen that the aggregate of 350° of heat was exceeded only at Welland and at Deseronto during that season, and even in the Welland district the heat was not sufficient to ripen the late varieties before the 1st October. North of Lake Ontario the heat was not sufficient to ripen the earlier varieties in either of the localities given but at Deseronto, at which place the climate (judging from the observations recorded during the last two years) would seem to be peculiarly suited to the successful growth of the grape vine.

If the conclusions here arrived at are correct, then people in any locality may easily ascertain if that place is suitable for the successful cultivation of the grape plant, and the answer to the question, "Where may grapes be grown?" will be:—Where the soil and situation are suitable; where there are no spring frosts after the 15th of May; where there are no autumnal frosts earlier than the 1st of October more severe than two or three degrees below the freezing point on an occasional night, and where the maxima temperature of the several months between the dates given shall at least be three hundred and sixty degrees, *i. e.*, that from the 16th of May to the 1st of October—138 days—the maximum daily temperature must average over 72°. Throughout this tract of country, extending nearly 200 miles from east to west, and ranging in width from five to twenty miles, many thousands of acres of land may be found where the quality of the soil and its exposure are eminently suited for this purpose, and of but little value for ordinary agricultural purposes, and where the climatic conditions favour the growth of our quick ripening varieties of grapes to such a degree that we may soon expect this industry to become one of our most extensive and most profitable branches of horticulture.

This statement will appear more probable when we compare the climate of some of the wine-producing districts of France and Germany, taking Paris as a centre from which to obtain reliable meteorological information with that of Toronto and its outlying districts. From "The Atmosphere," by E. Flammarion, we find that the average mean temperature of the summers at Paris for the thirty years from 1841 to 1870 inclusive, was 64.52°, and from "Abstracts and Results," issued from the Meteorological Office at Toronto, that the average mean temperature at that place for the same period was 65.05°. From more recent records we find that the average mean temperature for the last five years at Toronto was 65.42°; at Lindsay, 64.39°; at Barrie, 65.75°; and at Gravenhurst, 64.01°.

The mean temperature, however, as before shown, is only one of the factors necessary. The length of the season is of equal importance, and it is in this particular only that the wine districts of France and Germany have any advantage over this country. Frosts in May and June are more frequent and more severe than in any portion of this district. There the season for commencing spring operations is several weeks earlier than with us; hence the chief reason why the varieties grown there cannot be grown in the open air in this country. The rain-fall in the wine districts referred to is about the same as in Ontario; but such intense midday heat as so often prevails in some of the inland portions of this Province is very rare in the wine districts of France and Germany.

Let the facts be established by experiments on a fairly large scale that suitable lands for vineyard purposes are plentiful over this large area, and that the climate is all that is necessary to insure—under proper management—healthy cane growth and well ripened fruit in average seasons, then men of experience having capital to invest will soon revolutionize the grape market. And that these facts will at an early date be established is evident from the success attending the efforts of such men as Mr. P. C. Dempsey, at Murray; Mr. J. W. Johnston of Campbellford; Mr. T. C. Chapman, at Baltimore; Mr. John Knowlton, at Sturgeon Point; Mr. P. Bertram, Mr. H. S. Scadding and others at Orillia, who will in a short time place this question beyond doubt.

Since the foregoing was written my attention has been called to a most valuable paper on "A Few Canadian Climates," by J. Gordon Mowat, Esq., and published in the Proceedings of the Canadian Institute for July, 1884, the last paragraph of which, and also the "Note," is hereto subjoined, and to which (in the table) I have added the average monthly means for the last five years—1880 to 1884 inclusive—of Lindsay, Barrie and Gravenhurst :—

"By a British standard the summers, of much of the Province may be considered long. May in south-western Ontario is warmer than July at Edinburgh; September is warmer than July in London, and warmer than September at Vienna. The vine, maize and sorghum fully mature in most parts of the Province south of the 46th parallel, and in not a few districts yield as abundantly as in any part of America or Europe. The limitations on the cultivation of the vegetals of similar latitudes in Europe is more in the intensity of the winter frosts than in the lack of a sufficiently long or warm summer."

"NOTE.—The length and heat of Ontario summers contrasted with those of other places in Canada, and various places in Europe, may be seen by a glance over the following table. The means for Toronto, Hamilton, Windsor and Winnipeg are derived from the annual records of the Canadian Meteorological Service for eight years (1874-81); those from Montreal from same records for six years (1875-80); those from Pelee from C. M. S. station reports for three and a half years. The averages for European stations are quoted from Blodgett's "American Climatology," and are for periods, with few exceptions, longer than eight years."

MONTHLY MEANS OF CANADIAN SUMMERS.

	May.	June.	July.	Aug.	Sept.
	°	°	°	°	°
Toronto	54.2	62.6	69.0	67.8	60.3
Hamilton	57.6	66.0	73.4	71.3	63.9
Windsor	60.8	67.9	73.4	71.4	63.8
Pelee	59.2	67.1	73.5	72.9	66.3
Montreal, Que	55.0	65.0	69.8	68.1	59.0
Winnipeg, Man	52.9	61.8	67.3	64.1	51.9
Lindsay	52.8	61.7	65.6	65.6	59.2
Barrie	53.4	62.8	67.4	67.0	60.5
Gravenhurst	52.8	61.7	65.4	64.5	58.1

MONTHLY MEANS OF EUROPEAN SUMMERS.

	May.	June.	July.	Aug.	Sept.
	°	°	°	°	°
Edinburgh	50.3	56.0	58.7	56.8	53.4
Aberdeen	52.3	56.7	58.8	58.0	54.6
York	54.5	59.2	62.0	61.1	55.7
London	55.8	58.7	61.7	58.9	56.6
Dublin	54.4	60.2	61.5	61.4	56.5
Paris	58.1	62.7	65.6	65.3	60.1
Rochelle	59.4	67.5	69.0	66.5	62.4
Vevay	58.2	64.4	68.4	64.4	59.6
Munich	57.6	62.1	64.7	64.1	58.1
Berlin	56.5	63.3	65.8	64.4	58.4
Koningsburgh	52.0	57.4	62.6	61.7	53.6
Vienna	62.1	67.5	70.7	70.0	61.9
Bucharest	56.3	62.5	68.1	65.2	58.3

The PRESIDENT.—Let us now hear which varieties are best?

Mr. A. M. SMITH (of St. Catharines).—I am not a professional grape grower, and have not grown them to any great extent, although I have a good many varieties planted for experimental purposes. As far as my experience and observation goes, however, I can give that. In our section the principal variety grown for the market has been the Concord. That has been considered the grape "for the million." A great many of our grape growers have made money out of the Champion *alias* Beaconsfield. The earliness of it gives it a chance ahead of others; but as soon as other grapes ripen the prices come down. I do not know that it is always a good plan to get the opinions of nurserymen on the best varieties of grapes, as they will be likely to have a preference or an interest in some particular variety. Some of our most prominent grape growers are turning their attention to the new white grape, the Niagara, which they claim is equally as hardy as the Concord, and of a better quality. It hangs on the vines until frost comes, and stands shipment.

The PRESIDENT.—What about the Worden?

Mr. SMITH.—That has not been fruited to any great extent. It is said to be five or six days earlier than the Concord, although many claim it is not so productive. Many Concords have been sold for Wordens. There are several other varieties that are promising well. I saw one good vineyard of the Pocklington, although in some portions of the country I am told they have not succeeded.

The PRESIDENT.—Have you tried the Vergennes?

Mr. SMITH.—I have fruited it on my place, but cannot tell anything as to its market value; I should like to speak of another white grape called the Jessica, which originated in the vicinity of St. Catharines. It is but a few days later than the Champion, and of very excellent quality. It is one which no amateur should be without. It is small, and would hardly do on that account for market purposes.

The PRESIDENT.—How does it compare with the Delaware?

Mr. SMITH.—The berry is about the same size, but the cluster is not so good.

The PRESIDENT.—How does it compare in quality?

Mr. SMITH.—For my own part I would prefer the Jessica. I cannot yet speak of the Prentice.

The PRESIDENT.—Have you fruited the Lady to any extent?

Mr. SMITH.—Yes, I have. It is a good amateur grape. It is a fair cropper, but does not compare with the Concord or Niagara.

Mr. MOTT.—I have had very little experience. I planted about one hundred vines, but owing to exposure and intense heat the grapes and vines both dried up, and the plantation was a failure. Those I had were mostly Concord.

Mr. PARKER (Ingersoll).—I should say the greater number of amateurs would prefer the Delaware. The Concord for market purposes would no doubt be profitable. I have grown the Brighton, Rogers' No. 15, and No. 4, and the Salem; but for the last two or three years the Salem has mildewed. There are several other varieties, including the Iona and Isabella, that I have tried, but the Lady I have never been able to ripen. The Pocklington I have not had much success with. As an amateur grape, I think the greatest number of persons would vote in favour of the Delaware.

Mr. WARNER (of London).—The Janesville is what I have chiefly grown, and I find it very prolific and early. It is not very nice until well ripened, and a difficulty with it is that it seems to be ripe before it really is so. It is very hardy.

Mr. WARNER (of Grimsby).—My own experience does not extend over more than a few years, and I think that if you wish to grow grapes, you must prove all the varieties and ascertain which is best. Grapes which do well in one section will not do so in another. A gentleman has spoken against the Pocklington. I have a neighbour who is making more money out of it than any other. He spoke favourably of the Rogers' while a neighbour of mine complains of it on account of the mildew. Each should try the different varieties in his own locality, and prove for himself which will suit.

Mr. CROIL.—My experience will be worth very little to you. The Delaware we have considered about the best. I differ from a great many when I say we like the Hartford very well. Rogers' No. 3 ripens very well, and without mildew. The Brighton has done very well, and so have Worden and Moore's Early.

Mr. MANVILLE (of London) —My Rogers' No. 15 has done well.

Mr. DEMPSEY.—We grow quite a few varieties, and right here let me drop a word about Rogers' Hybrids. Some of them we thought perfect failures. While one succeeds another fails on account of mildew. With many, such as No. 34, No. 5, and No. 17, and Salem 22 fail; but No. 44 appears to fill the bill perfectly. It is a little late, but a trifle earlier than the Concord. It has a very large berry and commands a high price in the market. Rogers' No. 15 gives us perfect satisfaction, as also No. 3, No. 4 and No. 9. The Delaware is one of our best grapes. It succeeds both in Northumberland and Prince Edward counties. We really should not ask anything superior. Mr. Smith was speaking of the Worden. It seems to me we shall want more of that. Sometimes it will ripen ten days earlier than the Concord, and is invariably better and larger, and I think it will produce more pounds to the vine. Moore's Early is a very good grape indeed. I cannot say anything against it, but I cannot get enough grapes to pay me for cultivating it. That is also the case with the Lady; it does not produce enough fruit. We must have quantity if they are to pay. I grow some of the Chasselas and Black Hamburgs and Burnet out of doors. We eat those. Don't let me forget the Champion. We don't grow that to eat; but there is more money in it than any other. The Brighton is A1. We can get none better as an amateur grape, and we need not ask anything better. We cannot, however, depend on it retaining its flavour long after being picked. I would not like to be without the Brighton for my own table, and it is very good for the local market.

Mr. MORRIS.—When friend Dempsey was speaking of the Champion, I thought this Society ought to fine any one for growing it. When placed on the market it makes the purchasers disgusted with all other black varieties for the season. With reference to the Worden, which it is said will displace the Concord, I would say that I do not think so. It is liable to drop and to crack. It is slightly better in quality, and sometimes will ripen a few days earlier. I have grown it for ten years, and it has varied. Another black grape not appreciated is Rogers' No. 4. I think it is as good as the Concord and will bring fifty per cent more. It ripens a little earlier than the Concord. I consider Rogers' 4 the best of Rogers'. It is better than 44, which would come next. All other varieties have failed with us. Among the black grapes, a new one is the Early Victor. It is a small grape, but I think it is going to be a good one. It will hang on the stems until winter. It ripens about with the Delaware or a few days earlier than the Concord. I agree with Mr. Dempsey regarding the Brighton. I think it one of the best grapes grown. I may state that the market value in Rochester was 15 cents per pound, retail. It is my opinion that white grapes will not sell as well as blacks, soon. There is a grape called Mary, and it has been considered the same as Rogers' No. 3, and on that account has not been taken hold of. I have found that it is quite different. I have the two growing side by side. The Mary was clean and good in every way, and all ripened well, but No. 3 was not good. As Mr. Warner has said, grapes, like all fruits, demand soil to suit their wants. I think many fruits need strong clay. The Delaware requires strong soil. The Concord will grow in almost any kind of soil.

Mr. BEADLE.—I shall have to repeat a good deal. I have given up the Adirondac. It is a poor cropper. The Agawam I like very much. It is Rogers' 15, and I think it is one of the best of Rogers'. Allen's Hybrid is no use. It mildews, and is not worth time or attention. They only claim that the Bacchus is a wine grape. I have only fruited it once and cannot say much about it. Barry is pretty good. It is Rogers' 43, but still I have seen nothing in it to lead me to cultivate it largely. Brighton I value very much. I go to that vine as soon as the grapes are fairly coloured, and eat them. I can hardly pass it. I should think for a near market it would be very profitable. They are good looking, of a reddish colour, and if the Champion had got into the market they ought to sell all the better. Beaconsfield is nothing but the Champion, and any one who knows what one is, knows the other. Those who want to eat it, let them. The Catawba we can only grow along the shore of Lake Erie. In St. Catharines we rarely get them ripened. The Champion is about the most worthless grape, except for the market, that I know of. The Clinton is used largely as a wine grape, and in favourable seasons is to me one of the most delightful of grapes. I think there are some localities where the

Clinton could be grown and it would be very highly esteemed. You can gather it in the autumn, and store it away in a dry, cool place, where there is not too much current of air to shrivel it, and it will keep until now, and be very nice to eat. The Concord you know all about. Probably there are more Concords grown than any one other grape, and our markets are pretty well supplied. Gentlemen who grow it say if they get four cents per pound it is better than any other grape. The Croton mildews. The Creveling I like very much, but it is very hard to get a nice cluster. It ripens before the Concord, and perhaps a vine or so may be desirable in a collection. The flavour to me is pleasant. The Delaware is a favourite. It grows well on my soil, is of a pleasant flavour and ripens before the Concord. It is a red grape, and I presume you are acquainted with it. The Diana grows too rampant, and goes to vine about twenty yards in a summer and when it ripens it is so musky I do not want to eat it. The Duchess I am afraid is not going to answer our purposes. I like the flavour, but I fear the vine has not that vigour that will make it a success. It does mildew. Yet from only a few years' experience I ought not to be positive. I want to hold on to a vine or two, because I like the flavour very much. Of the Early Victor I should talk louder than Mr. Morris. I find it ripens before the Concord, but if you let it hang until the Concord is ripe I think it is improved. It is about the size of the Clinton, the cluster is the same and the colour is black. The berries are set very compactly on the bunches, and it belongs evidently to the Labrusca family. I believe the vine is perfectly hardy, and I would suggest to anybody who has any difficulty in ripening the Concord, to try it. The Eumelan has not been a success. My vine got killed, but a neighbour of mine who has vines, tells me he does not think much of it. It is one of the earlier varieties, but lacks flavour. The Francis B. Hayes I have not fruited. It is one of the new white grapes that originated in Massachusetts. I think Mr. Moore was the originator. Goethe is too late for general cultivation and will only do where the Catawba will ripen. The Hartford Prolific is of medium quality. It doesn't ripen any earlier than Brighton. I don't think much of it as for quality. The Iona I esteem very much for quality, but it doesn't ripen with me every year. My neighbour takes great pains with it, and likes it very much, and he generally gets it ripe by cutting off half the bunches, and takes only half a crop, and leaves abundance of foliage. I give you that hint. It will surely ripen all along the County of Essex and north shore of Lake Erie. The Isabella you all know about. The Israelia lacks flavour and character. The Janesville, which some one spoke of, belongs to that miserable class that the Champion belongs to. Too foxy altogether.

The PRESIDENT.—What I have eaten was not foxy.

Mr. BEADLE.—Perhaps I was deceived in my vine, and I have none now. If that was it I don't want any more. The Jefferson, I am afraid, is going to be too late. I should make haste slowly in planting it. I thought it was going to be very good, but I think I have made a mistake. It is going to be too late, and so of the Lady Washington. The Lindley, another of Rogers', I think very highly of, and deem it one of the most desirable of his grapes. It does not seem so subject to mildew as the Salem, and I think you will do well to try it. The Martha is like the Concord, and about as hardy, and does not ripen any earlier. Some have christened it the White Concord, and I don't know but that it is as good a description as you can have. Those of you who like Concord grapes will no doubt like to have it. The Massasoit is one of the earliest ripening of Rogers' grapes, but the clusters are apt to be defective. It ripens about the same time as Moore's Early, and being one of Rogers' earliest varieties, will be valuable on that account. Regarding Moore's Early I may say that those of you who want a grape tasting like the Concord and ripening very early, will probably be pleased with it, if you don't want too large a crop. It does not crop abundantly. The Northern Muscadine: it drops from the vine about like the Champion, and tastes like a muskrat, or tastes as it smells. The Prentiss I do not think is going to be a success; still it has been widely scattered. I think it is going to be a White Isabella. The Rebecca has not been a success. It does not stand the sun and does not stand the winter, but it is a very nice little grape when you get it in perfection. One of my neighbours generally gets some nice fruit. I have seen better fruit of it in his garden than any other. I refer to James Taylor. I cannot recommend any one to try it unless they are willing to be patient. The Salem has been

spoken of. The Senasqua has not made headway, as it appears to be too late. Union Village is a large black grape of poor quality. The Vergennes is a long keeping grape, which originated in Vermont, and when I first got it I was under the impression it was an earlier ripener, but it does not ripen earlier than the Concord. I believe, however, it will ripen where the heat would be sufficient for the Concord. If you get it ripe it will keep. I have eaten it in February in very good condition. The Walter has not proved a success. I do not know but that it may have done better elsewhere. The Wilder is a very valuable grape. It is one of the largest black grapes we have. I have seen them as large as a decent sized Damson plum. By thinning out the clusters you can grow splendid specimens, and it will succeed wherever the Concord will. The Worden has already been spoken of. I thought I had got the Concord instead of the Worden, and for a long time I believed it was nothing else, but I have at last become convinced that there was a grape which would ripen where the Concord would not. The Pocklington was at the end of my trellis and did not fruit with me until this year, and one year's experience is not sufficient to speak regarding it.

Mr. GOLDIE.—I wish to ask Mr. Dempsey if he did not fruit a grape which he showed at Barrie. It was a beautiful one.

Mr. DEMPSEY.—The White Grape spoken of was a brother to the Burnet. It was very prolific and produced a good sized bunch of berries, and when ripe was certainly delicious. The foliage is inferior and we can only grow it by using sulphur to prevent mildew. It is a little late. It carried a heavy crop last year. Mr. Morris spoke about White Grapes not being sought after, but this year the Agawam brought good prices.

The PRESIDENT.—The Clinton Grape is very much run down by many. Of all the grapes that can be used for canning or preserving, however, none come up to it in point of flavour. I concur with what our secretary has said regarding all the varieties of which he spoke. He omitted one grape, however, and that was the Canada—one of Charles Arnold's seedlings—which does very well with me. I think the market is likely to be glutted with White Grapes when they get to be abundant.

Mr. W. WELD (of London).—I have been thinking about a new grape not mentioned here—the Niagara.

Mr. BEADLE.—I can only give an opinion from eating and seeing it in Mr. Hoags' vineyard, who was the originator of it. In point of quality it is foxy like the Pocklington. I got the Pocklington from Mr. Charlton; but I never finish eating a bunch. I can eat a few of them, but I do not like that foxy taste. I would rather eat the Clinton or Brighton. But there are plenty of people who do like it. I remember a gentleman remarking of some of those grapes, "What a delicious fragrance." I dislike it very much. I must not, therefore, set up my taste as a criterion.

Mr. THOMPSON.—How does it compare with the Jessica?

Mr. BEADLE.—About as the watermelon compares with the squash.

ROSES.

Mr. WARNER (of London).—I have only a small garden, but I grow some hundred varieties. The Victor Verdier is very good and so are the Giant de Batailles and Coquette des Alps. I never found the Giant de Batailles mildew. Some new varieties that I have had during the last few years I cannot give an opinion about. The John Hopper and General Jacquimenot are good free bloomers. You can scarcely give roses too much food. The La Reine is very good, and so is La France. La Reine is beautiful, but not a strong grower.

The PRESIDENT.—What variety of climbing roses do you like best?

Mr. WARNER.—The Baltimore Belle and Queen of Prairies.

Mr. BEADLE.—Have you a climbing rose that is fragrant?

Mr. WARNER.—The Baltimore Belle is, but the Queen of Prairies is not. There is also the Washington, which is fragrant. The White Washington is a strong grower and can be made to climb.

Mr. BEADLE.—Have you tried Lord Raglan?

Mr. WARNER.—Yes; but I do not care much about it.

Mr. BEADLE.—Have you tried Prince Camille de Rohan?

Mr. WARNER.—Yes; but it is not a free grower.

Mr. BEADLE.—Is Xavier Olibo any better?

Mr. WARNER.—I do not know. The Abel Carriere is a good one.

Mr. M. W. MANVILLE (of London).—As far as London is concerned, Mr. Warner is the father of us all in roses. The best flowers that I have had this year have been from Magna Charta, Madame Charles Wood, and Annie De Diesbach. The Bella and Douglas are splendid bedding roses. I have adopted the bench system entirely. (Mr. Manville described his mode of building the benches at length.)

Mr. MITCHELL (of Innerkip).—I am only an amateur, as I have but thirty varieties and they are outdoor roses. Perhaps the most satisfactory outdoor rose is the Alfred Colomb, which is perfect in form and profuse. Perhaps the most perpetual bloomer of the hybrids is the General Washington. It is a dwarf. It is really a perpetual bloomer, but its worst fault is that it is scentless and occasionally comes malformed. The best white hybrid is Madame Noman. It is not only perpetual but stands our dry wind better than any rose we have. It is the most satisfactory white rose I have yet raised. At the same time that I got Madame Noman I got another variety which was described to me as identical with Eliza Boell, but it is not nearly so white. I think the Baroness Rothschild overrated. It is very fleeting. A bloom will last for perhaps a day if the weather is moist and that is the end of it.

The PRESIDENT.—Have you tried Marshall P. Wilder?

Mr. MITCHELL.—No; but I have seen it growing and pronounced it Alfred Colomb, but they quickly set me right. It has scent. It was blooming freely, but perhaps it had a little extra attention. Any one who has Alfred Colomb cannot be far behind. Among the dark roses I have found none better than Louis Van Houtte. Jean Libaud is another. La France I have found a very fine rose under glass. I can get better bloom indoors than outdoors. Yellow petals will wither outdoors. As to which varieties are the best I would put Alfred Colomb at the head, and Madame Noman among the white roses first. For outdoors Louis Van Houtte is best; but if you wish the largest roses at the shows take Paul Neyron.

Mr. DEMPSEY.—I have cultivated La France in open air. If grown under the rays of the sun, the petals fall on the outside, and it does not do so well as under partial shade. To me that rose fills the bill. The La Reine I would not throw aside under any consideration. In point of fragrance and beauty we have not got far ahead of the old cabbage rose.

Mr. WELLINGTON (of Toronto).—We must have rich soil for roses, and if it is very dry and warm, shade them until they get a start. The reason so many fail is because they do not feed them, and if this is done you are not so apt to be troubled with insects. On lawns the feeding is neglected, and how can you expect good bloom? In giving a list it is impossible not to omit some that are really valuable. La France I would always plant, because it is a favourite of mine. It is one of the most prolific bloomers. The perfume is exquisite, and its appearance cannot be beaten. Being a little tender it will need more protection out-doors than many other varieties. Then Alfred Colomb, which has been described. Baron Von Stetten gives large full bloom, the only objection to it being that it is shy in autumn of blooming. Then come Countess Serenye, Coquette des Alps, General Jaquimenot, La Reine, Paul Neyron, Pierre Notting, Caroline de Sansal, Louis Van Houtte, and Annie De Diesbach. If climbers are wanted, there are Queen of the Prairie, Gem of the Prairie, and Baltimore Belle. I would advocate partial shading for out-door roses. In England the overcast skies and absence of burning suns bring about the large bloom they have there.

Mr. BEALL.—The time to see a rose in all its beauty is at sunrise in the morning.

Mr. MORRIS.—The kinds I would name as being hardy are General Jacquimenot, La Reine, Coquette des Alps, and Giant de Batailles. Anybody can grow these.

Mr. BEADLE.—I have found Madame Hardy so free and make such a beautiful show that it should be added.

Mr. BEALL.—Madame Plantier is good.

Mr. DEMPSEY.—We protect our roses by bending them down to the ground and covering them with forest leaves.

Mr. GOLDIE.—The best thing I have found is to bend them over and place a sod on top of them.

The Association then adjourned until the morning.

SECOND DAY.

On Thursday morning the Association re-assembled and proceeded to discuss the Question Box.

THE LAWTON BLACKBERRY.

Can the Lawton Blackberry be profitably grown in Ontario, and what other varieties are considered better?

JOHN LITTLE (Fish Creek).—There is no use in trying to get a paying crop of the Lawton blackberry in this part of Ontario. Agawam and Stone's Hardy, and Western Triumph, have done well with me. The winter did not affect Stone's Hardy in the least. It is scarcely as large as some of the wild ones, but it is very sweet. The Kittatinny is very sweet, but it is like the Lawton; it does not stand the winter with me.

The PRESIDENT.—The Snyder has been very hardy with me. I am glad to hear that Stone's Hardy and Agawam are doing so well. Mr. Deadman, a few miles out of London, has sent the Snyder into the London market, and in size they have been better than mine. His soil is stronger, and it is evident that with proper care and cultivation, the Snyder will turn out much larger than the ordinary wild fruit. There is a new berry which the Secretary and I heard of when in Ohio lately, that seems to promise well. It is a dewberry, known as the Lucretia. It can easily be protected with a little litter or mulch. It is said by those who have seen the fruit that it is as large as the Kittatinny. There is another variety, the Early Harvest, which does not seem to be as hardy as the Snyder.

Mr. LITTLE.—The Early Harvest has killed down to the snow-line every year since I planted it.

ASPARAGUS.

Is Asparagus culture profitable for market purposes?

Mr. CAMPBELL (of London).—It was the most profitable thing I grew. I planted it in rows about eighteen inches apart. I had no beds, as I found that plan not to succeed. I top-dressed every year with manure.

THE WILSON STRAWBERRY.

Is the Wilson Strawberry deteriorating in vigour?

Mr. MITCHELL.—I do not think it is. In some places where grown under certain treatment for a long time, it has departed from its natural characteristics. I can get the Wilson to do as well as it ever did. On the other hand, I have seen it in places where, through the fault of the cultivation, it has so deteriorated as to be away from its old standard. We may have got other strawberries, with finer flavour and larger size, that have lowered our opinion of the Wilson. It does not stand as high as in the past.

Mr. LITTLE.—The Wilson is not what it used to be years ago.

Mr. CAMPBELL.—The Wilson does not stand dry weather very well.

Mr. HILLBORN.—With us they do not seem to be as easily grown as a few years ago.

BLACK RASPBERRIES.

What is the most desirable black raspberry for amateurs to cultivate?

Mr. HILLBORN.—It is hard to pick any one as best. I think the Mammoth Cluster would be one of the best. I would suggest three varieties: Tyler, for early; Mammoth Cluster, for medium; and Gregg, for late.

RASPBERRIES.

How does the Hansell compare with other raspberries, such as the Highland Hardy, in earliness, productiveness, size, shipping qualities, and profit?

The SECRETARY.—I would not give the snap of a finger for the Hansell.

Mr. LITTLE.—The best feature I can see about the Hansell is the growth of the plant. The Highland Hardy is as good as you can have, except the Herstine.

THE STATISTICS OF FRUIT-GROWING IN ONTARIO.

The statistics of fruit-growing is an interesting as well as an important subject, but it is one not to be easily dealt with in so far as relates to the Province of Ontario. The fact is that such returns as have been obtained are conflicting, and it is yet too early to express a positive opinion as to their accuracy. According to the census the area in orchard and garden in 1881 was 281,541 acres in the rural municipalities, and 23,264 acres in the urban—making a total of 304,805 acres for the Province. According to the municipal returns, which were collected by assessors for the first time in 1883, the area in rural municipalities was 197,450 acres, and in 1884 it was 192,837 acres. The discrepancy between the census and the municipal enumerations is nearly 90,000 acres, and is too large to be readily accounted for. The source of information is the same in both, for the census collectors and the township assessors make a house to house canvass alike. Why should there be so great a disparity in the results? Why should the census for 1871 give as large an acreage as the assessment for 1883? I cannot answer, but upon comparing the assessors' returns for the two successive years 1883 and 1884, I am disposed to think that they are more reliable than those of the census. Between these years the difference is only 4,600 acres, and when one considers that there are about 200,000 farmers in the Province it is obvious that a very slight change in the returns of one-tenth of their number might account for the aggregate. There are not many farmers, even in the oldest settlements, who know the exact area they have in orchard and garden; but it is a reasonable supposition that when they find the question asked by the assessor year after year, as it now is, they will, in a growing number of instances, endeavour to answer it by actual measurement. Four or five years hence we shall doubtless know the area of orchard and garden in the Province with almost as near approach to accuracy as we now know the area of cleared land.

Assuming that there is uniformity in the system of taking each decennial census, the returns have at least the value of enabling us to show the rate of progress made. Thus, we know that in 1851 there was in Ontario on every hundred acres of cleared land, an average of one and a half acres in orchard and garden; that in 1861 the average was about the same; that in 1871 it was two and a third acres, and that in 1881 it was two and three quarters. The last, it must be allowed, is a very good average for the whole Province, and even according to the assessors' returns of areas it is an average of nearly two acres for every hundred cleared.

In the following table the acreage at four decennial periods is given by county groups, arranged as nearly as may be according to their climatic conditions—the figures being for rural districts only:—

	1881.	1871.	1861.	1851.
6 Lake Erie counties.....	53,338	38,068	18,537	10,964
3 Lake Huron "	29,418	18,697	3,589	988
2 Georgian Bay "	18,839	10,253	1,666	733
7 West Midland "	57,632	43,859	19,478	10,909
9 Lake Ontario "	76,177	55,683	28,452	20,981
11 St. Lawrence & Ottawa "	28,788	20,568	8,388	7,731
4 East Midland "	15,383	10,409	7,832	2,704
4 Northern Districts.....	1,966	159	16	.....
TOTALS.....	281,541	197,696	87,958	55,010

These statistics furnish us with a succinct history of fruit-growing in the Province, and they are of still greater value in this respect if studied by counties. In the county

of Middlesex, for instance, the area in 1851 was 2,388 acres; in 1861 it was 5,030 acres; in 1871 it was 11,908 acres, and in 1881 it was 15,576 acres. In the County of Bruce the area increased from 38 acres in 1851 to 8,401 acres in 1881, and in Grey it increased in the same period from 56 acres to 10,408. As evidence of progress these figures are very valuable, assuming even that they are correct in a relative sense, and if the same rate of progress be maintained in the next thirty years Ontario's position will be a proud one among the fruit-growing countries of the world.

The statistics of acreages as collected by township assessors in 1883 and 1884 are given by county groups as follows:—

		1884.	1883.
6	Lake Erie counties	39,952	40,084
3	Lake Huron "	19,952	19,907
2	Georgian Bay "	11,577	12,228
7	West Midland "	41,628	42,800
9	Lake Ontario "	55,112	57,358
11	St. Lawrence & Ottawa "	14,320	14 760
4	East Midland "	9,780	9,950
3	Northern Districts	516	363
	TOTALS	192,837	197,450

The greatest discrepancy in the areas of these two years occurs in the Lake Ontario counties, and is largely owing to the recent extension of the limits of Toronto—the annexed lands being chiefly occupied as nurseries and market gardens. In the West Midland counties the returns of decreased acreages are confined almost wholly to the counties of Brant and Perth. With reference to the Northern Districts, it should be remarked that no returns have been received from settlers in the unorganized municipalities, but their total is probably less than 1,000 acres.

As I have already intimated, it is yet too soon to say definitely which statistics are the most reliable, those of the census enumerators or those of the assessors, but in calling attention to the wide difference which the returns present it may be possible to arouse an interest in the subject that will soon terminate the doubt.

Concerning the quantities of fruit grown in the Province, we are practically limited to two sources of information, neither of which are wholly satisfactory. We have in the census returns of 1871 and 1881 statistics of fruit under three heads, viz., apples, grapes and other fruit. We have also in the trade tables of the Dominion the quantity and value of the exports of green fruit from year to year; but in consequence of the practice of crediting a Province with all exports made from any port in its territory, regardless of the place of production, it is not possible to ascertain definitely how much of the total exports of fruit are the growth or product of Ontario. The nearest approach to definite figures is to be obtained by comparison of the census and the trade tables: having ascertained Ontario's proportion of the total fruit crop of the Dominion, we can form an idea of her share of the exports. The census returns gave the crops of 1870 and 1880 as follows, for Ontario and the whole Dominion:—

		Ontario		Dominion	
		1880	1870	1880	1870
Apples	bush.	11,400,517	5,486,504	13,377,655	6,365,315
Grapes	lbs.	3,697,555	1,028,431	3,896,508	1,126,402
Other fruits	bush.	644,707	242,878	841,219	358,963

Now, for both of these years Ontario's produce was about 86 per cent. of that of the whole Dominion, and if it be assumed that her proportion of the exports is about the same, we can estimate with some degree of accuracy the progress made by our Province in fruit-growing from year to year. The following table gives the quantity and value of Canada's exports of green fruit for the sixteen years 1868-83, grouped in periods of four years each, and the annual average for each period:—

First Period.			Second Period.		
Year.	Barrels.	Value.	Year.	Barrels.	Value.
1868	34,405	$87,333	1872	106,568	$264,015
1869	11,310	30,150	1873	61,243	183,348
1870	20,810	58,811	1874	51,084	128,915
1871	45,920	98,857	1875	63,397	176,295
Averages	28,111	$68,788	Averages	70,573	$188,143
Third Period.			**Fourth Period.**		
1876	84,107	$170,005	1880	146,548	$347,166
1877	77,888	194,942	1881	334,538	645,658
1878	53,213	149,333	1882	212,526	540,464
1879	87,101	157,618	1883	158,018	499,185
Averages	75,577	$167,974	Averages	212,907	$508,118

The progress of our fruit-growing industry which these figures clearly indicate is very gratifying, and there can be no doubt that the fruit-growers of Ontario deserve in large measure the credit for it. The climate of the Province—more especially that portion of it encircled by the three great lakes—is admirably adapted for the maturing of the finest qualities of fruits; and, possessing the natural conditions for the production of fruit that has an established reputation in foreign markets, the energy and intelligence of our people may be depended on to make the greatest possible use of our splendid opportunities.

A. BLUE.

Toronto, February, 1885.

On motion of Mr. Bucke, seconded by Mr. Wilson, the thanks of the Association were tendered to Mr. Blue for his excellent paper.

POTATOES.

Best Varieties and Mode of Cultivation.

Mr. Dempsey.—The improvement in varieties has been something wonderful. Among those that I am now cultivating I place for an early potato the White Star ahead of all others. With us it is an abundant cropper, and in quality and appearance is all that we can desire. For a late potato we still adhere to my own seedling. We have several other varieties in cultivation that are succeeding very well.

Mr. Wright.—I am an amateur grower, and only go into it extensively because I take a cruel delight in beating the farmers at our exhibition. Last year I grew some nine varieties, and among those that turned out best I found nothing to excel the Early Rose. For a medium potato I found the Blush one of the best I have. This was sent out by the *Rural New Yorker*. For late potatoes I prefer the White Elephant and Garnet Chilli. The Garnet was also sent out by the *Rural New Yorker*. It is not desirable to have too large a potato, because a medium, well-shaped tuber takes the best. I entered the *Rural New Yorker* list last year among those who grew the largest potatoes, but there were sixteen ahead of me, although I think I raised the largest sent from Ontario, weighing two pounds and one ounce, and perfectly formed. A man out west, however, grew one weighing four pounds and eight ounces. I never expect to raise potatoes to compete with the rich lands out west. My mode of culture is this:—I plant them in hills three feet apart. I have three eyes in each piece and put three pieces into each hill. I grow them on a clay soil, and yet a great many around me who have the same kind of soil cannot grow them at all. Therefore, I take the more delight in showing them what can be done on my clay land. I mix mine largely with muck. I draw it in winter three miles and spread it over the ground, and by that means I grow good-shaped and smooth potatoes. Every farmer knows that on new ground he gets the finest shaped and earliest potatoes. I consider that, the cause of my success. I also use plenty of unleached ashes and every two years give it a dose of salt so that you can see it on the ground. I always succeed, but have never yet grown 1,391 bushels to the acre, as the *Rural New*

Yorker claims was done on their ground. This last season I tried the experiment of mulching potatoes. I covered them with straw and never hoed them, and kept them weeded out; and then I took another piece and treated it in the ordinary way. I had a larger crop on that portion which I had not mulched. The Blush yielded as large as any.

Mr. McBroom.—The varieties mostly grown here are:—The Beauty of Hebron, for market purposes. The Early Ohio is popular with a great many on account of its earliness, although it does not yield so largely as the Hebron. A variety I like very much is the Chicago Market. I believe it is considered identical with Clarke's No. 1. It is handsome and yields well. These three varieties are all I have planted myself. The Early Rose is very largely grown here, and is popular; but I do not think it is so prolific as the Beauty of Hebron. The White Star, already mentioned, is a fine potato, and I presume will become popular, although, because it is white does not take on our market. The rose colour is most popular, and the three I mentioned are of that colour.

Mr. Campbell.—I think a great deal of the Early Rose, but having found that the Early Vermont came in about two weeks earlier, I took it up as a market gardener. When the Beauty of Hebron came in, however, I took it and discarded all the others. I cultivate them in drills, about two and a half feet apart.

Mr. Beall.—My land is not suited for potato growing, but last year I got a pound of Corliss' Matchless, and the result weighed 47 pounds. I cut them in single eyes and put two cuts in a hill. For my own use I cannot find anything to equal the Dempsey.

Mr. Butterfield.—After some experience I have found the Early Rose to deteriorate so much that I have discarded it altogether. It has the appearance after being cooked of a warmed up potato. For an early potato I like the Alpha. We liked the White Elephant very much for yielding and table use. I have also tried the St. Patrick, and believe it to be good. The Peach Blow which used to be a great favourite has failed with me. There is one point about the White Elephant that I like. It yields largely, and the bugs did not seem to injure it the same as other varieties.

Mr. Wright.—The Peach Blow was certainly the poorest yielder I had. The reason that I succeeded so well with the Early Rose was no doubt because my soil was so new, and contains so much ashes. In case any of you have very little seed, if you take the potatoes and cut the eyes into three pieces each and plant those eyes one foot apart you will have a first-rate crop. One-third of an eye will grow a first-rate crop.

Mr. Smith.—I have grown the Dempsey, and this year I grew the Corliss Matchless. I liked that very well. It is a good yielder and a good early and late potato. A year ago last fall I was at Thedford, and a basket of seedlings was brought in. I forget the name of them. I took home a peck and planted them, and they have pleased me better than anything I have ever planted in the potato line. It is a bright red, and a little flatter than the Early Rose, and the eye not quite as deep.

Mr. Hilborn (of Arkona).—I have not heard anything of that variety. I have planted three new varieties to test them, Vick's Extra Early, Early Mayflower and Early Sunrise. The Mayflower and Sunrise ripened about the same time, which was a week earlier than the Early Rose. Vick's Extra Early ripened about three weeks before the Early Rose. It is profitable for the early market. The most profitable variety we had was the White Elephant.

Mr. Croil (of Aultsville).—I have grown the Beauty of Hebron, and it is quite a favourite. The greatest yield I ever had was from the White Star. I cut one potato into single eyes and got 37 lbs. The Beauty of Hebron is a better yielder, better flavoured, and earlier than the Early Rose. I cut my potatoes into single eyes. My men say I cannot get anything from these single eyes, and if I were to cut each eye into three pieces, I am afraid they would put me out of the field. We do not get a thousand bushels to the acre. Last year we planted four acres in poor condition, and we had 600 bushels of Beauty of Hebron—and that is better than any common potato would have done under the circumstances. It was not a large crop, but for land in a poor state it was a good crop. The Dempsey we still think a great deal of; but for our own use we take the Beauty of Hebron. We cultivate in the field in drills and plant our potatoes by dropping the eyes ten inches apart and covering with the plow. We never put a hoe in them last year.

Mr. BEALL (Lindsay).—I know of one place in our county where the old Irish Cups are grown, and I am told they are the most profitable that can be cultivated, as they bring double price.

Mr. McD. ALLEN (Goderich).—As far as our section is concerned the Beauty of Hebron and Early Rose are preferred. I have heard shippers say that in Montreal they want the Rose or some potato like it. They also say that there is more money in the Rose than any other. The Late Rose is preferred, and the Beauty of Hebron and Dempsey are very much liked. The White Elephant is considered too large, although it is a fine grower and cropper. The St. Patrick has also been spoken of.

Mr. Wilson (Chatham).—I might say that in Kent some of the land is clay and some loam. Mine is loam, and I find that by making rows three feet apart with the plow and cutting the potatoes small and planting fifteen inches apart, they do well. The Early Rose sells best. I had bad luck with the Dempsey, but consider it a very fine potato. I am surprised to hear about the Garnet Chilli. We discarded that fifteen years ago as too large and rank.

Mr. McD. ALLEN.—With regard to cultivation a good deal has been said concerning drill and hill and flat systems. My experience after testing is this:—That upon the average the drill and hill system succeeds best; but in a season when there is not too much rainfall, and your land is on the light side and thoroughly sub-soiled, you can get a larger crop on the flat system. On the general run of seasons and soil, however, the drill and hill system is superior.

Mr. PARKER (Woodstock).—I have adopted a plan during the last few years of getting early potatoes in this way:—About the end of February or beginning of March I set a few in boxes so that they may sprout two inches, and then I take and cut them in one or two eyes to a set and plant them carefully. By this means I have been able to get potatoes from two to three weeks in advance of those which have not sprouted.

THE CAULIFLOWER.

Mr. McBROOM.—The varieties that are most valued here are the Extra Early Erfurt and Henderson's Snowball. You can depend on these for a crop; but even in these varieties you want the best stocks. There are different qualities of stocks of these sorts. The best Erfurt seed will cost from twelve to fifteen shillings per ounce; so that when you buy cauliflower seed at ten cents a package you can set it down that you haven't got the Erfurt or that it is a very poor quality. The best quality cannot be sold at less than fifty cents per paper. If planting, either for market or private use, I would not plant any other. Another thing I would advise is to have your seed in advance. The seed you intend to plant next year should be grown this year, and then you can know a year ahead what kind of a crop to expect. It is by this means many gardeners get good crops. The most successful grower near here is Mr. Abel Steele of Lobo. He brings the finest cauliflowers and cabbages to the market. He has peculiar advantages. He has a low, swampy place that is drained, I believe, but it is black muck for several feet in depth, and seemingly inexhaustible. Every year he has a fine crop. The great secret of success is to have rich soil and abundance of water. This place of Mr. Steele's has a cool bottom, and there is a cool moisture always coming up. Others who might get the same seed and plant it on light, sandy soil with gravelly bottom, would have very indifferent cauliflowers. They grow in Germany on ridges divided by ditches. These ditches are filled with water and every dry day it is baled out and the plants watered freely. Their cauliflowers are noted the world over for size and quality. Rich soil and abundance of water is the secret of success.

Mr. BUCKE.—Do you plant in cold frames or in hot-beds?

Mr. McBROOM.—In cold frames plants are thus much healthier and better able to stand. By using a great deal of care with a hot-bed and attending to the ventilation you can get good plants, but it requires far more attention to prevent "damping out." I use a glass frame. I think most of them sow seed here about the beginning of April in cold frames. I do not know where the Hendersons get their seed, but the stocks of Hendersons' Snowball are very good. I am doubtful if it is grown in the United States. The

German Erfurt, if you can get it, is the best; and if you can get the best quality of Extra Early Dwarf you are sure to have a good cauliflower. As to the cabbage worm, it is hard to give a cure. I have understood that Pyrethrum is effective. I have also heard that some use hot water just less than boiling. In giving this experience it is not so much my own as that of market gardeners with whom I have come in contact.

Mr. MITCHELL.—Is this powder dangerous!

The PRESIDENT.—It is harmless?

Mr. CAMPBELL.—When I commenced to grow cauliflowers the varieties I used were Early Paris, and for a late variety Le Norman. Lately, however, I have been using the Erfurt, and later still the New Erfurt. I generally sow the seed in a hot-bed, and whenever the plants are strong enough I pick them out and put them in a cold frame. They require plenty of room and very rich soil. The best garden, in fact, is a dung hill.

Mr. GOLDIE.—Has any one ever started them in the fall in cold frames and kept them over through the winter. In New York the gardeners have done that, but, of course, they have a milder climate. I doubt if that can be done here, but should like to know if it has been tried.

Mr. MITCHELL.—I was down to Mr. Murdock's and he said he had both cabbage and cauliflowers growing in cold frames out doors.

Mr. BUCKE.—I have seen cabbage grown under frames all winter, but I do not think it is altogether a success. A great many plants are lost, but those that get through are earlier.

A BRANCH ASSOCIATION.

The PRESIDENT.—Before going further, I would like to say that we have two gentlemen with us, representing the Fruit Growers' Association of Brant and Norwich, and we should like to hear from Messers. Mott and Cornwall about their Association.

Mr. MOTT (of Norwich).—This Society was started for the purpose of giving us a better insight into small fruit growing, and to assist us in marketing our produce. We started with about twenty members and now have about fifty. This season our meeting was quite successful. Mr. Saunders was with us and we had the best meeting of any yet held. Our discussions were confined entirely to small fruits, in keeping with our name, "Small Fruit Growers' Association of Oxford and Brant." The members were all interested in the strawberry and raspberry culture for market, and our object was to assist each other in not only getting the best fruits, but in improving the modes of cultivation. I think we have been of great assistance to each other, and I also think it has been a good move to affiliate with this Association. The Ontario Society gives us the privileges of membership for eighty cents, and twenty cents pays the local expenses. Our chief markets are Brantford, Stratford and London.

The PRESIDENT.—I was pleased with my visit to that Association. I found quite a number of gentlemen very enthusiastic in small fruit culture, and it seemed to me they were doing a good work among themselves in imparting such practical information as they had found valuable in their own experiences. One of the objects of our Association is to encourage the formation of these local organizations as much as possible, so that while conferring special benefits in their respective localities, they would also be able to avail themselves of whatever a Provincial Association can give in the way of information on a larger scale, and in publishing the result of their experience in our horticultural paper. Our editor is always glad to receive any items of information of this sort.

THE GOOSEBERRY.

A paper read before the winter meeting of the Fruit Growers' Association of Ontario, at London, January 29, 1885. By P. E. Bucke, of Ottawa.

MR. PRESIDENT.—I am exceedingly glad the gooseberry, which I look upon as a much neglected fruit, has received so prominent a place on the programme of this meeting. I regret this Association has done so little to put into vigour this fruit, which

deservedly holds so high a place in the gardens and markets of Europe. I venture to say no plant on earth can equal it in productiveness, few berries bring a higher price in any market where it is well known, none give such satisfaction for home use, and few are as popular with the cook, who by canning them can turn them into pies and tarts, and have them on the table three hundred and sixty-five days in the year, and an additional day in leap year. Who, in the days of his early youth, does not remember the gooseberry fool, which even in manhood we look forward to every spring as we watch the juvenile berries fattening under every green leaf? The rich, sharp acid of this fruit, when well under control of sugar, strikes a spot in the human system which makes the most cantankerous of us as playful as kittens, and adds a new pleasure to life. Of its health-giving qualities I need not speak; they have been fully recognized by the medical profession.

I might be allowed to add a word as to the best mode of canning fruits, tomatoes, etc. My friends are beginning to throw away the glass tops, rubber rings, and all these sort of things as useless appendages to the best success in the canning art.

The fruit is heated in the ordinary way, but instead of the glass top, etc., a good, close, not over thick, brown wrapping paper is cut into squares of suitable size and soaked in a bowl of thin flour paste kept warm. Two thicknesses of this paper are applied to each jar; these are pressed with the hand over the top and around the neck of the bottle; this soon becomes dry owing to the heat of the contents, and the top is as tight as a well tuned drum head. So air-tight is the paper, and so closely does it adhere to the jar, that the contents will keep for years, provided the rats and mice can be kept from eating off the paper, which they do for the sake of the paste. Of course, when the bottles are opened, the fruit must be used, as it will only keep a day or two. Mustard jars or any others will do quite as well as glass.

In turning to the September (1878) number of the *Horticulturist*, I find the question is asked by our practical editor, "Are we entering on a new era in the gooseberry?" This question was asked seven years ago. If we are, we are doing so very slowly. He (the editor) says some very fine specimens of gooseberries were exhibited by Mr. C. Scott, of Orangeville; these were larger than the Downing's, or Smith's, and appear to have been raised from seeds sent from England; Mr. Scott had grown these plants for ten years and saw no sign of mildew on them; they were then growing on a sandy loam soil, and were quite hardy and productive. Mr. W. H. Read, of Dalhousie, also exhibited a seedling double the size of Downing, which appeared to be "extremely productive and free from mildew." E. P. Roe, of Cornwall, on the Hudson, is spoken of in the same article as having two varieties, one red, the other green, named Roe's Early Ruby, and Roe's Late Emerald, but so far I have heard nothing further of them. I regret to say I have hunted the volumes of the Michigan State reports for some years back, and am somewhat surprised that our energetic neighbours have done nothing apparently in originating or bringing forward anything new in the gooseberry line. Nothing newer than Downing's and Smith's being mentioned. In Canada we are doing somewhat better, though, considering the rapidity of the age, I must say our conduct is somewhat slow. Mr. Saunders, our eminent and esteemed President, has produced a gooseberry which he names the "Pearl." The habit of the bush is similar to the Downing, the fruit is about the same size but more oval, when ripe it is of a clear white colour, and is as productive as the Houghton. Mr. A. M. Smith, of St. Catharines, who has been favoured with some plants from the originator, informs me he is going to propagate it. I have seen the plants on Mr. Smith's grounds, the growth is thick and stocky and quite upright. No mildew has so far shown itself on this variety. I would gladly see it more widely tested. I obtained some cuttings two years ago, but they failed to grow.

I have no doubt many of you have heard of Mr. James Dougall, of Windsor, Ont., the veteran hybridizer and propagator of new fruits and flowers, etc. Some years ago he turned his attention to the gooseberry, and what with cross-fertilizing and raising seedlings, produced some remarkable results. A number of his new varieties were pictured in the *Rural New Yorker*, of 19th January, 1884; one of these was an exceedingly ornamental shrub, and bears fair though not first quality fruit, said, however, to be quite saleable at more remunerative prices than the Houghton. No. 10 is a seedling from

the Houghton ; the bush is an upright grower, fruit smooth, of pale whitish green colour, large and solid, is of excellent flavour, and keeps some time after ripe, a very heavy bearer; the *Rural* says, "decidedly the best market berry yet raised;" owing to its meaty, solid flesh it makes a richer and better preserve than any other. This No. 10 Mr. Dougall has sold the right of propagation of to Messrs. Albertson & Hobbs, of Bridgeport, Ill., who have named it "Dougall's Favourite." Five of the others, including the weeping variety, he sold to John S. Collins, Moorestown, New Jersey. These were all parted with at very remunerative prices. It is certainly a pity that so many valuable plants raised by the energy and ability of Canadians should have to find a market in a foreign country. Mr. Charles Arnold and others have the same story to relate. Mr. Dougall has over a thousand seedlings now coming on ; many of them will begin bearing this year (1885), from which he expects some first-class results. It would, perhaps, be tedious to go through all Mr. Dougall's numbers, but he makes special mention of 13, 14, 15 and 17, all of which have their special excellence; these are all crossed with the Hybrid Wild and English Whitesmith ; they are not so large as the English parent, but of finer size than Downing or Smith's. Mr. Dougall speaks as if annoyed at the neglect of Canadian growers and Canadian nurserymen, but it must be borne in mind that in Canada, when a new thing is advertised, the audience is much more limited than in the United States, and again, "a prophet is not without honour except in his own country."

Whether we, as Canadians, benefit by Mr. Dougall's new fruits or not, we cannot but thank him for his great efforts, both in his garden and in the press, in raising new and useful fruits and disseminating valuable information about their habits and growth.

To show what may be done by any individual having a little patience, I will relate a little of my own experience. Some years ago I planted a Whitesmith and a Houghton so close together that the branches interlocked. I gathered some of the finest berries from the Houghton, and having rubbed them in dry sand to separate the seed, I sowed them in a bottomless box in the garden. I was rewarded next spring by a nice little crop of seedlings. I pulled up any that did not come up to my idea of leaf or growth, reserving about one dozen plants ; when these came into bearing I destroyed all but one ; this is a fine bearer, and has a large berry. Last year I set out a number of layers from the parent, and think I have a good thing in gooseberries. The fruit is larger than Downing's or Smith's, of an oval shape and quite smooth ; it has never ripened yet ; having only one bush the berries have been all pulled for canning. I call it the "Ottawa," and if on further trial it sustains its reputation, I will send it round to my friends for trial.

Last, but not least, comes a berry which I found in the possession of John Conn, Esq., J. P., of Kemptville, Ontario. This is decidedly the best goosberry of which I have any personal knowledge. On strict enquiry of Mr. Conn, he could give me no information as to its origin ; he thought it the Whitesmith. Having doubted this I obtained some berries from him last summer and compared them with Whitesmiths grown by a member of our Association in Ottawa, but there was scarcely any resemblance. It has the appearance of being some English variety, from its size, but bears much heavier crops than either Downing, or Smith's, and is nearly twice the size. Wood stocky and upright in growth. I immediately secured some thirty layers and set them out last autumn. These will not give any fruit of much consequence for two years, as layers should be set out for one or two years in nursery rows before they make good stock. Should this berry prove as free from mildew elsewhere as it has with Mr. Conn, it will certainly prove a most valuable acquisition to our fruit list. Failing any name for it, I have with Mr. Conn's consent called it "King Conn," and trust that name will be adopted until its true parentage is discovered. Mr. Conn informs me that all the American varieties he has grown (Houghton, Downing and Smith's) have mildewed more or less, but this one never.

I began this paper by saying the goosberry was one of the most productive of our small fruits, but there is nothing like figures to put matters of this kind beyond the region of doubt. The bushes can be very well cultivated at five by five feet apart, this would give 1,742 bushes to the acre. On turning to the Annual Report for 1873, page 184, at the Summer meeting of that year held at St. Catharines, 29th August, at which I

regret to say I was not present—Mr. Dempsey says, "A gentleman told me since I came here, that he sold his goosberries at twelve and a half cents a quart, and the trees produced half a bushel each." Now by a simple sum I find that 1,742 bushes giving sixteen quarts each—one-half bushel—at twelve and a half cents per quart, an acre would produce 27,872 quarts, amounting to $3,484. Mr. Croil says at the same meeting, page 185, "A gooseberry bush will not occupy more space than a cabbage," now, large, late cabbage are grown two by three feet apart, and it would take 7,260 plants to the acre; if early cabbage is referred to, then sixteen inches by two feet or 19,000 plants could be grown to the acre; at the first distance apart the product per acre would be $14,520; at the second the respectable sum of $38,000, would be realized. I think I hear the occupiers of the back benches whispering to each other, "boys let us quit work and go to raising gooseberries."

I fear, gentlemen, when we get together we are apt to draw the long bow. I have been led to make the above remarks on the alleged productiveness of the goosberry as a word of caution to speakers at these meetings, where, to use the language of the poet:

"A chiel's amang' ye takin' notes,
And faith he'll prent them."

My own experience on a limited scale is, that bushes when in full bearing, heavily manured, will give, if the sawfly larve is kept well under control during the whole season—from $400 to $500 per acre, if the net price realized after paying all expenses for picking, freight, etc., is ten cents per quart, and I must remind you that the above figures would mean an average price of twelve and a-half cents per quart.

The gooseberry is not propagated freely from cuttings; layering is the best plan for the multiplication of plants; this may be done in two ways, first, by pegging down the previous year's shoots, and covering them with soil, or second, by mounding up the bushes with rich earth in which the suckers readily take root. It is best to have a few special bushes for the propagation of plants, as a well pruned bush should have no suckers, but should have a clean stem for several inches above the ground, so that the soil can be stirred around it to keep it free from grass and weeds, and give opportunity for manuring freely, which should be done every year. One of the beauties of the goosberry is, it has no "off" year; if the bushes are properly attended to, they give steady and constant crops, and an ample reward for all the care bestowed on them. Many of the varieties do as well in shade as in the full blaze of sunlight, and consequently may be grown under trees or in places so shaded by buildings or fences that nothing else will grow.

Mr. Dempsey.—Mr. Bucke gives an instance of a gooseberry bush yielding half a bushel. There is no doubt that a man picked that quantity from a large gooseberry bush, not occupying more than five feet of space. The most unproductive plant is the black currant, and yet this year I saw two patent pailfuls taken from one bush; but you cannot from this calculate what would be produced per acre, for there is only one such bush in soil prepared for the roots of grapes mixed with bone dust and sods from the roadside. It is all made soil. While this proves what results can be produced, you must not calculate that black currants can be grown at that rate. I say this so that people may not be disappointed in their expectations.

Mr. Beall.—The figuring done by Mr. Bucke may be all right, but there is a wide difference between speaking of one bush and a whole acre. Still, the possibility is there. This last season I got more than half a bushel from three or four different plants; that is to say, I got more than half a bushel from each plant. I had twelve plants that brought me $1 each. I have some five hundred bushes, but all the others did not turn out like these. This particular variety is the Whitesmith. I say, with Mr. Bucke, that if it is possible for me to grow twelve bushes in a row, and produce $1 worth off each, there is nothing impossible about growing five acres or even one hundred acres with equal success. It is not likely that this will be done, however. I take it for granted that your figures are correct, but I grow my bushes further apart. If I could grow gooseberries without mildew I think it would be the most profitable crop I could grow. I got 12½ cents net for these I have mentioned, in the garden.

Mr. BUCKE.—I began cultivating the Houghton in Ottawa, and I am satisfied that at 15 cents a quart, which was the price I got, I can grow $1,000 worth on an acre.

HISTORY, MERITS AND MODES OF CULTURE OF THE GOOSEBERRY.

[BY B. GOTT, OF ARKONA.]

The name of this fruit has evidently come down from very early times, and is either a corruption from Grossberry, or *Krausbeere* of the Germans, in reference to its roughness of skin or its crispness of flesh, or it is indicative of an old practice said to have been in vogue amongst our forefathers of using this fruit in the shape of a sauce over their goose. However this may be, it has come down to us from generations, and by this name only we know the fruit and its rough thorny bushes. All gooseberries, however large, fine and beautiful, or of whatever shade or colour, have originally sprung from rough and thorny wild types, that are everywhere indigenous to the north temperate zone, and to both hemispheres. Those of our North American gardens have doubtless come either directly or indirectly through successive generations, and not very far removed from the wild type as *Ribes rotundifolium* or *R. gracilis*, both of which are everywhere plentifully distributed over the vast and diversified regions of our North American forests. Some again have been crossed with highly improved European sorts, but unfortunately for us, so far, from these crosses, no substantially good results have been produced, as our climate seems to be averse to anything of this kind. The gooseberry of Europe, and especially the gooseberry of England, is the consummate result of generations of high and careful culture. It is the product of the best and most skilful manipulation that can be brought to bear upon it, and, like the people themselves, distinctly bears upon it the marks of these generations of the highest and most accomplished breeding. In the English county of Lancashire, the very home and most favourable spot known for the gooseberry, its culture and perfect development has come in late years to be almost a mania, and is indulged in by all classes of the people. In that country their annual gooseberry shows or exhibitions are something astonishing for vastness, variety and grandeur. A gooseberry book is frequently issued, in which hundreds of old and new sorts are named and described. This kind of thing, however, can never become popular with us, as our conditions and environments are by no means favourable to the growth of this fruit in perfection. Although this may be, and is strictly true, yet we are highly delighted that we can in many favoured localities and situations produce many very fine sorts in comparative abundance. Our impression is most decidedly that yet more and greater things may be accomplished in this line. What desirable specimens of beautiful gooseberries may be propagated, by taking our wild sorts that are very plentifully scattered about us, with a few generations of reproduction and wise and careful selection, is at present utterly impossible for us to foretell.* Here is a great and inviting field of experiment open and encouragingly beckoning some of our energetic and painstaking culturists, upon whom the honoured mantles of an Arnold or a Saunders shall fall, to be taken up unsullied, and to be still further used and honoured.

As a fruit, the gooseberry has already gained for itself a name and a place in our national domestic economy, and a place, too, that can scarcely be filled by any other fruit. Coming, as it does, so early in the season when fruit of all kinds is quite scarce and hard to be got, it meets with a ready demand, and is quickly bought up when offered on the market. It is used on the table for pies, tarts, puddings, marmalades and jellies, and is either preserved or canned. It is generally picked from the bushes in its green state, or just at that point when ripening commences to enlarge and colour the fruit, as at that point it is said to be in the best condition. It is generally sold on the market by the quart, and will usually bring in our local markets from ten to fifteen cents per quart retail, and if the crop is good and has been well attended to, pays the grower very well. One acre of good soil planted to gooseberries will take in 2,725 plants, and these well grown and in a good state of production, will, even at a low calculation, pick two quarts on an average each; and this product, at the lowest price, will realize for the grower, a gross $545, which is unmistakably a very good showing per acre.

By this it will be seen that the gooseberry, as a product of our soil, is of some considerable importance to the fruit-growers of this country. It is usually propagated by cuttings, and by layering the young wood of the parent plants. For this purpose the best and most thrifty bushes are used, and the young wood is carefully pegged in the soil, tips out, and covered with earth and moss to encourage root growth. When roots are thoroughly formed the parts are taken off and separately planted in nursery rows to form independent plants. This is the best method of propagation. For the purpose of making cuttings the young wood is only used and cut up into pieces of about six inches in length, and kept safely from frost during the winter, and planted in the cutting beds in the spring to become well rooted, and afterwards removed to the nursery-rows as independent plants. This method is considered the fastest, and gives good satisfaction. But the only method of propagation to reach permanent improvement in the results, is that by means of the seeds. This method can be carried on almost without limit, and from generation to generation. To careful work in this method we are indebted for all those improved and very good varieties at present in our possession. After the young seedlings, as they are called, are once well established, and are known to have valuable qualities, they are propagated to any extent by the methods before specified. In this way we become possessors of valuable improved qualities in all our domestic fruits that we so much prize for our every day use.

Soils and Culture.

The soils best suited to successful gooseberry growing in this country have been found to be a thoroughly drained, rich and deeply worked clay loamy composition. These qualities of soil are imperative, as the plant is found to be very impatient either of excessive dryness or excessive heat. This is doubtless one of the chief causes why success with it is so very precarious in our conditions. If these conditions could be but slightly changed it might be the means of determining the difference between success and failure, a difference that is very important to the cultivator. In a soil of this character with a moderate amount of protection from dryness and heat, the success of gooseberry-growing from improved American Seedlings is assured. To secure these conditions location must be sought for and skilfully used. The young plants may be removed from the nursery rows when they are two years old, when they will be fine, strong, well-rooted plants, whose after-growth will make rapid progress and give good satisfaction. They may then be carefully planted in the ground, previously well and thoroughly prepared, and marked off in rows four feet apart, and the plants put four feet apart in the rows. This planning will give 2,725 plants to the acre, and will give great satisfaction to the workers and pickers, and if every plant is nicely growing in its place as it should be, it will make a very pretty plantation after the first year's growth. The ground must be kept scrupulously clean during the entire summer, and must be thoroughly pulverized and stirred by means of one-horse cultivator between the rows both ways, and not a weed allowed to be seen. The young bushes will make extraordinary growth of young, thrifty wood, and the set of fruit buds will be astonishing and will well repay all the labour and care that may be lavished upon them. In gooseberry-growing, as in every other kind of fruit-culture, if one would wish to reap the highest result, increasing vigilance and constant application must be most certainly and most freely given. The annual pruning will consist in shortening in the summer's growth to a moderate extent, and in some cases in thinning out some of the crowding shoots. However, this operation is generally and best done in the early summer, as the growth of wood and fruit buds on that which is left will be so much better and more encouraging to the grower. After the wood has borne fruit some three or four years and is becoming old and feeble, it may be cut entirely out and the young growth encouraged in its place. This operation is called renewing, and is very important in all pruning for fruitfulness. The question, how long will a gooseberry plantation last, is a very difficult one to answer satisfactorily, as circumstances and locations have so much to do in its determination. We have known them to still remain comparatively profitable after having been fruited for twenty or twenty-five years, and our opinion is that if everything about the location and soil is right they may be made to do good

service during that length of time. But we do not by any means advise this kind of thing, for we believe on the contrary that we get the best results from young and vigorous plants as in all other kinds of fruits, and for this reason we would advise changing the soil by a new plantation at least after every ten or twelve years' service. Young plants are now produced so successfully and so cheaply, and so many new sorts are yearly coming out that there is no economy in running a plantation after its prime is over.

Enemies

Unfortunately, the gooseberry, not unlike many other good things that has fallen to the lot of men, has many virulent enemies, and some of these are most determinate and destructive. They come in various forms, but all of them are deadly, and mean extirpation and ruination, unless active measures for defence are resolutely applied. The ordinary enemy forms, and those with which we are best acquainted, are insects, mildews and blights, and juvenile depredators, and these last very bad in the older countries of Europe. There are several voracious insects that prey upon the gooseberry and its fruit, but the most common ones, and those with which the people of this country are most familiar, are the gooseberry saw-fly, (*Nematus ventricosus*), and also the gooseberry fruit worm (*Pempelia grossularia*). The first of these insects is very troublesome, and is hatched from eggs laid by the parent fly on the under side of the young leaves early in May, and so numerous do these ravenous insects become that they will in a week or two entirely and completely defoliate an entire plantation if left unmolested. A timely application of white hellebore and Paris green will, however, completely stop their destructive ravages, and save the crop to the industrious grower. We are happy to be enabled to say for the encouragement of gooseberry-growers that this insect is not nearly so abundant or so destructive this last few seasons as formerly, and that a very slight attention will keep them so much in check that they will not be felt to be a plague. The latter insect mentioned was also a few years ago a very threatening scourge, but its evil effects are very much reduced, and its numbers very much less, and hopes are entertained that it may disappear from our gooseberry bushes altogether. It is originated from eggs laid on the young fruit while tender. After hatching, the insect soon eats its way to the inside of the berry, and totally devours the contents. When this is accomplished the insect immediately joins himself to another berry by means of silken cords, and enters it and devours its contents also, and so the work goes on until sometimes a single worm will destroy a half dozen berries in one group.

When these insidious little workers are multiplied by dozens their work is very perceptible, and a very severe loss upon the crop will be the result. We have found no remedy for the insects aside from hand-picking as soon as the first wilted berries are noticed. We are glad to say, however, that last year we noticed but very few of these insects on our fine crop, and were scarcely molested in the least, and the hopes are entertained that this evil also has passed us for quarters more congenial to its habits and its appetites. But the worst of all enemies to improved gooseberry-growing in this country, and those that have baffled our skilful and anxious cultivators the worst, have been mildew and blight. Not being very thoroughly posted on the nature and characters of mildews, I am not very well able to characterize these, to make the matter clear and instructive. It is found that when we attempt in our condition to grow improved English gooseberries in this country, a thick growth of vegetable mould or mildew will cover itself entirely over the young fruit and effectually stop its progress towards maturity. It, in fact, destroys the fruit and renders the bushes at once unprofitable and worthless. Another mildew or blight will attack the leaves and cover them, especially on the under side, with whitish growth which will destroy the leaves as by a blight, and it falls as useless from the bush.

We are of opinion that the cause of all these is atmospheric, and the remedies, of course, will be to forbear planting such varieties as are known to be liable to such parasitic growths. Happily for us it is found that new forms grown from seed of our native American wild gooseberries, are not liable to this mildew trouble. So we are provided with an all-sufficient supply, and our better part of wisdom consists in growing and

improving those seedlings until we have attained the high eminence which our brethren in England have reached through generations of successive culture reported from year to year. It is rather lamentable for us that we cannot fall back on and use those long and valuable experiences of theirs, and transplant their treasures and attainments successfully on our fertile soils. Instead of this, we must from necessity commence at the beginning and improve up for ourselves till we reach those excellencies that have marked their progress. The remaining enemies of the gooseberry, as our hot and scorching summer time, our drying atmosphere and juvenile depredators, though severe and dispiriting, yet are those that time and prudent management alone can ameliorate. Juveniles in older countries are the very plague of the gardener, and cause them much trouble and expense, but as yet our varieties are not sufficiently tempting to their nimble fingers, or luscious to their devouring appetites to allure their visits to our gooseberry plantations either daily or nightly. Whatever succeeding generations in this country may suffer in this respect, we are at present comparatively safe and unmolested.

Varieties.

The multitude of varieties, amounting to hundreds of gooseberries in the old countries, and all good, are so great that to attempt a selection for use is perfectly bewildering. Fortunately this is not by any means the case with us. Our varieties to select from are as yet limited to two or at the most three, with one or two to choose from for fancy purposes. The sorts that we have that are commendable to our attention are all American seedlings, that is direct from indigenous sorts, and not very far removed from the original wild type. Happily these prove to be very good and satisfactory to us, and so we scarcely ever look about us for anything better. A variety to be popular with us must be at once adapted to our climate and free from the attacks of mildew. It must be hardy in bush to withstand our severe and changeable climate; it must be a good grower and an abundant bearer, and the fruit must be good but not too large. All these very desirable points we have fully developed in high perfection in our popular gooseberry, Houghton's seedling. This very valuable variety has been in cultivation now for many years under almost all circumstances, and in almost all soils and conditions, and in no case has it been known to fail to give good satisfaction, and abundantly reward the careful and intelligent cultivator with a fine return of nice fruit for his pains. The bush is a good grower and very hardy, the leaf healthy and strong, though the wood is small and slender and well armed with a plentiful supply of strong spines. The fruit though small is very nice and of fine flavour, and of very suitable size for canning or preserving, and the quantity is something amazing, and the crop can be annually relied upon. This variety is at present more valuable to this country and more grown than all others combined, and is everywhere satisfactory. Smith's Improved: This is a considerable improvement upon Houghton's in point of size and beauty of berry, but unless the market is discriminating in regard to sorts it is not going to be more profitable than the old sort for the market grower. The wood is very hardy and good in growth, and somewhat stronger than Houghton's. The leaf is large and fine, and will resist the attacks of mildew. The fruit is somewhat larger than Houghton's, and is very attractive and quite smooth, and will be very serviceable to the country for kitchen or canning purposes. It has several good points, and as these are becoming more and more generally known they are gaining for it a rapidly increasing favour and causing it to be at present considerably called for by planters. We are very pleased with the improvement, as it marks a step forward. Downing's Seedling: This is perhaps the best variety of this class of fruit that has been tested amongst us and offered to the market. I can scarcely connect the relationship of this desirable berry with Mr. Downing, but it may possibly be a seedling of his or one named in honour of him by his friends. The bush is hardy and a very strong grower, and the wood is heavier and far stronger and more promising of value than any of the other sorts. The leaf is large, healthy and good, and, as far as we know, successfully resists the attacks of mildew, and the fruit is large, smooth and very beautiful. This very promising variety is growing more and more in popular favour, and at present is the best we have to choose from for amateur and fancy growing. These are all free, as far as we

are aware, of mildew and blight, and with these to rely upon no gooseberry lover need go on without a supply or even with a spare supply of this fine fruit for himself and family. American Seedling and Mountain Seedling are similar to Houghton's, and as far as we know are no improvement or even quite as good. There is no room for them amongst us. Hixon's Favourite and Cluster are not known amongst us, but nothing special is claimed for them. Hudson is a new and promising sort, and is going to spread. It is said to be a large, red and promising variety, and so some of you may laudably wish to possess and try it, for it is very clear that to improve we must keep trying. Industry is a new and lauded gooseberry being brought out by the firm of Ellwanger & Berry, New York. It is said to be a large, red, handsome berry, and many good points are claimed for it. This, too, you may wish to try, and if it is an improvement over what we already have in this line we shall hail it with delight. I believe our very highly esteemed President of this Association has by cross-fertilization succeeded in producing something new and desirable also in the gooseberry line. What these are or how many of them or what their special points or characters are, I am not sufficiently posted to definitely state. But, judging from the past and what we know he has so well done, I think we are sufficiently warranted in promising for ourselves something good to very good in this direction. May we not hope at an early day to hear something more of those seedlings from Mr. Saunders' own masterly description? The only English varieties that we know that will at all warrant us in trying to cultivate in this country are Mr. Woodward's Whitesmith and Mr. Milling's Crown Bob. These two fine old well-tried sorts have been transplanted and grown in our soils, and with fair and tolerable results. There is an English gentleman of our acquaintance residing at Thedford, Ont., who succeeds in raising annually large and handsome crops of clean, well-formed fruit of one of the old sorts. He manages to keep down all mildews, etc., by means of sulphur and salt about the bushes, and he has also succeeded in creating a desire amongst his neighbours to grow such gooseberries as those. This opened our eyes to this method of gooseberry growing, and we do not see why such examples should not be very much multiplied over the country. But I fear I have already skipped the bounds of my limitations, and have at least succeeded in wearying you out of all patience. I must, therefore, bring this interesting subject to a speedy termination, hoping as I do that some may be induced by means of these and similar feeble efforts to improve and enlarge upon our present stock of American gooseberries. If this very desirable result be gained, and through our feeble efforts the generations of the future have something better in these lines, we ought to consider ourselves amply repaid for all our labour and care. Let these considerations, indulged in good and honest hearts, be permitted to give us daily fresh energies in the very laudable efforts of fruit-growing and fruit improvements.

Mr. MORRIS.—I would like to refer to a remark made by Mr. Bucke, on Dougall's seedlings. I do not think there is a nurseryman in Canada, who would buy or undertake to propagate any gooseberry crossed with an English variety. They will in time mildew. That is so well known that I do not think they would be bought. I may instance Mr. Reed's seedling, which most of the members have seen. They showed up splendidly; but a year ago last summer they all mildewed, and that is true of all English plants in this country. This gooseberry called "Industry" is claimed to be one free from mildew, but Mr. Beall says it mildewed with him the first year he planted it, and I feel convinced that will be the case with all English plants or plants crossed with the English varieties.

Mr. BUCKE.—Has the Downing or Smith any English blood in them?

Mr. BEADLE.—I can answer for the Downing. He supposes it to be a seedling from the Houghton, and a chance improvement without any crossing.

Mr. GOLDIE.—Can you tell what the Houghton was derived from? Has it any English blood in it? I have seen it mildew as badly as any of the English varieties.

The PRESIDENT.—I think the facts show that our native varieties will admit of a certain amount of foreign blood, but that amount must be found out by experience. There seems to be something needed to add to the size and quality of native fruits, and that something can perhaps best be supplied by European fruit. It has been the case with our grapes, and I think it will be the case with our gooseberries. I am of opinion with Mr. Morris that any variety of English fruit will mildew, but I think we can lessen

that tendency by re-crossing so as to do away with the difficulty. That variety originated by myself I cannot speak positively about, but my impression is that it is a seedling of Downing. I have a number of fruits that are half foreign blood and some have mildewed to a certain extent, but nothing like the English varieties. They might be crossed again perhaps with good results. This is merely a matter of opinion, experiment will test the value of relative opinions in the long run.

Mr. BUCKE.—The reason they are crossing with English varieties is to get size and get it quickly. The cultivation of the gooseberry began in England about one hundred years ago. Their wild gooseberries are not as good as ours and you see to what perfection they have brought them. We can do the same here, but we want to get big gooseberries in a hurry, and therefore we bring in foreign blood.

Mr. BEALL.—I may say with regard to the Industry, that it mildewed badly, but I have not given up hopes. It occurred to me that the nature of the plant and the peculiar way it was sent to me might have favoured a disease of that kind. It grew very nicely until the shoots were six or eight inches long, and I commenced with sulphur, and it was a fair fight from that time forward. The mildew was on the foliage. I am hopeful that with cultivation I may make it strong enough to stand against that trouble. With regard to yield, in 1883 I had 300 plants. That was the first year mildew affected me; but I sold from these plants an average of 2,88 quarts, or twenty-seven bushels in all.

The SECRETARY.—I have found that the free application of salt has a good effect. Salt gathers moisture and that moisture is favourable to the prevention of mildew. A neighbour of mine used to spread the grass that he cut from his lawn under his gooseberry bushes. They were all English varieties without name, and he sprinkled salt very liberally over this withered grass and he thought he had discovered a way to prevent mildew; but after a few years he found that he had not prevented it altogether. I attribute it to the fact that salt will absorb moisture, and the exhalation from that is as near like the atmosphere of Great Britain as is possible in our climate. The free application of sulphur will check mildew if applied when it first appears.

Mr. HICKLING.—I have tried both salt and sulphur, and I think with good effect. I have for three years had no mildew whatever.

Mr. BEALL.—I may say that I have had the Whitesmith either fourteen or fifteen years. I have five or six of those that I got first and it was off those altogether that I got my half bushel each. I do not pretend to know anything about this mildew. On this particular row that I have spoken of I used salt most abundantly. If I were to state the quantity it would frighten Mr. Dempsey very much. The mildew is all on young plants to which I have never given salt. I hope I applied enough last year. All the old plants have had salt for the last ten or twelve years; but the new ones have never been salted until last year. I put two barrels on three hundred new bushes. If I had put that Industry among the mildewed ones it might have caught the disease; but I put it twelve rods away. With regard to the use of salt, I think one ought to be careful. Mr. Dempsey says he lost a great many through it. He says the salt was put on before the bud in the spring, and unless his soil is very different from mine I do not know how he lost them. The first thing that I do with my gooseberries as soon as the soil is ready to work, is to fork up, and then I put on my old rotten manure—all I can afford—and on that I put the salt, and allow it to remain there until the rain washes it in.

Mr. DEMPSEY.—I believe if the attention of such an intelligent class of people as members of the Fruit Growers' Association were given to the growing of gooseberries, wonders would be accomplished. While Mr. Morris was speaking of foreign blood my mind was drawn back to the improvement of the pear, and how it was accomplished by Van Mons, of Belgium. He was a pioneer in that direction, and in reading his theories I was interested. You who are posted will know that he always planted a seedling pear tree first, and the first pear he got he took and planted the seed of that, and in about three generations he reached a climax that he thought could not be surpassed. After that they degenerated. We must first cross varieties, and then we can go on selecting for several generations. On any plant most of you have observed that there is one side of the bush bears better fruit than the other. I don't know why it is so. We find by propagating from that side of the bush we almost always get different fruit. The variety

seems changed in its constitution, just by propagating in that way. If we select seeds from the berries that are produced on the most prolific branches, generally we find we get a more prolific plant, and a plant that will produce larger berries and more of them. On the other hand, if we select the berries produced on our barren branches that only produce two or three berries, the result is a not very prolific plant. We fancy we can improve our gooseberries just as the stock-breeder does his stock, or poultry-fancier does his poultry, or bee-keeper his bees. Let us only understand what we are working for.

Mr. CROIL.—Mr. Beall has been very successful with gooseberries. I would like to ask him if he finds that his bushes grow better when sheltered in the orchard than in the clearings?

Mr. BEALL.—The three hundred I spoke of are growing in the orchard in rows between the trees. The trees are large enough to average a couple of barrels of apples each. Before I underdrained I lost a good many trees and the orchard is not even. It makes no difference about them being sheltered, they mildew; but in the old stock down in the garden there is no mildew. The soil is the same in each case, but those in the garden have been heavily treated with salt while those in the orchard have only had a little.

Mr. MORRIS.—The best way to apply salt is to soak grass in a salt solution. It gives off a moisture and there is not that injurious effect on the plant.

The Association then adjourned until two o'clock.

At the afternoon session the question drawer was opened; the following matters were dealt with:

BEST TIME TO PRUNE APPLE TREES.

"What is the best time to prune apple trees?"

Mr. MACD. ALLEN.—The best time to prune apple trees is to begin right after you have planted them, and prune them with the thumb and finger. But you must use judgment in respect to the size you want the top to grow. There is no chance of injuring the tree. Take an older tree which has formed a top, and the month of March is recognized as the best time. If you take away aged limbs, the wounds should be protected. You must use judgment as to what kind of tree it is, whether spreading or upright growing.

PRUNING IN FROSTY WEATHER.

"Is it injurious to prune in frosty weather as at present?"

The PRESIDENT.—That question has been answered. It is not advisable to prune in such severe weather as we have just now.

Mr. MACD. ALLEN.—I don't think a man would stay long at the work just now.

THE APPLE GRUB.

"At what stage is the egg deposited that produces the grub in the apple? Is there any remedy?"

The SECRETARY.—The codlin moth is no doubt what is meant.

The PRESIDENT.—That matter has been pretty fully discussed. There are remedies for the codlin moth. One is to syringe the trees with Paris green in water, the mixture having the proportion of one teaspoonful of Paris green to a patent pailful of water. This mixture should be kept agitated and used through a very fine syringe that will throw a spray; and the application should be made while the apples are young and upright before they have begun to hang down. You must do it at that time because the eggs are laid in the blossom end of the apple, and the spray in descending on these ends will accomplish its mission. Another method is to tie bands of hay or cotton or old rags around the tree, and these will form a harbour for the grubs to change to chrysalids in. They will seek such a place, and by untying the band once every week and killing all the grubs and chrysalids you get rid of a large proportion of insects during the season. The Paris green remedy seems to be most thorough, and effectual and immediate in its effects.

APPLE SPOTS.

"What is the spot on the apple? Is it a disease in the tree communicated to the fruit, or is it produced by noxious gases in the air?"

The SECRETARY.—I do not know. My impression is that it is not any disease of the tree. My impression is that it is a fungus growing on the skin of the apple. It is a pretty strong impression. I do not know that the gases in the air have anything to do with this growth. If we could cover the tree with something and burn sulphur underneath, we would kill the leaves, the fungus and the apple. The application of sulphur was tried by Mr. Croil, by sprinkling, but without favourable results.

The SECRETARY.—Another thing tried was carbolic acid.

Mr. CORNWALL.—I tried sulphur and water. One application was made when the apple was about the size of a cherry and another about two weeks after. I mixed about a pound of sulphur in ten gallons of water and sprayed the trees; but I found no benefit from it.

The SECRETARY.—I am inclined to believe that if we keep at it we will find some way of checking this fungus on the apple. There are certain seasons when it is worse than others, thereby showing that there are conditions of growth which are favourable and conditions that are not favourable. The result of these spots is to ruin the fruit for market purposes. As yet I do not know of anything that has proved to be either a remedy or a preventive.

THE QUINCE.

"Can the quince be profitably grown in this section; and what are the best varieties?"

The SECRETARY.—In the Niagara district the quince thrives very well on a clay soil; and it is all the better if it is freely supplied with salt. As to the profitableness, I am unable to answer, as I only grow for my own use. The quince tree bears abundantly. Sometimes they are affected by what we call the blight, and this would affect the profit. Then again I do not know what the market is for quinces. Those that are brought there do not seem to have a remarkably ready sale; but what would be the case in London, Toronto or Hamilton, I cannot say. All through this section of the country where the peach will flourish, the quince can be grown.

Mr. CORNWALL.—What varieties do best?

The SECRETARY.—The Orange Quince. We also have Rea's Mammoth and Champion, but my impression is that Rea's Mammoth is a shy bearer, and the Champion will be cut by the winter. The Orange Quince is all you can ask. If the plants are fed you will have good sized fruit.

THE DUTY ON TREES.

"Is the duty now placed on trees acting beneficially on the horticultural interests of the community?"

Mr. MACD. ALLEN.—My own idea is this:—I do not believe in it. I would prefer to see different commercial relations, and should like to get hold of anything from the other side as freely as I can from this. I think we are able to compete with anything. That the duty is a positive injury I should not like to say.

The PRESIDENT.—At the time this Association recommended the Government to adopt this policy, the duty on nursery materials coming from the United States was comparatively small, while on the other side it was very heavy. This was done to equalize matters. The conditions are changed now; the American duty has been removed, and we still retain the duty here. If, however, it is for the benefit of horticultural interests in general we should not be hasty in expressing views which would seem to be against it. I think it has had this one effect, of helping to establish among us a class of nurseries carrying very large stocks, knowing they would have the Canadian market to themselves. We should not have them if this duty did not exist.

Mr. WELLINGTON.—I certainly am an interested party, but aside from politics I want the duty on nursery stock to remain as it is. My political leanings have always been toward the other party, but at the same time, along with a great many other Reformers, I have supported the present Government in their policy and shall continue to do so. Of course it may be said that I look at it from a personal point of view, but outside of that I consider that any industry established in this country is a benefit to the country. While we are all at our own businesses to make money, the amount of business we do in a country materially assists the prosperity of that country, and the duty as it now stands on nursery stock, to my mind, simply acts as a check against the culled stock, which in former years was so largely shipped to Canada. "Canada Stock" used to be a common word among American nurserymen, which meant that it was stock that could not be sold there. In changing from an *ad valorem* to a specific duty on certain kinds of trees, I consider that they struck a heavy blow at this class of stock. Take apple trees for instance, on which there was formerly twenty per cent. If they were culls they got in very lightly. Now, with a specific duty they would have to pay as much as the high grades, and there is not the same temptation to ship this class of goods. As far as I am concerned I certainly object to any repeal of the duty on Canadian nursery stock. We are a young country yet, and if the nursery business is to be encouraged we must have protection. We have already invested double the amount of money in it that would have been so placed had there not been this duty.

The PRESIDENT.—I think the sentiment of the meeting is that we had better not endeavour to disturb existing relations as matters now stand.

FORESTRY.

Mr. R. W. PHIPPS, Forest Conservator of Ontario, delivered the following address:

I am glad to meet this assemblage this afternoon. I have heard from your worthy President, whose success as a tree grower and as a fruit grower we are all so proud of, that you would care to hear me for half an hour on the subject of Canadian forestry—forestry as we find it necessary in Ontario. It is a subject intimately connected with fruit growing, and I cannot better illustrate that than by pointing out what has been said by the leading authority on we may say trees and fruit, to a certain extent, in the United States, that is Prof. Sargeant. He tells us that in Massachusetts they formerly grew excellent peaches, but since it has been largely deforested they cannot do so. They are now dependent on Delaware. And even in places where they formerly grew well they cannot now grow but small quantities, owing to the same fault, that they have cut down too many of their trees. Now this afternoon, if you will follow me for half an hour, I propose to say in a few words what follies we labour under here, and the means we propose to take to limit them so far as forestry is concerned. As you are aware, when the white man came to this country it was covered with magnificent forests. I can remember, myself, the forest approaching Toronto, when it was said if you threw a stone it fell into a forest reaching to Quebec on the right and to Sarnia on the left. You might then have travelled that far without going out of the woods. I have no hesitation in saying that if it had been possible to have kept that enormous amount of timber, and sold it at present prices, we could have built half a dozen Pacific Railways without taxing ourselves at all. But that was found impossible. The settlers of that day wanted food and they could not eat the trees, neither could they sell them. They had to be cleared away, and, I regret to say, that at that time land was cleared which had been far better left in its native state. I have seen on the sandy land near Toronto great piles of pine timber burned in heaps that would now be worth $40 per thousand feet. I have watched that land since, and know that it only grew two or three inferior crops, and stands as very poor pasture to-day. I have been out west where a couple of thousand dollars have been paid for the remnants of black walnut trees that would have been worth one hundred thousand dollars if left until now. In Canada we have gone so far that in some sections our woods are down to ten per cent. of our cleared land. We have one acre in forest and nearly ten acres cleared; and even that proportion is not likely to continue. The patches that remain are being destroyed

by various means, or cut down. How to remedy this evil is the question. The greatness of this evil, which we will consider, is set down in three branches. The loss of the forest deprives us of shelter. As you may know, throughout many portions of the country we cannot grow fall wheat nor clover, owing to the winter killing it. The snow is blown off the ground. Then again, where the forest is cleared away to any great extent, we lose the benefit of certain climatic influences which regulate the supply of moisture. Let me illustrate this point by facts which have come under my own observation. When our farms were cut out of the original forest we have grown our forty or fifty, and I have grown sixty, bushels of fine Soule's wheat to the acre. Then as the neighbouring and protecting forests have been removed the result has changed. Thirty years from that time and the same land will not grow anything near the same crop; nor will the land in that vicinity yield the same crops with the same handling as when the forest was around it with its fertilizing influences. Now, if we go into the philosophy of this, we may light on some interesting facts. Let us consider what this great growth we call a tree really is. In the first place, the tree takes in its nourishment from the roots, and this food is carried up by water as a vehicle. It is distributed through the branches to the leaves, where the same function is performed by the leaves as the lungs do for our bodies, and in this action and during exposure to the air, a vast quantity of water is thrown off in evaporation. The real nourishment is retained in the trees and goes to the parts where it is needed, while the water is thrown off. This point I wish to impress upon you, that every tree, during the leaf-bearing time, is carrying up and sending off vast quantities of water. It has been estimated that in this way a large oak distributes four hundred gallons of water daily. Whether this amount be correct or not, we all agree that the quantity is very large. This moisture is cool, and is given off in such a quantity that it has been said if we could colour these vaporous exhalations so that they could be seen, the forest below would seem small in comparison with the immense columns of vapour rising above it. This cool moisture then passes into the air, and meeting with warmer and equally saturated atmosphere, precipitation is produced and rain follows, either close at hand or in some neighbourhood adjacent, according to the direction of the wind. That is one method by which the trees of the forest do their share in producing the great local cause of rain falls. It has been well said that we cannot say for a certainty that a forested country always yields a greater rainfall than one which is cleared; but what is certain is, that a forested country always sends down the showers in spring and summer when they are needed, in that fertilizing and refreshing manner so beneficial to the crops and fields adjacent. It is also certain that where the country is disforested, the rain falls in heavy torrents and is washed all over the surface of the ground. To make this matter certain as regards Ontario, I had lately about three hundred different correspondents all over the country, men who have lived in the Province for long periods, and all agreed that this was the case. Here and there was one who had not noticed it, but those who had extended their observations minutely agreed that they had found what I have stated to be true in their localities. Everyone agreed that the disforesting of our country has taken away the moisture from the surface of the earth. Those who say they formerly obtained water by digging six or eight feet, must now dig thirty or forty feet or more in the same places. The reason of that is, the forest is a reservoir for water. Its base is composed of decaying branches and leaves; of roots penetrating into the earth and forming a great porous mass out of which the rain or dew does not pass. That great body of moisture feeds springs and rivulets all around, and keeps water near the surface of the earth. These two things, the certainty of the rainfalls and the preservation of the moisture in the ground, are the great matters in which the forests are found to benefit the climate; and it is the loss of this, in a country which has unfortunately lost its forests, that deteriorates the climate. We have instances of this. We have not, I am glad to say, gone sufficiently far to experience it in its worst phase, but we have instances of it all over Europe and Asia Minor, in Palestine, Asia, France, Germany, and many other countries, wherever they have disforested, the fertility of the soil has ceased, the ground has been washed by heavy torrents, and places once fertile are now barren. It is a remarkable fact that the knowledge of this fact assisted very much in making Germany the prominent nation it now is. Two hundred years ago much of that country was barren. The Monarch of that period—the

Great Frederick—saw this loss of fertility ; his Prime Minister saw it, and a new state of affairs was inaugurated. Forests were planted in every direction, and the effect on the fertility of the soil has been such that where one man could not be brought into the army two hundred years ago, a whole regiment was drawn for the last war. That gave the foundation which actually raised the edifice of what was Prussia, but what is now the German empire. Now, in Ontario, we wish if possible to avoid deterioration of that sort. We have not yet arrived at it, but we see the premonition. It is now that we should commence to do something, for the growing of the tree is a slow process, and it would be a serious mistake to delay ten years beyond the time we should begin. I will suggest to you the processes by which it is most advisable, according to the opinion of a great many men who have inquired into this subject, to move in the matter.

The first is the encouragement of wind breaks around farms. This should be done on the north and west sides generally, but you should always be guided by the nature of the locality and the points at which shelter is needed. Wind breaks are easily grown. I have seen many excellent specimens, and we have many trees that answer the purpose very well. There is first the kind most frequently used—our own maple. Then there is the Norway maple, our own pine, the Scotch larches, and cedar—all these I have seen make excellent wind breaks. I had reason some time ago to obtain information from about seventy-five sources throughout the country, regarding these wind breaks, and the invariable verdict was, that they were a great benefit both to the field, orchard, and general fertility of the whole neighbourhood. Wherever a farmer had properly used the advantages of a wind break, it actually gave his farm a new climate, He could grow wheat in such a manner as to increase his crop far beyond that which could be raised where this simple precaution had not been taken. That is one direction in which we should press our efforts, and if we can induce farmers and land owners to attempt plantations, and give five or ten acres to the planting of trees, I am in a position to state, owing to knowledge obtained from wood workers, that if the right varieties are planted—such as white oak, hickory, white ash, elm—the ten acres so laid out will at the end of ten years be as valuable as fifty acres on any other part of the farm. That is to say, with the present scarcity of these woods, and the probable scarcity at the end of that time, a farmer would not take less for the probability of these ten acres than the probability of fifty acres otherwise in use. I will give you an instance covering this point of an actual case reported to me through Mr. Blue, of the Bureau of Statistics. He directed me to Mr. Culbertson, who had planted a grove of black walnut trees in Douglas County, Illinois, and that gentleman said :—"I have every reason to believe that in ten years those ten acres will be more valuable than the remaining 237 of my farm, and it is not a poor one."

Now, with regard to the value of timber, I have placed myself in communication with, or visited the establishments of, a great many wood-workers in Ontario and Quebec, and the general verdict is that, in the matter of basswood, it is so extremly scarce that they are now using swamp elm instead. In the matter of white oak, it is largely gone, and it is only with great difficulty they can get any. Black walnut is altogether gone, and what little is used comes from Indiana, while black elm and oak are so scarce that iron is being substituted. These men give me the foundation for my expected values at the end of ten years, and I have taken the greatest care to get these statistics from the most reliable sources, and the facts can be proven by a large number of witnesses.

The third matter we should press upon farmers as being a valuable means towards preventing the disforesting of our country is this: all through our country there are yet portions of forests. One man will have twenty acres, another forty, another one hundred, and I have known some with even two hundred. If we could only persuade these gentlemen to abandon the practice of allowing their cattle to range through the woods, and to fence off only such a portion as was really necessary for shade, we should then have portions of forests that would be likely to endure as long as we chose to have them. When you allow cattle to enter a forest, they kill the young trees, which are the only hope of reproduction. When the young trees are gone, there is nothing left to replace the old ones. There is another fact in connection with this, not generally known. It does more than stop the hope of reproduction. It allows the wind to enter freely, and many trees are blown down which would otherwise remain firm. Another reason is, that

when you allow the sun to beat on the bark and exposed roots it has a drying and deteriorating influence, and greatly injures the tree. I have visited places where, on one side of a fence, there would be a forest in a good reproductive condition. There would be plenty of young trees growing up. There would be medium sized trees and plenty of older ones, vigorous and strong, and ready for the axe. On the other side of the fence a different condition of things existed. The undergrowth was gone, the cattle having taken it. The earth was dry, and the trees did not have the healthy look of those in a preserved forest. This I noticed in twenty different places, and all my correspondents bear me out as to the facts. If, then, we can induce farmers throughout the country to fence off a portion for the cattle and keep the other in bush, that portion will remain in good order, continually reproducing itself, and the young trees will shield the forest and preserve it in perpetual life. Such a forest is of great value to a farmer, and what he might seem to gain by getting the use of the land, is far more than counterbalanced by the great loss in timber and the fertility of the adjacent ground.

I have pointed out the methods by which this disforesting can be prevented. I am sure, in speaking to this audience, I speak to men who frequently have the opportunity of pressing on their neighbours the kind of trees to grow, how to shelter them, how to shelter as well their crops, and the importance of growing trees as a means of preserving the fertility of the soil. I have come here with gladness for the purpose of impressing on you, or reminding you of these facts, perhaps known to many of you, and asking your co-operation in future in endeavouring to extend and advance this great object. We must remember that we have a public duty in this matter as well as a private one to perform. We have no right to injure the land. We found here the wood, the water, and the fertile soil, and it is a matter of certainty that in disforesting a country we not only lose the first, but greatly impair the other two. No proprietor has the right to injure the fertility of the soil, lest, as it is written in the Scripture, "The land cries out against him, and the forests thereof complain." The great concourse of humanity continually emerges from the clouds of the past. It passes toilsomely by over these earthly roads and disappears in the clouds of the future. We must be sure we will meet with stern questioners. Nor will those pass unchallenged who have, to serve their temporal purposes, rendered the path painful and barren to those generations yet to follow.

Mr. BUCKE.—I should like to ask Mr. Phipps what percentage of forest there should be in the country?

Mr. PHIPPS.—That is a disputed question, but it is generally allowed that it should not be less than three acres to ten. In many European countries they maintain more. If there is in the country a large amount of land otherwise barren, it is a great advantage to plant trees, as nothing else would be so profitable. If we could maintain in good forest condition throughout the country three acres to ten, we should confer a very great benefit on Canadian land.

The SECRETARY.—I move a vote of thanks to Mr. Phipps for the treat he has given us. This matter is to some of us new. We have been fighting with the trees to get room in order to grow our cereals and pasture our flocks, and we have been inclined to look on the forest as something to get rid of. Still, the wonderful price that we would now pay for black walnut certainly would not hold true were the forest still remaining. Things cannot be kept in *statu quo*. The forest had to give way in order that we might live here and this country might be peopled. We must remember, however, that the forest holds a certain relation to our own prosperity and health, and to the best interests of our agricultural pursuits, and that we may press this hostility to the forest too far. Indeed we *have* carried it too far, and we need very much to have our attention called to the true relation between the forest and arable land, and so conduct our agricultural pursuits that we shall maintain sufficient forest to further our interests. At the same time we should endeavour to supply ourselves with those woods needful for fuel, but chiefly for purposes of manufacturing the implements we must use.

Mr. DEMPSEY seconded the motion.

ARBORICULTURE.

Prof. BROWN, of the Ontario Model Farm, read extracts from a paper presented before the British Science Association at Montreal, as follows:—

Is there any country whatever that has made an eminent agricultural history and does not now complain of want of trees?

Advanced nations are not discussing the worth or worthlessness of trees in their rural economy; they are considering how best to secure the fulness of the value thereof in all their bearings. In doing this much serious consideration is necessary. It would be very unwise for any country to rush into extensive tree-planting without a clear idea as to how the work should be begun, carried out and maintained.

Canadian forestry will have no place in all its scientific and practical value until one of two things be accomplished: One is the conviction on the part of her farmers of the necessity of conserving and replanting, therefore, their education up to these; and the other is the power by Government to resume parts of the country for conserving and replanting. Both will be difficult. The former will be the slower but eventually the most thorough, because of self-interest; the latter will be more immediate and possibly less efficient, practically, though scientifically better applied. No large number of various interests could be so well arranged as by a company, and therefore Government, as a company, will have to become foresters in all the many details of the profession.

I believe it is the experience of the world, that more difficulty, in various forms, is found in reclothing with trees where trees grew before, than it is to plant, not replant, a country for the first time. There is not only the practical fact of succession of cropping in its scientific and natural bearings, as similarly realized, for example, in the products of the field, but the more serious one of the indifference of those who cut the first crop. We have no time to show how temperature, rainfall, moisture, and evaporation are directly influenced by a small or large surface of trees, and how, therefore, water is largely in the hands of trees for local distribution. This second duty of forestry as a science and practice would even seem to swallow up the previous question, and is consequently inducement alone to its prosecution on our part. Were neither of these sufficient, however, to convince, the third great reason for tree cultivation will surely convert even the most American amongst us. It is no matter of doubt, under average conditions, in any country, that tree culture is more profitable as a crop than its own agriculture, year by year. This position is not open to question, but clear and marked in all experience where age has given time for proof.

The existing condition of our forests is the very first consideration in this enquiry. Outside of the lumbering interest, which of itself is simply a taking without system, there is no enclosing, preserving, caretaking, or conserving in any sense except the right of individual ownership, some of whom do act the forester, but nationally there is nothing recognized.

There are really no figures to give as to the extent of Canadian forest, either as to gross area or special kinds of timber. The small map recently issued by Dr. Bell, of our geological survey, gives a good idea of the northern limits of the principal trees, but, of course, it cannot help in either of the particulars named. As the country, with the exception of prairie, was originally all forest, and as we have cleared about 25,000,000 of acres for agricultural purposes, it may be said that the whole country is still under trees with these exceptions. What the extent is to a million acres nobody knows, nor do a million acres one way or the other affect our subject.

We have four distinct fields of operation in the future of Canadian forestry: 1st. The untimbered land such as prairie. 2nd. The older cleared portions. 3rd. The recent forest settlements, and 4th, the untouched forest. Each of these will require different methods as to conserving, clearing and replanting, although all will be subject to one grand system of operations. To submit details now would be unnecessary when the object is to impress principles.

But yet another aspect of the question is the requisite proportions of tree surface to that under farm crops. What should it be? This is just one of the things that we do not know, and that we are not likely ever to know, as a point for general practical

guidance. The conditions are so various as affected by climate, altitude, latitude, aspect, soil, sea or lake neighbourhood and vegetation, that no possible number of observations in any length of time could say how much for one district or so much for another. However, men do come to realize through science and practice—practice especially—that a farm or district needs the protection in certain places, and thus a country could easily be reclothed to the extent required for such shelter, if not for regulation of climate and other considerations. The point then of immediate shelter is within everybody's knowledge, and needs no scientific guidance, and I may here say no governmental spurring. But the greater field of climate as an unknown one practically in this relation, is more a national problem, and still very much a scientific inquiry, and what it will have to say in regard to the proportion of trees to farm crops no one can tell. Of course if men disregard everything but the direct profits from trees as a crop upon land, another century may actually find some countries going back to the days of too many leaves and too little arable. Viewing trees in all their relations I am of opinion that upon an average of conditions in Canada, one-fourth of the surface should be covered by them, and as this is just one-half of what we have at present all over the forest districts, there rests the apparent inconsistency of wanting to conserve and replant all the while that we possess double what is required. This brings out the fact that it is the *irregular distribution* of tree surface in our case which gives trouble,—that some parts have more than required, and others have been overcleared.

As the subject grows upon our attention, we are next concerned with what parts of the country should be conserved or replanted, and in this part of the study it is obvious that our views cannot be confined to single farms or even special sections. Referring as we must to the great overruling influences, as previously indicated, we have to deal with geographical features that may embrace thousands of acres that have to be subserved with one or more massing of trees. Just where to conserve or replant, how much on the spot or spots, so as to gather and dispense all the virtues that trees are known to possess, is the great problem of the future. To say that we should only replant our less valuable soils is nonsence, though apparently sensible enough from an agricultural standpoint; that high lands should be conserved or reclad as against lower parts is largely true, though not generally applicable, and that conserving and replanting must go hand in hand and take place anywhere as found best through experience, is correct in every sense.

In order to success anywhere there must be put in operation, upon a system, such a combination of the scientific and practical knowledge that at present exists as shall most likely bring about the fullest realization of tree value. That system is universal in its application, however small or large the scale, or however varied the conditions. Whether we pull down or rebuild, or make entirely new, the system will apply, and as it is by entirely new work that any system is best exhibited I will ask you to go with me to the Prairie. I see no great future for Manitoba and our Northwest unless extensive systematic forestry precedes. The sooner our government realizes this the better. All methods of farming, railway and water communication, minerals, natural grazing, or any other form of good things will never "make" a country without trees. We are not theorising in this. *A peopled agricultural country is an impossibility without trees.*

In our treeless region, therefore, experience has made us acquainted with a variety of wants that can be subserved by trees, and science points to more. Together then they make up a bill that may be thus summarized:

1. Roadside shade.
2. Shelter for dwellings.
3. Shelter for cultivated farm crops.
4. Shelter for open natural grazings.
5. Shelter for enclosed grazings.
6. Head water conservation.
7. Wind breaks.
8. Climatic amelioration.

Either of these would of course serve more purposes than that implied by its name, but a full illustration of the system requires a form for each.

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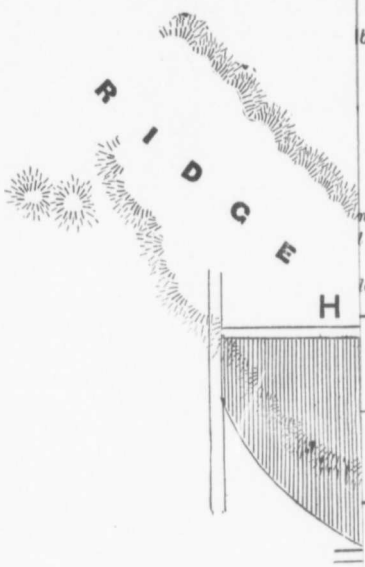


APPLICATION:

POSITION, OUTLINE, ARE

A.—Road Side Shade.
B.—Shelter for Dwellings.
C.—Shelter for Animals—Two Fields.
D.—Shelter for Open Grazings.
E.—Shelter and Water to Four Fields.
F.—Shelter for Farm Crops.
G.—Head Water Plantations.
H.—Great Wind Breaks.
J.—Lesser Wind Breaks.
K.—Sub wind breaks.
L.—Conjoint Wind Break and Clim
Plantation.
M.—Great Climatic Plantation.

Now this map professes to show all these: from the single shade tree up to the great climatic plantation, the area or district embraced and the size of each of the classes would be subject to requirements, from one acre to as much as 1,000 acres each; the system or principle is not affected by size, but, position and form, or outline, are prime factors.

Size would be regulated by the particular physical features of the district and the object in view; form, by prevailing winds, as well as the particular object and partly by physical features.

In our prairie example on the map we have a farm of 160 acres made up as follows:

Timber	30 acres.
Cultivated	125 "
Orchard, garden, buildings, roads	5 "
Total	160 "

The fields and roads lie northwest and southeast, and therefore also northeast, and southwest. By preference the buildings are situated on the southern angle of the farm at a junction of a concession and a side road. In the first place the roads are lined with shade trees, which serve as shade to animals in some of the fields as well. Then the dwelling house and orchard, while open to the southeast, south and southwest, are shaded by ornamental standards and lined on the north and northwest by trees. This tree line may be called the 2nd sub-wind break of the farm. The barns with two small fields or paddocks, are also open to the south and protected from the colder winds by a narrow belt of timber in positions similar to the others. The six other fields are, in the first instance, sheltered by a broad belt all around from the east, via north to the west, capable of breaking and mellowing the whole farm for cropping. But, for live stock, under such circumstances, and with twenty acre fields, it is necessary to provide other shade and shelter. This is best supplied by what I have proved in actual practice both in Scotland and Canada. I know of no better form and position of a shade and shelter clump of trees than that illustrated in Fig. C., and the position of which is also shown in our farm example. It serves two fields, and from whatever direction the wind comes, or the sun-shines, the animals can find a retreat in either field. You cannot shoot a straight line across this clump and not find a safe corner.

Then, in the adaptation of one form of shelter to four fields (Fig. E) is neat and serviceable, and when supplied with water in the centre is a very valuable acquisition to pastures. In the case of extensive open grazing, the circular belt (Fig. D) is also best for various reasons. It resists and breaks wind storms better than other outlines; it is less liable to damage by cattle or wind, is more compact and affords more outside shelter. There should be two passages not far apart and facing south as much as possible; one passage is not enough with a large number of cattle going and coming, and provision is necessary for a stack of hay in the centre.

These are what may be called the purely agricultural divisions of arboriculture, and are definite and practical enough, upon which little difference of opinion is likely to arise. In what remains of my subject there may be not only difference of opinion in regard to details, but considerable difficulty in satisfying that anything more is needed than what has already been sketched. It will be said: As each farm has its proper amount of shade, shelter, fuel supply, and even wood revenue otherwise, what more does the country require?

I have not seen in any work on rural economy that it is as much the duty of nations to administer their arboriculture as their laws of health. Then while everyone acknowledges that without the proper measure of trees there cannot exist the proper health, political economy, science, agriculture and all society, is equally interested in this question, and as I have already indicated its national aspect, it is only necessary to point out how more than the immediate farmer's work is required.

Over a great plain, such as our prairie, where storms rage unchecked. where rains come and go irregularly and uneconomized in any form, and where sunshine is unmellowed, it is necessary to establish agents for the purpose of subserving these and other climatic

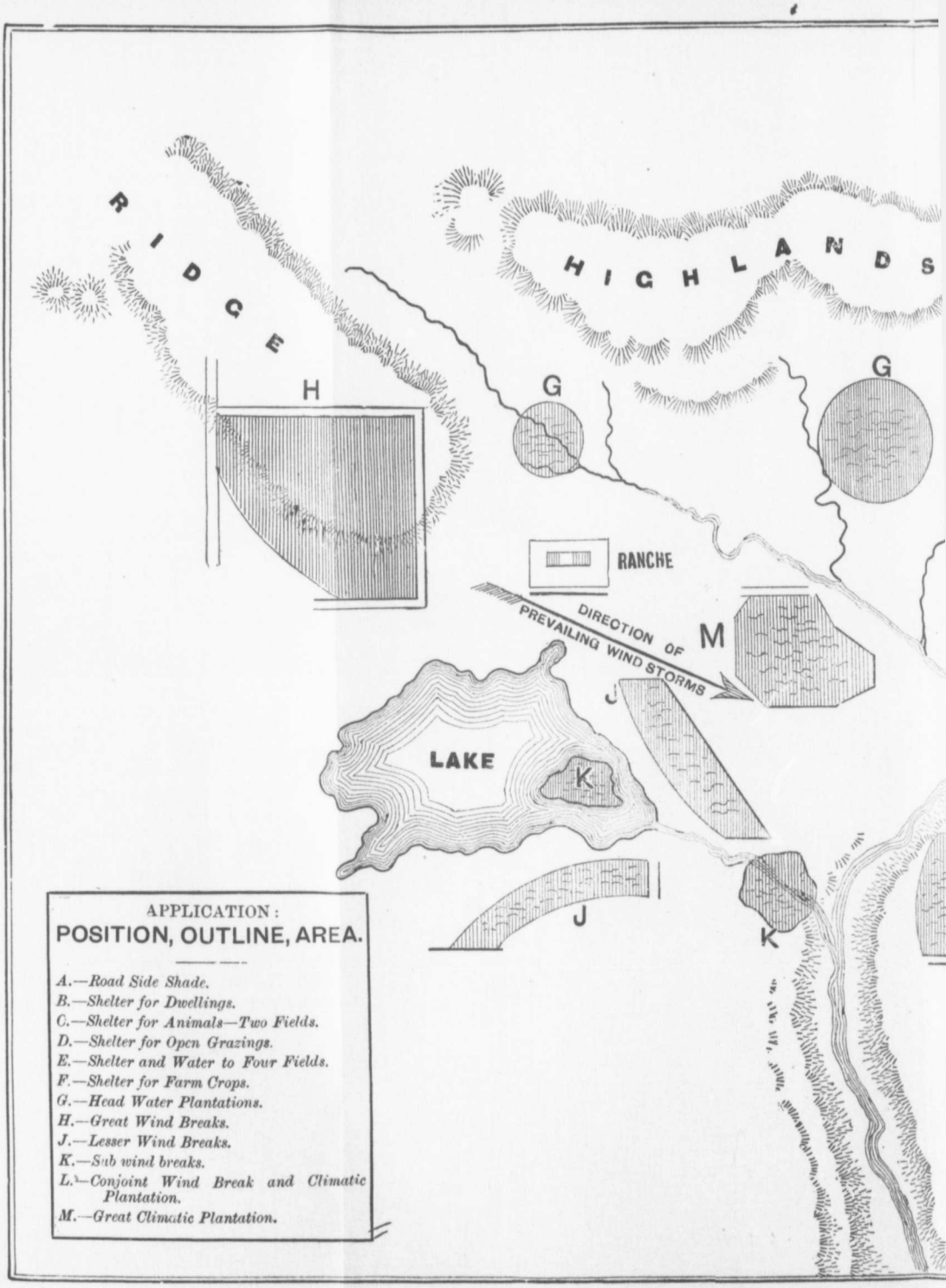
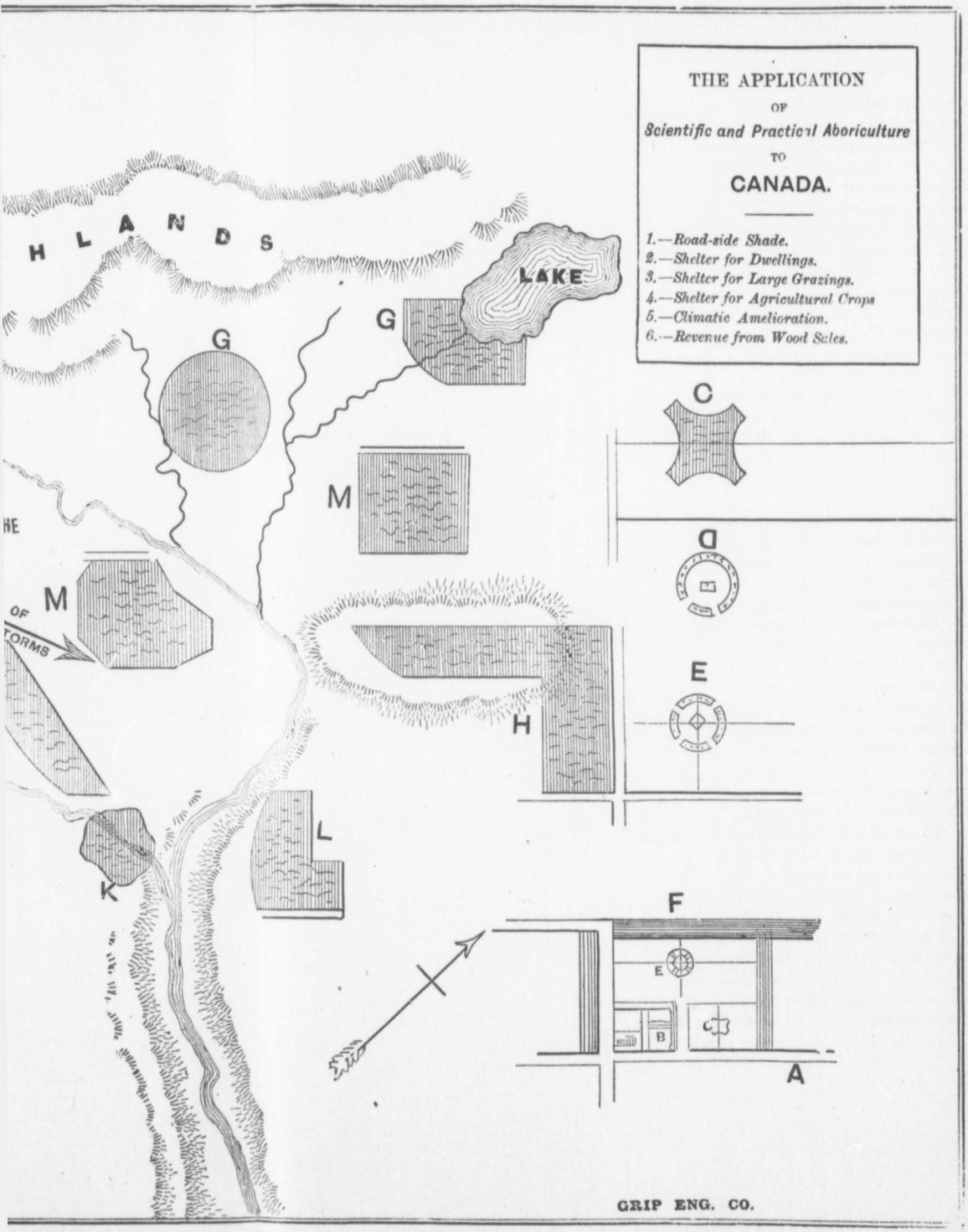


DIAGRAM TO ILLUSTRATE PROF. BROWN'S PAP



ATE PROF. BROWN'S PAPER ON ARBORICULTURE.

purposes. Assuming that all the country were planted to the extent already shown for immediate farm use, there exists nothing in particular spots,—no plantations exactly placed to conserve head water streams, no great and small wind breaks, and no great climatic plantations,—the agents respectively.

On the map these are shown in position, proper outline and extent. *Position* is regulated by elevation and neighbourhood of other physical conditions, such as water surface, and high land; *outline* is regulated by direction of prevailing winds, conformation of surface, and partly by public roads, while the *extent* is directed by the indefinitely known influence that a certain body of trees possess over climate; climate being understood as distribution of rainfall, evaporation, natural drainage, and temperature.

I am aware that we cannot reason on this from any clear or precise experience, and are driven to draw conclusions from actual facts, and there seems to be no doubt that it requires a certain massing and kinds of trees to ameliorate climate, narrow strips and clumps being insufficient, or incapable of doing so.

Head water plantations, as implied in the name, must surround, or be in the immediate neighbourhood of, sources of streams, and have an outline to nurse them, with area consistent to the importance of the source. The circular form is good and applicable to the two springs at G., or it may be oval as illustrated at the mouth of the valley, and would also take the position and area of that at the small lake.

Great wind breaks being meant to fend the smaller plantations as well as particular districts, have to be carefully outlined, of very considerable extent, and must command an exact position. In the example of H. on the ridge, which is designed to break the storms from the adjoining ranch, several points are noticeable. The land occupied by the plantation is within one block, or range of roads, and therefore does not encroach; it occupies also part of a ridge that generally is less valuable for agricultural purposes, it is formed to cut or feather the storms that prevail in the district—southwest by west—a point in forestry of very great importance indeed; it is massive or in sufficient body to resist and break, and it is so situated as to resist the main force of the storms. It may be remarked that it would be better to extend the plantation eastward upon the point of the ridge; this I have avoided in order to make the example more difficult.

The other great wind break is of a different form, while serving a similar purpose. It parallels with the public roads, makes no awkward corners for cultivation of adjoining land, faces prevailing winds with the exception of southeast end, and will protect a large area of country.

Lesser wind breaks, as at J., are placed where, either by the form of the country on the prevailing wind side, or where a larger break is difficult to establish. The example on the east of the large lake exhibits both. Position here is very important, and it will be observed that outline and area are arranged to receive the storms across the lake, break them, and yet yield to them.

Sub wind breaks are easily arranged and can take various forms and sizes to suit conditions as at K.

Another kind of plantation, as already referred to, is that which I call climatic,—the objects of which have been explained. Their position in a country among others is not so easily reasoned, either scientifically or practically. Area is obviously of more consequence than form, because it requires a great field of leaves to do what leaves are said to do in climatic amelioration. M. with eight sides, and the other with four, are designed as concentrated masses adapted to Canada, and of course in their case, more than other plantations, the cost of establishment would be less per acre, and would also better meet the item of revenue. L is an example of a conjoint-wind break and climatic plantation.

Canadian forestry, whatever its future, will never realize all it should unless hand in hand with science.

ESTIMATE OF FINANCIAL POSITION OF A MIXED PLANTATION OF ONE HUNDRED ACRES IN CANADA.

(Manitoba and the Northwest Particularly.)

REVENUE.

1st Thinning when 15 years old, 3,000 poles, 20 ft. long at 3 cents	$90
2nd Thinning at 18 years; 8,000 trees at 5 cents	400
3rd Thinning at 25 years; 15,000 trees, 12 inches diameter at base, 40 ft., at 30 cents	4,500
4th Thinning at 35 years; 25,000 trees, 20 inches diameter; 50 ft., at 50 cents	12,500
5th Thinning at 40 years; 30,000 trees, 22 inches diameter	22,500
6th Thinning at 45 years; 21,000 trees, 25 inches diameter, at $1.00	21,000
7th Thinning at 50 years; 18,000 trees, at $1.10	19,000
Gross Revenue	$80,000

10,000 trees failed, leaving 20,000 trees, or 200 per acre as permanent crop.

EXPENDITURE.

1,000 rods of fence, at 75 cents	$750
Drainage of portions	250
150,000 trees, 1 year seedling, 1 year transplanted, at 1 cent	1,500
Planting same	575
Freight on trees	150
Original cost	$3,225

Per acre—$32.

Replanting failures for three years, 5,000 trees	100
General attendance, up-keep of fences, etc., for 15 years	300
Gross cost	$3,625

Per acre until revenue begins—$36.

Cost of thinning and hauling to roads	$13,100
General superintendence and incidentals for 35 years	3,500
Gross expenditure	$20,225
Balance being clear revenue	60,565
	$80,790

No allowance is made for interest on outlay and rent of land, on the one hand, nor for interest on revenue, and value of grazing for twenty-five years, on the other hand. Neither is credit given for climatic amelioration, nor for value of permanent crop.

Mr. WILSON.—What do you think the best kind of timber to grow in this part of the country?

Prof. BROWN handed Mr. Wilson and others lists prepared at the Agricultural College.

Mr. CAMPBELL.—I knew a planting of larches which had to be supported to prevent the trees from blowing away; yet they did well, and in thirty-five years timber was being cut from them for shipment.

A QUESTION.—Is it a general opinion that the European larch, when grown here, is not as valuable as in the old country?

Prof. BROWN.—I have never seen them of any size here, but they grow well.

The PRESIDENT.—I think it is generally held that it does not succeed as well here as in Scotland, for the reason that the climate is different. In Scotland there is so much more moisture, and that particular character of climate suits the larch. I have no experience beyond this: I have European larches growing and they seem to do well. As to timber, however, there are none of us able to give much information. In the Western States it seems to be the conclusion that the tree is not as valuable as in the old country. Still it is a good tree.

Mr. PHIPPS.—I would like to say in reference to the very valuable paper just read, that I have advocated the retention of a larger area of forest for years past, but I did not care to trouble an audience with what is a governmental matter, and which can only be obtained by pressing on the Government to hold large reserves of Crown land. I have lately spent two months in the forests of the Ottawa, right away up to Lake Nipissing, stopping in the lumbermen's camps, and finding what state the forest is in. I shall lose no opportunity of pressing on the Government the necessity of preserving as large an area as possible. I may say that Lower Canada has now noticed the need of such reservation, and has lately reserved two large districts—St. Maurice and Ottawa—and yet another similar one in the eastern part, which would aggregate sixty or eighty thousand square miles. In these, settlement is to a great extent discouraged in order that the reservation may be kept up. Much of the land is poor, and it is not well to allow settlers in there on that account, and it is also done to prevent the raising of the fires that are necessary when land is being cleared. I may also remark that I did not trouble you with statistics as to what class of trees can be most suitably grown, but I am glad to say that I am getting out a Government report, from several hundred correspondents, regarding their experience in tree planting, and what kinds they have found to succeed, and what have failed. Their methods will also be given.

Mr. MORRIS.—Has Prof. Brown not omitted Catalpa speciosa from this list?

Prof. BROWN.—In our experience the Catalpa is not encouraging.

Mr. FORSYTH (of the Agricultural College).—Our experience is that last winter nearly killed them all. We scarcely had a leaf on top of them. A dozen or two stood for two or three winters, and then last year, with the thermometer down to 30 or 32 degrees below zero they were killed.

The PRESIDENT.—We had that temperature two years ago, and they stood it. They were six feet high.

Mr. MORRIS.—The thermometer went down to 27° below zero with us, and the Speciosa stood well. I think the growth will average one inch in diameter annually. In Minnesota it is considered valuable.

The PRESIDENT.—We have offered this tree to members to be tested. In the Niagara district it has been tested, and we know, from the experience of members, that the failure at Guelph must have been due to some other cause than the cold. It could not have been the winter alone.

Mr. GOLDIE.—I think the cause was its late growth in the fall. It does not ripen up its wood; at least that is the way my half dozen have acted. Mine were killed below the snow line. I propose another year to lift them and protect them during the winter, and plant out again; and then when they get a considerable size they will stand.

Mr. WILSON.—I agree with Mr. Goldie. I tried them to some extent in Chatham, and they died back half the growth of 1883 last winter.

On motion of Mr. Mitchell, seconded by Mr. Wright, the thanks of the Association were tendered to Prof. Brown.

Mr. GOLDIE (of Guelph) read the following paper:—

HARDY PERENNIAL PLANTS.

I wish to bring before the Association the importance of encouraging the cultivation of hardy perennial plants for the garden. The old system of raising annuals and tender bedding out stuff every year is both troublesome and unsatisfactory, and to those who have no proper houses or frames for propagating it is also expensive, as they have no other means of filling their borders except by purchase, and to those situated in the country this is not always possible. The mania for gaudy bedding and carpet work is happily dying out, and a taste for the beautiful Alpines and other hardy classes of Perennials is taking its proper place. To my mind there is something in the individuality of the beautiful spring bulbs and Alpines that quite casts into the shade all the ribbon and carpet bedding of the fashionable garden. From early spring till late in fall a continual succession of flowers can be obtained from the hardy garden without the annoyance of raising the young plants every year and watching the weather for a favourable time, after

the late spring frosts are over, for their bedding out. Then again some of them are hardly well into flower when the dreaded early fall frosts come and the work of the summer is destroyed in a night. Not so with the hardy garden. In the early spring the Snowdrops, Crocus, Snowflakes, Scillas, Narcissus, Hyacinths, etc., followed by other spring and summer flowering plants in rapid succession, keep the borders gay all the time. While the hardy garden must be in a great measure filled with foreigners, yet there are many natives that are equally as well worthy of cultivation—in fact so much is this the case that in Europe a garden of any pretensions without a border for American plants and shrubs would be looked upon as wanting in one of its greatest attractions. They consider our Cypripediums, spectabile and pubescens as the most magnificent herbaceous plants in cultivation. Then we have the Trilliums or Wood Lilies, Liliums, Hepaticas, Erythronium, Sanguinaria or Bloodroot, Asclepias, Aquilegias, Violas, several species of Phlox, Lobelias, Gentians, Asters, and an innumerable number of other things which would look well in any garden. With these, and a proper selection of plants of foreign birth, no garden need be without a good display of flowers from early spring till late in the fall.

It would extend this paper too much to go over a long list of names which can be got out of any descriptive catalogue. I will only mention a few natives, some of which should be found in every garden. If some florists or nurserymen would take to growing and putting on the market a good selection of perennials he would be doing a good work, and no doubt it would go far to create and perpetuate a taste for hardy garden plants, which once acquired will never be given up while life lasts. In preparing a border for perennial plants it is of as much importance to have it deeply dug or trenched as it is for any vegetable crop whatever. If possible, incorporate some leaf mould and a small portion of very rotten manure, and if the land is heavy a quantity of sharp sand will be an improvement.

Most bulbs require a good, deep, rich soil. Hyacinths, for instance, cannot be grown to perfection without plenty of manure and depth of soil, and when once a bed of them has been planted under these conditions they will last for several years without further care, except to give them a good mulching with well rotted manure every fall. Above everything, follow nature as closely as possible in soil and situation. One class of plants ikes a shady situation and moist soil ; another will stand the hottest midsummer sun and will delight in it. So, according to the situation, a proper selection should be made.

That this may be the means of drawing attention to, and creating an interest in and love for, the beautiful hardy flowers of the garden will be my prayer.

LIST OF HARDY PERENNIALS.

Anemone—nemorosa.
Asclepias—tuberosa, Orange Milkweed.
" quadrifolia.
Asters—a great many species.
Aquilegia—Canadensis, Columbine.
Campanula—rotundifolia.
Cypripedium—spectabile, Lady's Slipper.
" pubescens.
" parviflorum.
" acaule.
" arietinum.
" candidum.
Dicentra—cucullaria.
" eximia.
Erythronium—Americanum.
Gentiana—Andrewsii.
" alba.
Hepatica—triloba.
Hepatica—acutiloba.
Lithospermum—canescens.
" hirta.
Lobelia—cardinalis.
" syphilitica.
Lilium—Canadense.
" Philadelphiacum.
" superbum.
Philox—divaricata.
Sanguinaria—Canadensis.
Sisyrinchium—Bermudianum.
Thalictrum—anemonoides.
Trillium—grandiflorum.
" erectum.
" erythrocarpum.
Viola—pedata.
Uvularia—grandiflora.

The PRESIDENT.—There are, in addition to what Mr. Goldie has recommended, quite a number of suitable species which he has necessarily omitted. It would make the list very long to include all our natives, but there is our native Columbine which could be specially recommended. That is one of the most beautiful we have in our woods, and the family contains a great many varieties easily grown. There are also in addition to the old English varieties the Rocky Mountain species. There is a plant, I think I am correct

in saying Mr. Goldie did not mention, that is the Hibiscus moscheutus, growing up in the West. The flower with me was three to three and a-half inches across, and nearly white when open, which afterwards assumed a pale pink colour. They open only for one day. The number of flowers produced is large, so that every day there is abundance of bloom. From the perennial root it grows up every year. Then, as Mr. Goldie has well remarked, the list of foreign plants is so immense, that to take up two or three of the genera and investigate the best varieties will take all the space any one has in his garden. Take the Monkshood, of which the flowers are beautiful, and although the blue variety is in use I have not heard that any accidents have arisen from its poisonous qualities. In that connection I may remark that there are some twenty-five varieties of which seeds may be obtained in Germany. In addition to these we have the Delphinium or perennial Larkspurs, of which new species have been introduced from India and China during the last few years. The Primulas, which include the old Polyanthus, would fill an extensive garden itself. There are some forty varieties. The varieties of Primula cortusoides are grown all over Europe. Then there are the different varieties of Foxglove; in addition to the old purple flowers there are now the yellow and variegated ones. They are practically biennials. The varieties of Phlox and Pæonies are to be had in great numbers. We have leeks in the North-west—Alliums—which have no bad smell if not broken, and produce flowers of a beautiful purple colour. In the early months of the year we have a class of purple flowers, species of Liatris or Blazing Star. The flowers form a spike and begin to open at the top. They give a characteristic hue to the prairies in the spring, and are well worthy the attention of all florists. Later in the season we have every variety of composite yellow flowers, including sunflowers, now so fashionable in almost every variety I think our Association would do well to disseminate more knowledge of this very important branch of floriculture. Any one who grows annuals will like a few rows of perennials, which only require that the ground be kept clean. By proper selection you can begin with the opening days of spring, and have flowers until the season ends.

Mr. CAMPBELL.—There was one blue plant called the Gentiana acaulis that was common for borders in the old country. I have failed to get it here.

The PRESIDENT.—I have several plants imported, and they are doing nicely.

Mr. GOLDIE.—I may say that I started to make a list of choice ones once. I took Campanulas alone, and I had thirty down, each one of which no one would want to be without. There are also the Irises which no one should be without, and now we have a new sorts from Japan that are beautiful and gaudy. Any one interested may get a catalogue and make selections from descriptions given. Take the Columbines, and, if you are trying to acquire all the known species, the more you get the more you will want. Then there are the Ferns which have not been mentioned. To any one who can afford the time, they are one of the most interesting families to grow.

Mr. J. S. DEARNESS (of London, P. S. Inspector for East Middlesex).—I have felt a great deal of interest in this paper. Although among the youngest of amateurs present, nothing in my experience has given me so much satisfaction as to import some of these pretty spring flowers into the garden. With some of them I have not been successful, but with the Sanguinaria and several others I have had very good results. They improve very much under cultivation. Some of the wood violets, the Erythronium and Phlox that we are so familiar with and to some extent disregard, would be very popular if our dealers were to charge high prices for them. The general public seem to appreciate most what costs most. Our greatest blessings are those we appreciate least, and I would be glad if, as a result of this paper, there would be more attention given to wild flower cultivation. I should like to know if the Asclepiads are poisonous; and another request is this: give us the names of a few fragrant autumn flowering plants. I am not so fond of those that are brilliantly coloured as those that are very sweet. The cultivation of perennial flowers is neglected, because those who are interested make more money out of pot grown flowers. A gardener once told me there was but little demand for them. If these hardy perennial flowers could be cultivated for our school gardens it would give a great impetus to floriculture. Wherever I find a school teacher who has a taste for flowers and puts them in the school yard, I find sometime afterward, when driving around, the same flowers in the gardens of the children at their homes.

The PRESIDENT.—The Asclepiads are not poisonous. The scarlet variety is commonly known as Pleurisy Root.

Mr. GOLDIE.—As to fragrant flowers for autumn the imported Phlox is one; but for native plants I cannot call to mind anything but the wild rose.

Mr. BUCKE.—I think the reason our wild flowers have not been more cultivated is because they are not fragrant. A flower which is not a native but which makes a good border, is the double flowering daisy.

CURRANTS—RED AND BLACK.

Mr. MORRIS.—They require strong, rich soil, and good cultivation. The soil cannot be made too rich. I believe that if you give them good, strong soil, and thorough cultivation, you will not be troubled with the currant worm. If it does attack them use hellebore. I think that Fay's Prolific is going to be one of the best. There is another of high quality, and that is Moore's Ruby, and for a white currant the White Grape. Lee's Prolific for a black currant is good, and Black Champion is another, but I have not fruited it.

Mr. DEMPSEY.—We grow currants, and we find it best to cultivate them under two circumstances. We select the warmest piece of land we have, and from that we sell those which ripen first. We get good prices. Then we have others on cool pieces of land, where the soil is damp, and off that we manage to have currants when scarce anybody else has them. By this means we find it pays very nicely. As to cultivation, I presume all of you will agree that you cannot manure them too highly or cultivate them too much. They require a large amount of food. As to varieties, there is none other which has paid me so well as red. The people do not seem to want white. The best have been Cherry and Versailles. I tried what I bought for Lee's Prolific, but it was not that at all. I manure and stimulate them very much, and never found any trouble with them. We esteem a couple of Saunders' seedlings very highly, and I have one myself—an accidental seedling—which is superior to anything else we have at all.

Mr. BEALL.—Does Mr. Morris know anything about a currant called Russian Pear-shaped?

Mr. MORRIS.—I can only say that we received among a lot of Russian fruits from Russia, some currants of that variety—white and red. They have not fruited yet, however. The Black Champion fruited this summer, but this being the first time I cannot speak as to its bearing qualities.

Mr. FORSYTH (of Guelph).—Of the varieties we have had, the Versailles and Lee's Prolific has proved about the best. Last year was our first year of fruit from our bushes, so we have not had much experience.

Mr. WRIGHT.—We grow currants, and so far the Versailles has been about the best. The old common Dutch is among the best for sweetness. When it is ripe, and you eat it with cream and sugar, I know of nothing better. I have not fruited Moore's Ruby yet, but it is highly spoken of. I have Fay's Prolific, but have never fruited that either. Mr. Morden, of Niagara, was kind enough to send me a bush called Raby Castle, but I have not fruited it. In blacks, Lee's has been the best with us. I have the Black Naples, but it is not as good. A lady near me grows Lee's to such perfection that I never saw such crops. The white currant does not take as well as the red.

The PRESIDENT.—As to the quality of Moore's Ruby, I may say that I had the opportunity of comparing it with others last year, and I consider it much in advance of any other in flavour and quality, and I believe it is going to take a high rank. The size of the berry and length of the bunch do not seem to be equal to Fay's Prolific, but if I had to choose between the two I should take Moore's Ruby.

Mr. BUCKE.—The size of the currant depends largely on the manuring and cultivation.

Mr. GOLDIE.—I would like to ask what system of cultivation is preferred, and in regard to form of bush. For myself I like to have a single clean stem without any suckers. I think most growers like suckers to come up. Young plants from nurserymen are covered with suckers, but I have a clean stem.

Mr. MORRIS.—I have tried growing currants on a single stem by rubbing the buds off, but I found it a perfect failure. I think the currant requires to renew itself with suckers. Gooseberries require the same treatment.

Dr. J. R. FLOCK (of London).—While growing on one stem did you find the fruit was larger?

Mr. MORRIS.—I think that was the case.

Mr. DEMPSEY.—We attempted to grow them on single stems, and I became satisfied in about five years that my currant bushes were gone. If we attend to the thinning out of our bushes, we can get as large fruit from bushes with branches below the ground as those above.

Mr. CAMPBELL.—When I began growing currants, I started on the old country principle of having berries on one stem, but pretty soon the fruit broke down the branches and the bushes were gone.

Mr. A. M. SMITH.—Although not experienced in market growing, I have tried most of the leading varieties for myself. As far as I know, I think Fay's Prolific of the red varieties is the best. In black currants, the Black Naples has been generally considered the best for profit in our section, although I find people are beginning to prefer the taste of Lee's Prolific. Some say they would pay more for it, but when fruit goes on the market it is not known what variety it is. I have heard it remarked by parties that they could not see any difference between Lee's Prolific and Black Naples in quality, but I judge that such parties were deceived the same as I was, when what I bought for Lee's Prolific was not that at all. When I got the genuine article, I found there was a vast difference. You could tell them apart with your eyes shut. In point of productiveness and size I do not see very much difference, but I think Lee's will bear younger than the Naples. The Victoria has done very well with me, and I should judge it would be a very good currant for the market. There is one variety originated by Mr. Saunders, which I think is superior to the Black Naples. He gave me some cuttings.

Mr. GOLDIE.—I have planted mine on sandy soil, and put out what is called, in Hamilton, Black English. One of my neighbours says they are Black Naples. They were sent to me, and the soil I have put them on is for a part of it low and wet. I find that the wet soil, where I have underdrained, seems to be a year ahead of the others in two years.

The PRESIDENT.—I had some Black English, and they are not to be compared with Black Naples.

Mr. SMITH.—That is my experience.

Mr. GOLDIE.—I cannot see any difference in the bush.

Mr. GREGG.—There are men who bring currants to London market who had great trouble with insects.

The PRESIDENT—There is a spotted caterpillar which is partial to the black currant, and it is not much affected by hellebore; but Paris green and water will fix them.

Mr. LATIMER.—In the vicinity of Lake of the Woods I found both red and black currants growing wild in great abundance. They were quite equal in size to any I have seen on London market, and it seems to me if some of them could be procured and cultivated, they might turn out valuable. They seem disposed to grow in damp soil.

The PRESIDENT.—I have some of those black currants growing in my garden from seed obtained in the garden of the Lieutenant-Governor of Manitoba. They appeared, if we could judge from what we saw there, better bearers than any we have in cultivation. I hope in two years to have some of them bearing.

Mr. FORSYTH.—Large quantities of berries come into Guelph market that have been gathered in their native state. They are larger than the cultivated, but of inferior quality.

The PRESIDENT.—That is probably our wild black currant, and it is very inferior in flavour.

The Association then adjourned until evening, at eight o'clock.

At the evening session, the Question Drawer was opened and discussed.

ALTHEA ROSA.

Is there any part of Ontario where the Althea Rosa is hardy?

The PRESIDENT.—In this section of the country it cannot be called hardy. Some years it flowers well, but occasionally we get a season that kills it out to the snow line. I do not know whether that is the case in the Niagara district.

The SECRETARY.—It is sometimes killed. Three years ago some of the plants were killed back very much, and one very old plant, which I had standing on the lawn, was so badly injured that I took it up. Younger plants do not suffer so much, but usually get through the winter and blossom very freely. It is a very pretty shrub, and is valued for its late flowering.

CROSS-FERTILIZATION.

How is cross-fertilization effected?

The PRESIDENT.—Simply by the application of the pollen from the stamen of one flower to the pistil of another. One plant is selected as the female and another as the male, and the pollen conveyed from one to the other. Care must be taken to remove the corolla before the flower is naturally open. That is done by tearing it away, the next step is to remove all the anthers with their stamens, and then there is nothing left but the naked pistil. Immediately you have operated in this manner on all the flowers you want, pull all the others off the bunch and throw them away. Then cover the prepared flowers with a bag of fine manilla paper while you collect the pollen, so as to prevent insects from bringing other pollen, or fertilization being affected by pollen blown by the wind. When you have returned, apply the pollen with the finger, or a fine camel-hair pencil. Then put the paper bag on, and leave it until fruit has formed.

HYDRANGEA PANICULATA.

What is the best manner of saving Hydrangea paniculata from winter-killing and obtaining the greatest result in bloom?

Mr. GOLDIE.—I was not aware that it winter-killed. I have had it for several years, and it stands the severest weather to the tips of the branches. To get plenty of bloom you must use plenty of manure and give it all the water possible.

APPLES IN MIDDLESEX.

What winter apple is most profitable to growers in Middlesex?

The PRESIDENT.—We have had that question pretty well discussed, and the decision has not been on any one variety. It would be very difficult, as far as I am conversant, to name any one apple which should have precedence over all others. Difference in soil and location bring different results to different growers. I know that some of our largest growers are growing Northern Spy most extensively. It takes a good while to get the trees into bearing, but when it does bear it generally proves most satisfactory. There are others who are also growing the American Golden Russet very extensively. I think perhaps, that, if a general expression of opinion could be obtained from local fruit growers it would be in favour of the Northern Spy.

Mr. SMITH.—I should judge, from the result of my purchases through Norwich, that the Northern Spy would be as profitable as any other. The American Russet is perhaps next. The Baldwin does not always succeed, on account of the injury to trees from winter in exposed localities.

THE MARKET FOR SMALL FRUIT.

Is the market for small fruits likely to be overdone for the next ten years?

Mr. LITTLE.—Judging from the past, and looking to the future, I would say that there will be a larger demand than there has been in the past. When I began selling

fruit, as an amateur, twenty bushels would have supplied our locality, but every year it has increased. Selling strawberries is profitable, and I think that a man industriously disposed can make more off ten acres of land with that fruit than off 100 acres by growing grain.

ORNAMENTAL TREES.

Mr. GOLDIE.—The programme does not lay down any limit of ground, and it would make a considerable difference whether the plot were large or small. I have noted down a few that I have tested myself, and I give the list :

Abies—excelsa and varieties.
" orientalis.
" Hudsonica.
" Japonica.
" Alcocquiana.
" polita.
" Nordmaniana, tiger tail.
" Canadensis, *nana* or compacta.
" Douglasii.
Picea—pungens.
" pectinata, *nana*.
" pichta, Siberian.
Salisburia—adiantifolia.
Podocarpus—Japonica.
Sciadopitys—verticillata.
Pinus—cembra.
" Austriaca.
" Monspiliensis.
" strobus, *nana*.
" Mugho.
" pumilio.
Thuja—occidentalis—white arbor vitæ.
Thuja—Fern leaved, Douglas.
" Golden, "
" White Tipped, "
" Little Gem, "
" Tom Thumb.
" Vervaneana.
" lutea.
" Hoveyi.
" globosa.
" pyramidalis.
Common Lilac, varieties.
Persian do
Chionanthus—Virginica, white fringe.
Halesia—tetraptera.
Styrax—Japonica.
Wiegelia—rosea.
Cercis—Canadensis, red-bud.
Sophora—Japonica.
Virgilia—lutea.
Cornus—Florida.
Rhododendron—Catawbiense, varieties.
Azalea—Belgian, varieties.

I might say in conclusion, that in planting trees they must be given room. If they are of a spreading habit, let them spread, that you may get their full beauty. Most people who plant borders think they will thin them out when they get nicely growing, and then they forget to do so.

DAHLIAS.

D. W. BEADLE (of St. Catharines).—Fashion seems to have a great deal to do with the choice of flowers that people plant. We get a craze for one thing at a time, and by and by we get sick of that and get a craze for something else. A short time ago in the City of New York, at this time of the year, the only thing anybody thought of buying was a Camelia. If they had a bouquet without that, it was not a bouquet at all. Now they would not have it under any consideration. They must have a rose bud, and that rose bud must be of a light saffron or yellow colour, or it is not satisfactory. A short time ago there was a craze for dahlias, and cultivators cudgelled their brains to get out some of the most beautiful combination of colours and most perfect forms. They succeeded so well that very rich dahlias were produced. I think I never saw more perfect forms than some of the dahlias our cultivators in Scotland succeed in raising. It has no scent, although it is not offensive ; but now we have passed to another stage, and the craze is for single dahlias. The beautiful double forms are, in a measure, unfashionable. People no longer see any beauty in them, but prefer the single flower that looks like a sunflower. I suppose it has come in the wake of the sunflower craze, that Oscar Wilde introduced with his new rules of esthetics. I still believe the most desirable varieties are the double, and cannot see any great beauty in a single dahlia. I will not take up your time in speaking of the different names, such as Queen Mab, Startler and Gem, for you would not remember them. The florist's catalogue will, perhaps, tell you more than I know, and will tell you more than the writers themselves know. There are the "fancy" dahlias, made up of a number of colours, but the single colours, I think, please the eye longest ; and yet some of the harlequin ones are most beautiful and are worthy a place in your gardens for variety sake. Then there is another division : the Pompone, or small growing

dahlias, which are very pretty to make up in small bouquets for the table. The dahlia originated in Mexico, and is an American plant; but the Americans did not discover its [illegible]es. It was taken to Europe, and had to come back here before we could appreciate it, which seems to be true of a great many flowers. I remember a gentleman in Brooklyn, N. Y., who had a beautiful Camelia and tried to introduce it there. It would not go. He sent it to France, where some of the French growers got hold of it, and it came back afterwards and sold like hot cakes. As to its cultivation, I may say it is a strong feeder. If you want to grow dahlias to perfection, give them good, rich soil, and abundance of it. If the season is dry, give them plenty of water. I think I never saw grander flowers in my life than the dahlias of a year ago, not excepting the rose, in their perfection of form. Heat has an injurious effect upon them, and they should be shaded from the afternoon sun. If a certain amount of mulch is placed on the ground, and the plant watered, a good deal of moisure will be exhaled. To keep the tubers, put them in a perfectly dry cellar that is frost proof.

BEES.

Mr. DEMPSEY.—The beekeepers of Canada are not under the necessity of sending their bees to Europe to win a reputation, as the flower growers and stock breeders seem to have done. I believe stock growers have been obliged to send a heifer to England to get $6,000 for it, while it would bring but $25 here. We have gone all the way to Palestine for our bees, and I do not know that we have improved on them. In their culture we have to study their nature, and then apply our treatment as near the natural plan as possible. We find that they are natives of a tropical climate, and build their homes in rocks and hollow trees, and select a spot where the immediate rays of the sun do not strike upon them. We must provide some similar protection. When the household becomes too numerous, we find that they divide and emigrate. We always find the mother or queen bee leading the colony in this movement. We find now that we can rear these queen bees previous to the time they are required, and have one ready as mother of another family, and thus divide the bees much more rapidly than by allowing them to swarm and then hiving them. By doing this we obviate a difficulty that you will better understand by an illustration. A certain lady, who was a bee fancier in our section, wore one of those Shaker bonnets, and a queen bee that was leading a swarm happened to light on the under side of it, and the others followed. She threw off the bonnet, but the queen happened to be attached to her head. A little boy saw the wonderful difficulty the lady was under, and unlike many other boys he went to her rescue. He saw where the queen bee was, and after grabbing her he put her in the bonnet, and the swarm followed. I followed a colony of bees that was leaving my place, for half a mile, when the queen bee settled on my th[illegible]et the colony settle there, and carried them home without getting a sting. It is safe to say, however, that they do not always act that way in people's hands. We find them very profitable. There is nothing so profitable as bees when properly managed. It has been said that they work for nothing and board themselves; but I would not have you infer that there is no expense connected with bee culture, for there is considerable. We must have hives, and they cost something. We must have artificial foundation, we must have the sections properly arranged, and we must devote a good deal of labour to them. With respect to the office they perform in horticulture, it is an important one; but before I go into that point, let me correct some erroneous ideas. You may remember hearing a very intelligent gentleman, engaged in the cultivation of the grape, condemn the bee for taking the sweet principle out of the fruit. I never knew a bee to interfere unless the fruit was punctured first. I have proved this by thrusting a pin in a Delaware grape, and a short time after a bee would be there at it. I never knew them to touch a sound berry. We find that bees effect the fertilization of plants by carrying the pollen on their legs, and this is a very important office. We sometimes hear people speak of grand varieties being produced by accidental seedlings; but I believe these are produced mainly through the agency of bees.

CLEMATIS.

Mr. WELLINGTON.—The Clematis is one of the finest of all climbing shrubs. It is hardy and beautiful. It will grow in almost any soil, but prefers a rich loam. As with all perpetual or free blooming plants, if you would obtain good results, you must give it plenty of food to live upon. For that reason I would always mulch freely in the spring and autumn. Neither is it amiss to feed it with liquid manure during the summer. For position in the garden it will fill almost any place. It is good for a rockery, it is good for a wall, it is good to cover any unsightly object. The masses of purple, white, mauve and blue are colours which will certainly strike the eye, and add to the appearance of any garden. In regard to keeping in the winter, I would say that in order to get the best results from any perpetual blooming plant I would leave from two to three feet of old wood. This I would lay down and cover with a board and throw a little soil over it. This was all I found necessary in the most inclement winter. By taking this course you get in the following year more new wood from the old, and obtain more bloom. Now, as to varieties there are three classes, but I will merely mention those I consider best. If I were to be confined to one variety I should select Jackmanni, as that has remained at the head of the list for over twenty years. It has a purple flower, and can always be depended upon. It flowers from July to October. It is perpetual if you will only give it plenty of food. This Jackmanni and Prince of Wales are the best of the purples. In whites, Henryi is one of the best, and flowers from July to October. The best of the whites I consider is Languinosa nivea, and in the blues Modesta. Then there is the Lady Boville and the Gem, a lavender blue, flowering from June to October. The next two classes are those that flower from old wood, and the thin skinned class. Of the latter class I would mention two varieties. The Fair Rosamond has a whitish blue cast, and flowers about the last of June or July. Then the Duke of Norfolk, a deep mauve with a pale bar running through the centre of the flower. There is also another class which is double. Of these the best is the Duchess of Edinburgh. The Countess of Lovelace is also a beautiful variety. To parties wishing a small collection I would recommend these varieties beyond all others. There are many other varieties equally desirable, but for amateurs it is not desirable to extend the list. There are two other varieties that should be in every collection; they are Virginiana, which belongs to the second class I named; and the other Flammula, which is fragrant.

STRAWBERRIES.

Mr. JOHN LITTLE.—There is a difference of opinion with regard to which is the best variety. If you take a dozen men out of this assembly each one will say he has it. They say there is none other like the Wilson, Crescent, Daniel Boone, and so on. To get the best result from any variety you must give it all it will eat and drink. I have put down a number here, and the first is the Crescent seedling, which is an early plant. The only plant that should fructify it is the Duncan. Some will tell you to do it with the James Vick, but what is the use of getting a strawberry that will not blossom within eight or ten days of the one you wish to fructify. A man who engages in growing strawberries must be an enthusiast. The James Vick will do very well with the Manchester, Grand Duke, Windsor Chief and Glendale. There is one variety I choose above all, and that is Cumberland Triumph. I have had it in the same row for six years, and I expect as good fruit as ever next year. The day was when the Wilson occupied a leading place, and Hovey's seedling was the only one that compared with it; but we have better berries now. The Daniel Boone bears more fruit and of a better quality. It is the seedling of A. D. Wells, of Kentucky, introduced by Matthew Crawford, of Ohio. The Mrs. Garfield I admire. It is an abundant bearer, and will please the most fastidious taste. The old Ironclad is a fine fruit and a fine plant, and I admire the Hervey, brought out by John Moore, of Massachusetts. It is about the size of the Wilson. The Bella, named after Mr. Moore's daughter, lacks flavour. The Glendale was got near Akron, Ohio, and I have seen single plants that a half bushel measure would not go over; but there is one great drawback, it loses its colour. The Kentucky was considered good, but it wants to be

gathered before it is ripe or else it will get pale. It has a good flavour. The Cornelia has sold as high as one dollar per plant, and still one man here bought sixty, and another two hundred.

FLOWERING BULBS.

Mr. SAUNDERS.—I wish to draw your attention to two or three classes worthy of attention. I shall not refer to some of the ordinary bulbs, such as Snowdrops and Crocus, of which there are some hundred varieties; but to Narcissus, a class of bulbs which have of late been immensely improved, and of which there are now some two hundred named varieties. These have been improved by what is known as cross-fertilization. You are all familiar with the poet's Narcissus, with a pretty little deep yellow cup, and so fragrant. That centre is called the Perianth. The new varieties have this Perianth much elongated, and very beautiful in form. There are all colours, from pure white to cream white; from pale primrose yellow to golden. Some are white on the outside and golden in the centre. I think this class of bulbs should be better known, for in our gardens very few of us have more than the ordinary Narcissus Poeticus. At a recent show in New York some two hundred varieties were exhibited. I shall not detain you with an account of the tulips, but pass on to speak of bulbous Irises or flags. These are grown in many varieties. We have the English Irises, which really are from Spain, and which flower with the first opening of spring and remain until the middle of summer. Then come a hundred other varieties of the Iris from various parts of the world, which continue to bloom until Christmas. From Japan we have a class of Iris of most beautiful and showy colours, which rival the finest Orchids in tints. These are known as Iris Kempferi, and there are fifty varieties of them. The longer one lives the more there seems to be to learn, and the amount you don't know so much exceeds what you do that the latter seems insignificant. There is another class of plants that are very beautiful, and that is the Squills. These begin with the opening of spring, and send up a tiny cluster of blue flowers, and other varieties will fill out the summer. There are the Peruvian Squills and the Siberian Squills, the latter being very hardy and beautiful. I would just refer to one other species, and that can scarcely be called a bulb, but is a tuberous rooted plant called Anemone fulgens. You may have read references to this flower by travellers in Palestine, and when in bloom it is a sight not easily forgotten.

RASPBERRIES.

Mr. A. M. SMITH dealt with this subject chiefly in an entertaining way, that seemed to strike a popular chord in the audience. He spoke briefly, in closing, of a few leading varieties, and maintained to the end the humorous strain in which he began.

BEDDING PLANTS AND ANNUALS.

Owing to the lateness of the hour, Mr. Wright did not take up this subject in a serious mood, but excused himself in a few pointed sentences.

CLOSING.

During the evening excellent vocal music was rendered under the direction of Mr. W. J. Birks, by Messrs. Saunders brothers, Hook and Lewis.

The customary votes of thanks closed an exceedingly pleasant session.

SUMMER MEETING.

The summer meeting of the Ontario Fruit Growers' Association was held in Uxbridge, on Wednesday and Thursday, the 24th and 25th of June. At the opening session the minutes of the previous meeting were read and adopted.

Reeve Herman, on behalf of the Corporation, presented an address, to which President Saunders replied, taking occasion to fully explain the objects of the Association, and the various matters over which its discussions extended.

Dr. Black and Dr. Bascom, on behalf of the village, also made speeches in laudation of the work being effected by the Association.

The discussion of the subjects on the programme was then begun.

STRAWBERRIES.

Best variety for home use.—Best for shipping and market.—Which is the best method of cultivation for small or large growers, hills or rows?—What is the best distance to set the plants apart in rows?—How far should rows be apart?—Are there too many grown for the market?—What is the best sized package for crates? for berry boxes?

Mr. P. C. DEMPSEY (of Albury).—The first question I would not care to have anything to do with, from the fact that we who grow for the market are obliged to eat only what we cannot sell. We find there are several varieties that ship well, but our object is to get the greatest quantity of strawberries at the least expense, in order that we may compete with other growers. In this respect we find the profit is nearly all in two varieties—the Wilson and Crescent seedling. The latter affords us the larger amount of berries. They are brighter in colour, and more uniform in size. With respect to cultivation, we cultivate in rows; not as some do, in such broad rows, but generally in narrow ones, nine or ten inches wide. That is broad enough for strawberries. We generally find the finest and largest berries near the cultivated sides, while the smaller ones are to be found in the centre. For this reason I grow in narrow rows, and find I can produce as many berries as in the wide ones.

Mr. BUCKE.—How wide apart?

Mr. DEMPSEY.—Three feet apart. The row is about one foot wide, and with it about four feet are occupied. We try to have three feet of cultivated soil in the summer, but at this season of the year only about two feet, from the fact that the foliage extends six inches on each side. As to the danger of over production, I do not think we will ever see the day in Canada when we will have too much good fruit. With inferior fruit it is quite an easy matter to overstock the market; but I have never yet seen the day when good strawberries, nicely gotten up, would not find a ready sale, even in local markets where the demand is not large. Persons living in the interior of our country have very little idea of the amount of strawberries that are consumed in the large centres. Montrea is supplied by many towns along the line, and several of them now have got so as to ship them by the carload. In our own little town we send two carloads a week, besides, every alternate night we send by express all they will take.

The PRESIDENT.—How many quarts will a car hold?

Mr. DEMPSEY.—About ten tons. The berries will go about two pounds to the quart, which would make about ten thousand quarts to each car. I know, however, that more than that number are often sent, as we have had five thousand quarts in ourselves, and only occupied about a quarter of the space. With respect to crates, I may say that we first began to use large crates, thinking that the weight was of little consequence; but now we have got down to thirty-six quarts, and we find that they are less liable to be pitched about and up-ended. They weigh about sixty pounds when full, and a man can carry them and set them where he likes.

Mr. BEALL (of Lindsay).—Nothing has paid us so well as the Wilson strawberry, but lately I have been using the Crescent seedling. I had heard that the only time to plant strawberries was in the spring of the year; but after studying the matter carefully I have come to the conclusion that it may be best for those who have plants to sell, but for the man who wishes to grow them, I would say never plant in the spring. If you have to pay ten times the price get them in the fall, and plant them as early as the ground will permit. They will grow better, and you will have better plants a year ahead. If you had put in plants this spring they would be poor miserable things all this summer, and you get no result in appearance. The amateur wants to be paid as he goes along. We want to see a healthy-looking plant. If you plant in the fall, however, the spring finds you with fine healthy plants and a fair crop of berries. My neighbours are now nearly all planting in the fall, and we succeed a great deal better than heretofore. The Crescent seedling is being planted, and I think it may replace the Wilson, but it will be sometime.

Mr. DEMPSEY—Let each man speaking on this topic tell us what kind of soil he has.

Mr. BEALL.—I call mine a clay loam, but it is a little more clay than loam.

Mr. J. C. CUMMER (of Uxbridge).—As to variety, we have raised the Wilson principally, but on a small scale. With me they are doing exceedingly well; but I find from the discussion that I have planted the rows too closely together. I listened with interest to the last speaker's remarks on fall planting, and I should think it might do well except where early frosts come and the plants had not become well rooted. My soil is a clay loam, rather light on the top and inclined to be a little gravelly. I planted a few Manchester last year, and they are doing well. They stood the winter, and are just now loaded with berries.

Dr. BASCOM (of Uxbridge).—I have grown a few strawberries for a number of years, at least I have tried to, but have not succeeded very well. I set out some eight or ten different kinds, and, as near as I can recollect, the Cumberland Triumph did the best. Taken all round, however, I think no other berry has succeeded so well as the Wilson. The soil in this locality is a sandy loam, and with me the Wilson bears better than the Crescent Seedling.

The PRESIDENT.—Have you tried any of the varieties of more recent introduction, such as the Daniel Boone or Bidwell?

Dr. BASCOM.—I have tried the Bidwell, but it did not do much with me. I also tried the Sharpless, and it did not do very well last year, but is looking better this season. I have the James Vick, but having just set them out I cannot say what success they will show. As to quality I like the Crescent best. I have the Charles Downing, which did very well last year, but from some cause is not succeeding this year. I know that one cause may be the white grub which gets in at the roots, my ground being heavily manured. I find that my plants which look very well in the spring, soon begin to die and bear no fruit. So far as spring and fall planting is concerned, I have equal success with either. If you can get your plants in during the latter part of August or early part of September, there seems to be no doubt that you will have more fruit the next year. I have done so by transplanting the runners. Raspberries do much better by planting in the spring, but for late planting I would still prefer the spring to the fall.

A. M. SMITH (of St. Catharines).—I have here, for your inspection, five or six varieties out of thirty or forty that I cultivate. For home use I have nothing any earlier than Early Canada. The Crystal City is about the same time, and most people would perhaps like the flavour better, but it is a very shy bearer. For an early variety, the Early Canada is about as good as any for the amateur or the market, although I am sorry to say it does not succeed in every locality. Where you have late frosts you are likely to lose your fruit. On the lake shore where frosts hold off we get the Early Canada a week earlier than the Wilson. For my own eating I know of nothing better than the Mary Fletcher. The quality is equal to most anything, but it is a medium bearer. Every year brings out a great many new varieties that are better than anything else, according to the word of the persons who have the plants for sale. The Atlantic, you may see here, which is the first I have ever grown. I do not know what the quality is. The Sharpless would satisfy most amateurs for size and productiveness.

Dr. BASCOM.—How does it do on a very light soil?

Mr. SMITH.—I cannot say, as I have grown mine on a clay loam. I have seen them grown on gravelly soil, and they were very fine.

Mr. P. E. BUCKE (of Ottawa).—I think the New Dominion has been as successful in Ottawa as anything we have had. I think it is one of the best bearers, and is as fine a berry as anyone that has come out. It is now some seven or eight years since it was introduced. The best time to put out strawberries is July, when the runners take root. Take a moist, damp time, or lay a few twelve-foot boards over them until they take root.

Mr. MORRIS (of Fonthill).—I agree with Mr. Dempsey in regard to general cultivation and varieties—the Wilson, Crescent and Manchester. I would put the Crescent first, the Wilson next and then the Manchester. There are many other fancy varieties—as Mr. Beall says he has the Sharpless—which hardly pay to raise, even for the amateur. You do not get enough of them. I would disagree with Mr. Beall about the time of planting. It might do with him where there is plenty of snow to protect them, but the chances are that with us the bulk of the plants would be found on top of the ground in the spring. I think many strawberry growers do not want their plants to bear the first year, whether planted in the fall or in the spring. If planted in the fall the few berries that would be grown would be sure to be sandy and gritty. Our mode is to take off the blossoms and not allow them to bear, and by fall you have a good stand of plants that will give a good crop the following season. I do not think we are making the progress in varieties that some seem to think. I think the Manchester is one of the best we have, and for some years after it came out, it was claimed that it was the old Hovey. If there has been so little change in that time it shows that we are making slow progress in varieties; for the Hovey has been out for forty years.

The PRESIDENT.—I disagree with Mr. Morris. I believe we are increasing in varieties very fast.

Mr. HILBORN (of Arkona).—I have a great many varieties, but it is pretty hard to tell which are the best, and the more varieties I get the harder it is to tell. There are few ahead of the Manchester in the matter of profit either for market or home use. I have made the most money out of the Crescent for market. I last year fruited the Daniel Boone and was very much pleased with it. The quality of the fruit was very good—ahead of the Manchester to my taste—and a sample of the fruit would average larger than any other variety. The time of ripening is a little ahead of the Manchester, so that both varieties would be required. It comes between the Crescent and Manchester. The Cumberland Triumph that has been mentioned is also a splendid variety for the amateur, as it will continue in the same bed along with any other variety and gives a good quantity. I have grown the Atlantic, which only came out last year, but it is a little too early to say much about it. The fruit I had last year was only grown on spring-set plants. There is only one other variety that has come through the winter as well as the Atlantic: the Connecticut Queen. The Atlantic shows a good deal of fruit this year, and if it only brings them up to the size of those on the table it will be a very valuable variety. The old Ironclad is showing very well for an early berry, particularly for the amateur. I do not think it is very good for the market as it does not hold itself high enough off the ground. It is good in colour, and is several days earlier than the Crescent; in fact fully as early as Early Canada. The Sharpless is of no value to me. I have the first crop that could be called a crop this year. I grow my strawberries in furrow rows.

Mr. BEADLE.—Have you tried hills?

Mr. HILBORN.—Yes; but I like narrow rows the best. I have about half an acre of Daniel Boone this year, but there was not a ripe berry on them when I left home, while the Early Canadas have been ripe over a week. The James Vick are scarcely half grown yet, and seem to be very productive. Two of Arnolds' Seedlings, Maggie and Bright Ida, are showing up the best of any two varieties we have. They both show a large quantity of fruit, and are getting to be a large size.

Mr. MORRIS.—The Ironclad spoken of by Mr. Hilborn ripened with us first this year, but I consider it of inferior quality. It is not as good as the Crescent. The Early Canada I have not seen good yet. After the first picking it is no good.

Dr. Cross (of St. Catharines).—Talking about the old Hovey, I think it is as good a berry as any. The Crescent and Wilson I have cultivated. My soil is hard. I have frequently tried planting in the fall, but have not succeeded. I do not know whether it is best to plant before the plants have grown a little in the spring or not. As to varieties I can say but little ; but the Sharpless which I have cultivated has not had enough taste for me.

Mr. Miller (of Uxbridge).—I am troubled a little with winter-killing, and I should like to know if any gentleman can suggest a remedy. I should also like to know how long it is best to let beds remain. Is it best to cut off runners or thin out the rows.

Mr. Beadle.—In regard to winter-killing, I have found a light covering of straw in the autumn sufficient protection. I say a light covering, and I want to call attention to that expression. I once gave my plants too much covering and smothered them. So light that you can see the leaves through the straw answers in our climate. Here you get more snow and it lies more continuously. Our trouble is the snow disappearing rapidly, followed by freezing. I know the difficulty with this straw ; you get seeds in your bed you wish were not there ; but I nevertheless prefer good clean wheat straw. I have used oat straw, and some of my friends have tried pea straw, which is less likely to be covered with seeds. As to how long it is profitable to let the beds remain, I cannot answer that. I have never grown strawberries for profit. I find after the second crop that it is very convenient for me to plow them under, and I think it would be more profitable. If you are growing the Sharpless or some others like it and do not cut off the runners, you will not have any berries worth talking about. If you feed your plants well and look after them you will get fine large showy berries. To my taste there is no berry equal to a thoroughly ripened Wilson.

Mr. Dempsey.—As to how long it is profitable to grow a bed of strawberries, I may say that we very seldom get more than one crop. I have taken second crops off that were the best we ever got ; but the way we got it was by applying half a ton to the acre of superphosphate, or bone-dust, and working it up very much. I applied it in the fall. We do not protect our plants any except by the snow. We cultivate one good year, and cut off the runners and do not allow them to spread too far. Then after picking one good crop, the second year after planting, we plough them under. We plant in the spring when we can, nevertheless I have seen some fine plants that were set out last fall on Mr. Beall's ground. We have set some in the fall that gave good satisfaction, but there was plenty of snow to protect them. The plant must get thoroughly established in the ground, or the roots will heave out in the spring.

Mr. Morris.—My soil is a mixture of clay and loam. As a rule I find it best to bear two crops. If the plants bear a poor crop the first year they are sure to bear well the next year and the quality is better.

Mr. Goldie.—In planting on a large scale, what system is adopted in putting in the plants?

Mr. Dempsey.—First, we take a marker, and with a horse mark out the proper distances. Then, with a narrow plow, we run a light furrow, so that those who are engaged in planting may set them with their hands in the fresh turned earth.

Mr. Miller (of Uxbridge).—My soil is hard-pan bottom, and they seem to winter-kill with me. I have had several varieties, of which the Wilson succeeded best.

Mr. John Little (of Fish Creek).—Mr. Dempsey would be a father to me in planting and marketing; but I should never begin to grow berries if I could not grow more than one crop. I ought to take three. I have part of a row of Cumberland Triumphs that have been fruited six years, and are as good to-day as when I planted them. I think others would do as well if properly cared for.

Mr. Dempsey.—Which would you think the better, to straighten up an old bed or start a new one?

Mr. John Little (of Fish Creek).—I would rather straighten up an old one, except where it has run down very much. If, however, you want to do away with them at one picking, let the runners go into the rows and then take away your old plants. A man who is growing for the market, or for home use, wants to make all he can out of his plants. I have not fruited the Garretson yet, but it is a very good plant and promises

well. The Connecticut Queen is the most promising plant I have in my garden. The Atlantic, I think, will be profitable and saleable. The Legal Tender is not what it was said to be. The Howell, from Tennessee, is very promising, being large and well-flavoured. The Princess is like all Durand's Seedlings, well puffed up, without being equal to the praise bestowed upon it. The Daniel Boone is all Mr. Hillborn has said about it. There is little, if anything, to compete with it. The Grand Duke is another new one, and is especially choice for eating purposes. The Old Ironclad I prefer to the Wilson. It is a good plant, and you never saw a berry off the Wilson grow as large as it does. Any man who wanted it for his family, and were not too particular about the flavour, would certainly have the full of his mouth with one of them. Arnold's Pride, Maggie and Bright Ida, are very good. The Bell is good and large. The James Vick is a famous plant, and was all the go at one time, but I do not care about eating it. The Mary Fletcher is a fine tasting berry. The Seneca Queen cannot be beaten in size, although it is not very shapely. The Sucker State is nothing but the Cumberland Triumph. The Crescent I would rather have than any of them for profit and flavour. The Glendale is good, but it gets dull so quickly; but no other berry will can as well.

The PRESIDENT.—If you were obliged to reduce that list to a choice of three or four, what ones would you take?

Mr. LITTLE.—Cumberland Triumph for one, Windsor Chief for another, and Mary Fletcher for home use. For selling, I would use the Crescent. A dozen men going into the market will pass by the small berries, although of superior quality, and select large ones. Regarding the mulching of berries, you must put it on after the frost has come. I should not plant in the fall, but in the spring. Plant them early, give them a covering and keep off the runners, and you will have as fine berries as any that have been planted in the fall.

Mr. A. A. WRIGHT (of Renfrew).—My soil is heavy clay, and the only way I can make it pliable is by mixing a lot of muck with it. The best strawberries that I have been able to grow were Wilson's Albany. The Sharpless has grown very well, some seasons, on the hill system. The berries are large, but the points are always white. The Triumph de Gand has also done well, but nothing has equalled the Wilson. With regard to protection, there is a difference of opinion. You must protect them in seasons when hard frost comes before the snow, more than in seasons when you have plenty of snow early. I agree with Mr. Little, that you must protect them after the ground is frozen. Wheat straw is best. You cannot spread pea straw that has been spoken of. I saw two really fine patches yesterday, one with Mr. Beall, in Lindsay, which had been planted in the fall. I have had no experience myself, except in spring planting.

Mr. LITTLE.—I never mulched but once in my life, and then I was sorry for it. I got more weeds than I could take out, and so I plowed the whole thing under. It is there that the vitality of the plant is to be seen. It was Arnold's Pride that were killed.

Reeve HARMAN.—Is sawdust good as a mulching?

Mr. LITTLE.—If you can get it rotted, it will act not only as a mulching, but also as a manure, and you get no weeds. I would not, however, cover the plants themselves with sawdust. I am greatly in favour of wood ashes, either leached or unleached. I have never tried coal ashes.

Mr. JOHN CROIL (of Aultsville).—You have already had the opinions of the greatest strawberry growers amongst us. There seems to be some difference of opinion as to the length of time a bed should be continued. Mulching, I think, makes the main difference, and I cannot see why, where mulching is not used, you should not continue your beds for two or three years. In mulching, you cannot avoid seeds, and that is what causes the trouble. In regard to the time of planting, I think the spring is the best. I fancied at one time that fall planting was the best, and followed it for two or three years. For a time I had good luck, and then when a dry season came I had not a plant left to tell the tale. I never failed in the spring. In the matter of kinds, I may say that the Early Canada has done remarkably well with us for earliness; but when you have spoken about its earliness and productiveness, you have mentioned all its qualities worth speaking of. It is very hardy, and, being a week earlier than any other, generally brings good prices.

Mr. HILBORN (of Arkona).—I would like to say a word about mulching. I mulch as much as I can, and use wheat straw for a winter covering as soon as the ground is frozen. The plan I find to succeed best is to put it between the rows and very little on the plant. I find that where I do not mulch, the fruit is apt to get very gritty.

Mr. WRIGHT.—I put but little on the plants themselves.

Mr. A. M. SMITH.—In localities where you can get them, evergreen brush of any kind, cedar or pine, is an excellent mulching, and is, of course, free from weeds. I have also used corn stalks. When it can be gotten, swamp hay also answers very well. I have not used tan bark.

Mr. MACD. ALLEN (of Goderich).—I never grow for the market, but I have had a good deal of satisfaction out of Arnold's 23, his pride. As a table berry it is delicious. I like the Manchester. I must agree with the Secretary in regard to the Wilson; for when I want a plate of strawberries that I know is genuine, I take the Wilson when it is really ripe. I think, however, that growers are going in more for the Crescent for profit. My soil is a light loam.

Mr. BODWELL (of Ingersoll).—I prefer the Wilson and Crescent. We have tried mulching with wheat straw with good effect. We spread it over the whole ground, covering the plants lightly, and raking it off in the spring.

Col. MAGILL (of Oshawa).—My experience has been related by one or two others. I grow some eight or ten varieties, two of which are on the table. I have a fine show of Vick, Capt. Jack and Col. Cheney; but my own idea is that the Wilson is the best. I have mulched with evergreens, which are free from weeds, or some of the common flags that grow in the swails, or corn stalks. I have used wheat straw, but there are always some foul seeds with it. I have nothing so prolific as the Crescent and Vick.

Mr. DEMPSEY.—I wish to correct a misunderstanding that has taken place over my remarks. Some of the gentlemen have understood me to say that it is not possible to grow more than one crop. It is purely a matter of finance, when I am growing strawberries. They may be kept growing for any length of time you like, simply by cutting them down with a narrow plough and leaving new plants. I fail, however, to see much difference between that and setting out new plants. With us, we are sometimes bothered with the white grub at the roots, but we find we can get off one good crop before the grubs amount to much, and then we set out new rows. So there are various reasons why we prefer the one crop system.

Mr. CLENDINNING (of Manilla).—I grow some five or six varieties for home use. I have the James Vick, Sharpless, Manchester, Crescent, Bidwell and Wilson. From the experiences I have heard here, the Crescent seems to be the favourite. There is, however, one difficulty with me. They seem to summer kill after they have been set out. They bear well, and we like them middling. The soil is a clay loam underlaid with gravel. The Manchester is growing finely this year and promises a good crop; but last year we had very few, on account of the frost which killed the blossoms. It is one of our finest berries, and is liked very well for canning purposes, on account of its tart taste. I have the Bidwell, as well, and it does very nicely. On the whole, however, if I were going to be confined to one berry I believe I would take the Wilson, and have it thoroughly ripe.

Mr. HILBORN (of Uxbridge).—I may say that in this section of the country, attention to strawberry growing has only begun to be agitated. It had been supposed that the country was too cold for successful culture, and only a few in the gardens had been tried; but now quite a number are going into it, and our market is pretty well supplied. I have done nothing more than to cultivate a few for my own use, and I have found the Wilson to do very nicely if they are given plenty of care. I should like to ask a question. Is it better to raise the hill above the ground or keep it pretty well on the level? There seems to be some difference of opinion among our people on that point. I should also like to know if any gentleman could enlighten us on any mode or aid for ripening at a time of drouth; for we know strawberries require a large amount of moisture. Another question is this:—Can you give any information as to runner setting? Some have said it is the best way of resetting plants.

Mr. HILBORN (of Arkona).—The only plan in case of drouth would be to have the soil pretty well worked up in the spring—that is early in the spring—and mulch it to

hold the moisture, and allow the mulch to remain. We always do that until the crop is off. I have never found much difficulty about drouth, because I have followed that plan. Wherever they have been mulched, however, we have felt a difficulty in not being able to use the cultivator. You cannot mulch and keep the weeds down, unless you get marsh hay or something that has no seeds in it. With regard to the hills, the plan adopted by almost all fruit-growers is to keep them on a level. If they are raised, the dry weather affects them very quickly ; should it be a wet season, however, it would be all right. All large growers practice growing on the level. If it is not dry enough to admit of that, you must underdrain. As to runner setting, I think that is the best way for amateur growing. Have the strip clean, by turning the runners under.

Mr. LITTLE.—If they do not set them till the blossom stem appears, it may save a good deal of trouble to know that the runner will follow the side that the blossom is on.

Mr. BEADLE.—I was going to ask Mr. Hilborn, of Uxbridge, if he has trouble with the ground being too wet in the spring. If you have a possible outlet, underdrain your ground. By this ridge system you get them out of the wet, and it is all very well until the drouth sets in and then your plants suffer. Mulching them as Mr. Hilborn, of Arkona explains, will help you. Another plan is to keep your ground rich. The idea at one time, was to starve your plants. I have now found out that to be a mistake. I can get more fruit, and better, from ground that is rich.

Mr. HILBORN (of Uxbridge).—I was visiting some friends near Oakville, and I found some of them had ridges raised very high, while others were on the level. I thought from representatives of various parts of the Province, I should probably learn the better mode.

The Association then adjourned until two o'clock in the afternoon.

On the reassembling of the Association in the afternoon, the Question Box was discussed.

DROOPING FUSCHIA.

QUESTION.—Is there any fuschia of a drooping habit, suitable for hanging baskets?

The SECRETARY.—There is one at least, and I have been trying to think of its name but cannot. It has a very small flower.

THE DUTCH HOE.

QUESTION.—Is there any better implement than the Dutch hoe for cutting down weeds in the garden?

Mr. CROIL.—No sir, I do not think there is any implement that comes up to the Dutch hoe for cutting down weeds. I think I have heard the Secretary say he could do as much with a rake ; but I could not. A man can go over a large amount of ground with a hoe eight or nine inches wide. (The Hazeltine hoe was then described.)

Mr. GOLDIE (of Guelph).—I asked that question for the reason that if we have anything in drills it takes a good while to go over them. I remember a small cultivator years ago, made in the form of a common scuttle drill for turnips, and it did very well. Has anyone used any of the wheel hoes?

Mr. CROIL.—I bought one last year and I would not take the work of my flat hoe for it. On very light soil it works very well, but on clay it does not work at all.

Dr. CROSS (of St. Catharines).—While plants are very young, and you cannot disturb the ground very much, it is a good plan to rake it with a fine rake. After that it is a good thing to run a hand cultivator through it. I added to that a plough share that worked well.

THE CABBAGE FLY.

QUESTION.—Is there any way of checking the ravages of the cabbage fly, which can be used by the market gardener to lessen the mischief of these insects, and do it economically?

Mr. BEADLE.—Prof. Cook has recommended the making of a strong soap suds and kerosene into an emulsion, and putting about a teaspoonful at the roots of each plant. The market gardener says, that is all very well for you, but what are you going to do with two or three acres of plants?

The PRESIDENT.—I am afraid that there is nothing that will answer that purpose only as the Secretary has put it. Last winter I heard Prof. Cook at the meeting of the Michigan State Society, and he has experimented chiefly with bi-sulphide of carbon and this emulsion. The coal oil is supposed to be the principle agent in deterring the insect from laying its eggs. The little fly appears very early in the spring and lays its eggs on the tender sprouts of the cabbage. These hatch and burrow into the interior of the cabbage. They have been very troublesome in our section of the country, and of my own plants my man tells me he has only about forty or fifty left. This emulsion, as I understood Prof. Cook, was used in the form of a liquid and syringed on the young plants. He also syringed the plants in the frame so as to deter the insects from depositing their eggs on them there. It is a trouble they have had in Europe ever since cabbage planting became common; but no very satisfactory results in the direction of a remedy have yet been obtained. There is no doubt, however, that insects are deterred from visiting plants or trees that are charged with an odour that is offensive to them; and by mixing coal oil with sand and throwing it around where your cabbage plants are you can keep the cut worm off very well. It is possible that this same odour may be beneficial in the case of the cabbage worm; but no positive remedy exists as yet. The kerosene may be emulsified with soap or mixed with equal parts of milk to form a sort of butter which may afterwards be mixed with water and applied with a syringe to any growing plants. That will prevent large numbers of insects from visiting those plants. We have no direct experiments beyond those of Prof. Cook's where it has been specially applied for this fly. I do not think that after the plants are planted out in a patch there is any remedy which can be economically applied. Bi-sulphide of carbon will kill the worms by putting a teaspoonful in the ground at each plant, as the soil absorbs it, and it is fatal to insect life. It is not a desirable remedy on account of its inflammable character and expensiveness.

Mr. WRIGHT.—How long does it take for these eggs to change into the worm?

The PRESIDENT.—The eggs of insects of that species usually hatch in three or four days. The egg is not so easily attacked as young larvae just being hatched. When the eggs are once deposited they are of that tenacious character that it is not easy to reach them with a remedy. The eggs of many insects will bear a temperature of thirty below zero, and come out all right at the end of winter. They are endowed with great vitality.

Mr. GOLDIE.—By dipping the root into that emulsion would that do?

The PRESIDENT.—I have no doubt that it would be a benefit, providing the larvæ had not already entered the inside of the plant.

Mr. WRIGHT.—I have had a great deal of trouble with these worms, and it occurred to me that if these emulsions were applied from time to time it would prevent the larvæ from getting into the plant.

The PRESIDENT.—That was the point I wished to impress, that prevention is better than cure.

Dr. CROSS.—I have tried several experiments with these worms. Twenty years ago I heard that soot put on the plants prevented these worms or insects, and I tried it; but the plants turned blue and died. I then tried bi-sulphide of carbon, but I do not know which died first, the plants or the grubs.

Mr. DEMPSEY.—I saw in some American journal, that by mixing carbolic acid with glycerine, and then reducing with water and dipping the roots of the plants into it, that it would destroy both the worms and the eggs. I have no experience, however. A number of years ago we were bothered considerably, and we used to make a strong brine of salt and dip the roots into it. We found that we lost very few plants after doing that. It is some years since we have grown cabbages, but we were very successful with that plan.

THE CUT WORM.

QUESTION.—Can the cut worm be kept under control by the application of salt or otherwise?

The PRESIDENT.—I have said that an efficient protection is provided by coal oil mixed with sand and sprinkled around.

Mr. BEADLE.—The only plan that I have known to be successful, is to get small sheet iron hoops and put them around the plants you want to save. Press them into the soil about an inch, and if the worms are not inside already they will not cross this iron hoop.

Mr. CROIL.—I can vouch for Mr. Beadle's recipe being effective; but I use little zinc or tin hoops and find them to answer very well.

Mr. SMITH.—I have seen brown paper used.

Mr. DEMPSEY.—We have been bothered with cut worms on the melons sometimes. We can always tell of their presence when the melons come up, by the removal of a few plants, and we simply dust a little sulphur or Paris green about. It destroys them and also the yellow fly, and we never see them again. When we find a patch infested with these worms we simply cut a few cabbage leaves and saturate them with a solution of Paris green, and in the morning you will find the cut worms dead. Salt does not affect them. I have seen them enjoying themselves in a dish of it.

The PRESIDENT.—I do not think the cut worm in his travels would willingly go over salt.

NEW STRAWBERRY INSECT.

QUESTION.—Has anyone had any experience with the new strawberry insect that has lately made its appearance on Staten Island, N.Y.?

Mr. BEADLE.—I presume this refers to a little insect of the curculio family which has appeared in Staten Island and elsewhere—I think in Canada, too—and which is showing itself in a peculiar way on our strawberry plants. He seems to think it would be a very nice thing to destroy the whole strawberry plant without doing himself any special benefit. He punctures it just below where the blossoms come out, and the result is that the stalk breaks off and no fruit is borne. He then goes on to another; but unless it is the cussedness that is in the fellow, I cannot see why he does it.

Mr. LITTLE.—It is very prevalent in Michigan and Ohio; but it does not affect the Crescent, because it has no room to work.

The PRESIDENT.—The United States Government have sent a special Commission to Staten Island to look after this insect. The morning before I came away, I received a package from a gentleman in Barrie, with the intimation that an insect had appeared there and was preying upon his strawberries. On opening the package I found that it was this particular insect. I have some of them here. It is a very small curculio which has the habit of puncturing the stem. Mr. Morgan also sends a bunch of stems to show how it is done. How this difficulty is going to be met I do not see yet. Of course we do not know the history of this insect. We have to get its larval history before we can arrive at a remedy. It is a little uncertain whether it affects more than the stalk.

Mr. SMITH.—I was in the States a short time ago and saw that plants were drying up although they had rains. They called it a rust there.

ELM TREES AND GRAPEVINES.

QUESTION.—Is it wise to encourage the growth of elm trees in the vicinity of grapevines, where the insect commonly known as the grapevine flea beetle prevails?

The PRESIDENT.—The object of this question is to ascertain whether this little steel-blue flea beetle, which also feeds on elms, would be encouraged by the presence of those trees? I do not think it is common to have elm trees growing in vineyards; at least I never knew an instance of proximity.

Dr. CROSS.—I have those fleas among my grapes, but not particularly where the elms grow. I do not think they have any connection.

Mr. BEALL (of Lindsay).—I asked that question so as to have an expression of opinion as to this matter, whether it would be better to destroy elm trees near the vineyard, or save the trees and remove the vineyard. My idea was that it helped to increase the number of insects in the neighbourhood to have elm trees there. If the trees were destroyed would I have as many of these insects or not? They are certainly on the trees by the thousand and tens of thousands.

The PRESIDENT.—I never knew them to do any serious damage to elm trees.

This closed the list of questions.

FRUITS GENERALLY ABOUT UXBRIDGE.

Reeve HARMAN (of Uxbridge).—I cannot say that I am an experienced fruit-grower by any means. I have been but a short time engaged in farming, although I grew fruit in a small way in the garden. The object of this subject is to ascertain what kinds of fruits are generally raised in this section, and what varieties do best. I think as far as apples are concerned we have a very good country for them. I believe our apples are generally a success. Taking in the north and south parts of this county, I believe our apple culture is not to be exceeded in any similar section of the Province. Also if you go east into the Townships of Reach and Scugog you will find as good apples as can be grown anywhere. Along the south shores of Lake Simcoe is also a very fine section for apples and plums. Cherries, in this immediate vicinity, do very well, as far as I am aware of—the red and black varieties especially. Of course we are troubled with the black knot that not only destroys the cherry trees, but also the plums. The curculio also abounds. This, of course, is no fault of the soil or climate. I think, however, that the variety of fruit principally raised here, and for which this district is adapted, is berries. Raspberries, gooseberries and strawberries do well. Grapes are not a success. I believe the vines grow well enough, but early frosts catch the fruit before it gets thoroughly ripe. Then the winter is very severe, and unless great precautions are taken the vines winter-kill. I see that the black knot is mentioned in this list. We are troubled very much with that. Nearly all our plum trees are destroyed from that cause, and last year I had some very fine cherry trees that I cut down because I got disgusted with trying to keep them alive. They were good sized trees too. However, my wife said she was sorry to see me cutting down all the trees, and asked me to spare a few and cut off the limbs instead. I did so, and those trees are looking better, although there is black knot there still. I believe if a person took particular pains to keep cutting the black knot, it would disappear. (Mr. Harman here described a flourishing industry in the village in making strawberry boxes.) I cannot say as to the apple tree borer. Mr. Miller can give you information as to that. As to the varieties grown in this section, they are numerous. The Golden Russet is very popular. In winter apples the Baldwin, Northern Spy and Rhode Island Greening are grown. In fall apples there are the Fameuse and several other kinds that I cannot recollect the names of. The winter varieties take the lead. The St. Lawrence does very well. Pears do well in this section when once you have got the tree growing properly. I have seen as large pears exhibited here as anywhere, and in the eastern and southern parts of the riding they do exceedingly well. I have heard no complaint of the blight. The Bartlett and Flemish Beauty are popular varieties. In grapes, as I have said, there is not much done, but among those that are grown the Concord seems to take the lead.

Mr. DEMPSEY.—Is the Baldwin apple tree hardy here?

Mr. HARMAN.—I think so.

Mr. MACD. ALLEN.—Do you grow King of Tompkins County?

Mr. HARMAN.—Yes, a great many.

Mr. MACD. ALLEN.—Are you troubled with spots on the Greening?

Mr. HARMAN.—Yes, a little. The trees do not seem to do well here?

Mr. BUCKE.—Do the Fameuse spot?

Mr. HARMAN.—Yes, but I have seen some of the finest here.

Mr. MacD. Allen.—Do farmers trim their orchards and manure them regularly?

Mr. Harman.—I think there are a few who do; but as a general thing the orchards are neglected in that line.

Mr. Thompson (of Uxbridge).—As to the variety of plums grown here I may say that the Washington is popular, and so is the Lombard. Both do very well as far as I have seen.

Mr. Harman.—In relation to plums, I do not think the finer varieties are extensively grown. The common red plum seems to do the best of anything we can get. It is cultivated, and preserves very well.

Mr. Glendenning (of Manilla).—As you may be aware, apples are the principal fruit grown here, and we are most successful in that. I cultivate something over forty varieties; that is, of the regular grafted kinds, and saying nothing of some seedlings that I have. They were all doing well until this year, when I have discovered that the frost has injured some of them. The King and Baldwin have been injured most, and I am afraid that the latter will hardly recover, and the King is badly hurt. Grimes' Golden was also injured more or less. Many varieties considered half hardy have come through all right. The varieties that are chiefly cultivated for local use are the Northern Spy, the Golden Russet and the Wagner. Many of the newer varieties, the Wealthy, Wallbridge and Haas have also come through the winter without injury. In regard to the Baldwin, if it is one of the principal varieties here, it is not in our section of the county. I think I had the only tree in our neighbourhood, and it looks pretty sick just now, although growing in a sheltered location. The Astrachan and Duchess have done well, but the Tetofsky I consider one of the poorest we have. The Colvert is also one of our best apples. As to spotting, there are some years when a good deal of scab will appear, and the following year the same variety will be free. In 1883 the Wagener was useless, as you could not get a specimen that was fit to use, while last year you could scarcely find a scab. The same is true of the Fameuse. The Spitzenburg does not appear to be hardy enough. We plant our trees twenty-two feet apart, and the ones I speak of were in grass and top dressed from the second year. In regard to pears, we have not as large a list as Mr. Harman gives. We cannot grow the Bartlett more than one or two years after it has borne. We have only two on the list that are hardy, and they are the Flemish Beauty and Clapp's Favourite. I might say that there is no money made out of pears in our section, but Flemish Beauty would be the most profitable. I have reference to the growth and hardiness of the tree. We have grown the Duchess as a dwarf and a standard, but it has always killed back and died from the blight. I do not think pears will be a success here. Bearing trees are the exception, and where they do bear it will be of the two kinds I have mentioned. We grow a great many varieties of plums, but on the whole there is most money in the Yellow Magnum Bonum. It has never been affected by black knot. Another good tree is Pond's Seedling. All the common blue plums are troubled with the knot. I should like to ask if this black knot is the same on the cherry tree as the plum tree?

The President.—The black knot is the same, but the plum tree is most liable to its attacks. Some seasons it attacks even the cherry trees freely; and two summers ago, it was observed in many places where it had never been before.

Mr. Beadle.—What red plum did Mr. Harman speak of?

Mr. Glendenning.—I do not know. I have never seen it on exhibition. The pits are large, but the fruit is very sweet.

Mr. Bucke.—Is the planting of trees on the increase?

Mr. Glendenning.—Yes, the selling by agents has stimulated the planting, but I think on the whole it has done a great deal of harm. The stock has not turned out as ordered, and the prices have been exorbitant.

Mr. Glendenning.—We did not suffer much from freezing. We have a dry clay loam underlaid with gravel. In regard to grapes, I may say that all of mine are not in bearing. I have the Concord, Salem and Agawam. The Salem has not mildewed with me. The Brighton appears to be doing well. Last year was the first year we were affected by early frosts. Moore's Early is a poor grower, and the Champion is not planted much here.

Mr. BEALL.—That part is one of the highest in Ontario. It is twelve hundred feet above the level of Lake Ontario.

Col. MAGILL.—With reference to the black knot affecting the cherry trees, I may say that I have seen it quite frequently. We have, however, never had it in our section until about three years ago, and now it has destroyed about nine-tenths of the cherries. (The speaker then referred to the injury which agents do by misrepresentation). The grapes that I have seen on exhibition have been Rogers' Four and Fifteen, and Concord.

Mr. DEWHURST (of Uxbridge).—With regard to apple trees, I got some from Stone & Wellington, and they did splendid. I applied tanner's oil to some of them where the sun had affected them, but they died from the effects of it. I have grown the Downing gooseberry, and it is doing nicely. We have only grown the red plum spoken of by Mr. Harman. A fly appears on the plums, and stings the fruit in the bottom end.

The PRESIDENT.—It is the curculio.

Mr. MILLAR.—So much has been said that I concur in, and so much that I never heard before, that I do not know what to say. I live on Quaker Hill, a little way from here, and there we have any kind of soil within a radius of a few miles. I have tried hard to get an orchard. When I came here, nineteen years ago, I found my orchard composed of Tolman Sweets, and I took and grafted the leading varieties; but the apple borer had been industrious, and I lost all my trees. I have, however, set out a lot of new fruits, and they are doing well. My neighbour next me has excellent soil of gravel bottom and loam top, and he grows the very finest fruits—Holland Pippin, Baldwin, Northern Spy, and nearly all the varieties. I cannot, however, get the Baldwin to grow on my soil, and my neighbour on the next side of me cannot get an orchard to grow at all. Through observation, I think I can concur with what Mr. Glendenning has said. I would not advise the Baldwin or Greening to be planted. The curculio is so industrious that I cannot get much of a crop. All my plum trees were destroyed by the black knot, but I have replanted. I have not planted many grapes. I have tried the Champion, the Brighton and one other. I grow two kinds of pears, Flemish Beauty and Clapp's Favourite. They do well, and I get good crops. They do not blight.

Mr. DOUGLASS (of Manilla).—The Salem is the only grape that I grow, and I have had one good crop. In 1883 they mildewed, and in 1884 the spring frost bit them badly, and there is a poor show this year. I usually bend them down, and cover them with a board. The only pear I have really fruited has been the Vicar of Winkfield. The Flemish Beauty had a few blossoms on last year, but no fruit. I have a couple of other pear trees, but I do not know the names of them. In small fruits, we grow the common black currant and red currant.

Mr. MCGILLIVRAY (of Uxbridge).—I wish to remark with reference to this district, that we are not as successful in fruit-growing as they are south of what are called the ridges. Nevertheless, we are all buying trees largely. In my own garden, which is not very large, I have lost all my cherry trees within the last two years. I tried cutting off the black knot first, and last year I cut down the trees. The apple borer is very prevalent, and I have lost five trees this season. I took no measures to prevent it. I noticed that the trees had been barked first, but whether by the sun or not I cannot say. This red plum that has been referred to, is as large as our blue plum used to be. It is not quite as large as the Lombard; it is, however, fully as large as the blue plum, and may be found in nearly every garden in this vicinity. Where it came from, we do not know. In regard to a remedy for the curculio, we shall be glad to hear. Mr. Gordon, of Whitby, bores a hole in the tree, and after putting an iron into that hole he strikes it until the young curculios are shaken off. We do not grow grapes; for what reason I do not know. We have hardly any pears here, although in South Ontario there is not a better fruit-growing district in Canada, except it be the Niagara region.

Col. MAGILL (of Oshawa).—The reason I do not speak much of South Ontario is because I am a large exhibitor there. I never saw any finer fruit than came from Scugog last year. In gooseberries the Douglas, Downing, Smith's Improved and Houghton have done well here.

Mr. P. E. BUCKE (of Ottawa).—I am an amateur, as you know, and I have tried to cultivate a good many things, including the black knot. I got some trees from a gentle-

man in Aldboro', with black knot on them, and although it did not disappear from them, it did not spread to other trees. In grapes I should recommend these gentlemen to try Moore's Early, Rogers' 14, Worden and Brighton, and they will do well.

Mr. CUMMER (of Uxbridge).—For the last sixteen years I have been unable to cultivate the apple. I have tried to; so my experience is limited to small fruit, and in grapes I have only experimented a little. The vine sent me by the Association is doing well, and I think there is an increasing attention paid to fruit in this district.

Mr. WIDDIFIELD (of Uxbridge).—I have never engaged in fruit-growing on a large scale. A couple of years ago I planted out a young orchard, and it seems to be doing well. My cherry trees are all cut down, having been destroyed by the black knot. My plum and pear trees seem to be growing well, and that is as far as I dare speak at present.

The PRESIDENT.—The fact is clearly impressed on my mind, and the minds of other gentlemen here, as well, that you live in a district capable of very much improvement, and have not by any means arrived near the goal of perfection. Your motto should be "onward." You have good soil here for the cultivation of the apple, and there is no doubt that you can grow nearly all the varieties here. You do not need those kinds which gentlemen here have termed "ironclads." That applies to apples of Russian origin, and adapted to the colder sections of our country. When you can grow King of Tompkins and Golden Russet, and others, you need not look for these extra hardy kinds. What we want is the production of a fine quality of apples, so that the quantity for foreign shipment may be increased, and there is no doubt that you can succeed quite as well in small fruits as others do in other parts of Ontario. When I say the small fruits, I do not mean the tender varieties of blackberries; but take strawberries, raspberries, and some of the hardier varieties of blackberries. You have quite as good a climate as my friend Mr. Beall, of Lindsay, and he succeeds. Gooseberries and currants you can succeed with, and now that varieties of grapes are so numerous, there is plenty of scope for you to experiment. I have not a very large vineyard, and yet I have some 120 kinds. If you do not succeed with one variety, try another, and if you persevere you are sure to succeed. It was certainly unwise on your part to cut down the cherry trees instead of pruning them, and I would advise you to start to work and replant them. If a farmer has a bad year with midge in the wheat, he does not give up wheat growing, but sows again the next year. So should you in the matter of fruits. Try and try again. If one variety of pear does not succeed, you can find another that perhaps will, and I think you will find that the cultivation of fruit has an elevating effect on the cultivator himself. It is well on that score, to advise perseverance. With the plum, I am sure you can succeed. Of this plum that we have heard of, I hope you will send samples to the Chairman of our Fruit Committee in order that judgment may be passed upon it, and an opinion arrived at as to whether it is advisable to extend its cultivation. We have a gentleman here who has had great experience in shipping apples, and I want him to give you some advice as to the best varieties to cultivate for shipment. There is no doubt that with our extensive fruit tree planting, we shall produce more fruit than we want for our own consumption, and it is important to know what apples we will be able to ship away. The curculio can be prevented by that system of jarring, which is done by inserting a spike in the tree, and striking it with a hammer. It requires, however, to be done three or four times a week, and a sheet should be spread below the tree on which to collect the insects. Another plan, which has been tried with success, is to syringe the trees at the time the fruit is setting with a mixture of Paris green and water. This seems to have the effect of preventing the curculio from depositing its eggs; at all events a large portion of the fruit is free from the curculio, and I know of no other explanation. One application should be made just when the blossom drops, and another about ten days after. If rain washes off the effect of the poison, it is well to apply it again. My man missed one tree in syringing, and on examining the fruit the other day, I found that every specimen had been stung two or three times, thus showing the protective effect of Paris green.

Mr. MACD. ALLEN (of Goderich).—In advising the people of this section what to grow, it is rather delicate ground to tread upon. They should be the judges themselves, and the knowledge in any one section is only acquired by experiment. You must try one variety and if it does not succeed try another and another until you get that which does succeed.

If possible, get those varieties which are of the best value for the foreign market, as well as the home. There is one variety, for instance, the Northern Spy. The only point against that variety, where you plant trees from the nursery, is the length of time before it comes into bearing; but in any of the old country markets it is one of the best varieties we have. It is a little delicate if not kept on the ground for sometime and sweated, or the skin toughened, as we call it. On the average, when you cannot grow the Baldwin with profit in this section, the American Golden Russet would be a variety out of which you could make as much money as any you have. It is a variety that grows well, and it is a grand bearer. The Wagener was spoken of. It is a very early bearing variety, and is almost always clean and free from spots. It ships well, and the apples on the tree are almost all of one size. It takes well in the old country market. King of Tompkins stands high in the market, and will run from one to three shillings a barrel more than any I have mentioned. The point of this Association sending directors to the different shows for the purpose of properly naming fruit, is again brought to my mind by the recollection of a gentleman who had about three hundred barrels of King of Tompkins. He named them Baldwin, and got Baldwin price, whereas, if he had given them their proper name he would have got at least two shillings a barrel more. I do not know whether there are any shippers here, or whether it would be interesting to you to know the manner of packing and shipping. Regarding the orchard, I would advise any one who grows apples for the home or foreign market, to give more attention to the orchards than we usually find given to them. The trees ought to be properly trimmed and kept in a neat condition. I always apply a wash to my trees, and by scraping off the old bark, make them look neat and trim. Although I do not believe in trimming old trees, I believe that the proper course for its future good is to trim a tree from childhood up. You should begin when you can pick off the little limbs with finger and thumb. The Rhode Island Greening is rated up pretty well in the old country market. At one time they had a prejudice against the green colour, but I think, now, they are looking more to quality. The Ribston Pippin is, of course, at the head of the list.

The PRESIDENT.—Are there any varieties not named here that you think it well for them to try?

Mr. MACD. ALLEN.—The Mann is a very good apple. I have shipped it for four years, and it is a grand keeper, and there is none better for shipping. When kept until spring it is of good quality.

The PRESIDENT.—Is it better than the Ben Davis?

Mr. MACD. ALLEN.—Yes; I think it is, although the Ben Davis is a better bearer. The Mann is not a very heavy bearer, although very regular. They are about one size, of beautiful shape and clean. I never saw one spotted. It is not, however, a very rapidly growing tree, and having a fine stem the fruit is a little liable to drop off. The President spoke of Paris green. I have used it for years and have found it very effectual. Do not, however, use too much. I take out a teaspoonful in a cup, and after working it up mix it in with a pailful of water. Then with a little garden pump and a fine rose at the end of the hose, I find I can sprinkle about six good large trees with that pailful. I put a little more Paris green in for trees larger and better grown. I have known a man to take a tablespoonful and apply it to two trees, and of course the leaves were all scorched.

Mr. GLENDENNING.—Have you shipped the Pewaukee?

Mr. MACD. ALLEN.—I do not think I have.

Mr. BEADLE.—With regard to pears I feel somewhat discouraged from what I have heard here. Our friends say they cannot grow the Bartlett; nothing but Flemish Beauty and Clapp's Favourite. I fear there is something the matter with the climate. The Flemish Beauty and Clapp's Favourite are among the hardiest we have; but I would add two more varieties to your list if you should care to extend it—Beurre Hardy and Doctor Reeder. I believe they are both hardy. The Doctor Reeder is especially famous for being exempt from the blight. If I remember rightly the authorities in connection with the London Asylum planted a good many pear trees, and while many died the Doctor Reeder is standing still and bearing well. It is not only free from blight, but, having a hardy constitution, would probably resist your frosts. You would be pleased with both

of these, should you be able to make them grow, and I think you would. With regard to plums you do not seem to have any difficulty. There are two or three varieties that I shall mention here that may be new to you, as they are grown more for the market than by the amateur. One is the Geuii. It is grown largely for the New York market. Then another is the Hudson River Purple Egg, which is a fine showy plum, and an abundant cropper. The Lombard you are acquainted with. It is a staple variety and bears very largely. The curculio has to be very industrious to get all the plums off a Lombard tree, but if you are careless it will take them. As to grapes, a few varieties have been named, and possibly I may repeat them. The Brighton, I think I heard mentioned, but of it I may say that when it is fresh from the vine I know of no other grape that I prefer to it. I do not, however, think very much of it as a grape to keep, as it loses flavour after being cut a few days from the vine. Perhaps our friends who live in the cities may think it very good when it is stale; but taken fresh from the vine it is the most delicious of all I know. You will be pleased with it, I am sure. Our ex-President says it does well about Trenton, and I think it would do well here. The Worden is like the Concord. If you like one you will like the other. It will, however, ripen a few days earlier than the Concord; Mr. Dempsey thinks a week. If you are trying to grow grapes for the market and want other people to eat them instead of yourself, get the Champion. My own experience is that it is good to sell, but good for nothing to eat. I make more money out of it than any other grape. I set out twenty-two vines, and they bring me in about $72 a year for other people to eat. Then there is another grape, introduced by Mr. Burr, of Kansas. I have fruited it for a couple of years. It looks like the Clinton, and I like it very much. It is not very sweet. It ripens very early, although not as early as the Champion. The best time to market the Champion is when it gets black, and not when it gets dead ripe, or it will fall from the bunch. I think you will like this Early Victor as a grape for your own eating at home. I do not know that any one mentioned the Delaware here. I should think you could grow it here. It is an old grape, and there are very few that are better. I presume most of you have seen it, and I suggest that you try it. Among the Rogers' grapes, I would suggest the Massasoit. The bunches are variable in size, some being good and some being poor. It ripens early. It is sweet. For a black grape among the Rogers I would name the Wilder. You say you can ripen the Concord here; then I think you can ripen the Wilder.

CRANBERRIES.

The following question was asked :—

"Are any of the members acquainted with cranberry culture?"

Mr. BEADLE.—In order to grow cranberries you must have a piece of ground that is near the water, where the water comes to within three or four inches of the surface of the ground. You want a soil that is almost pure sand and perfectly free from weeds and grass. When you have that, all you need to do is to get cranberry runners, chop them up and scatter them over the ground. They will take root. It is desirable in addition to this that you can flood the plot, or the crop is likely to be killed by spring frosts. If a cold night comes along and you have it arranged so that you can submerge your cranberry plants, you will save your fruit. Besides that, it is well to have them pretty well submerged in the winter. Those who grow them try to have them so arranged that they can have a height of water above and a dam, so that submersion is possible in winter and on the occasion of cold nights. The cranberry is subject to what is called the cranberry worm. I do not know what its entomological name may be, but it commits great ravages among them. When these worms make their appearance, if the plants are submerged, it drowns them. You need all these conveniences to grow cranberries successfully.

Mr. CUMMER.—Is there not what you call the high bush cranberry?

Mr. BEADLE.—Yes, it is so called; but it is not any such thing. It is a species of snow-ball, the same as we have in our gardens. The Viburnum bears a fruit with a stone in it, not quite so large as a cherry, and the pulp that surrounds this is used very much the same as the cranberry. It has the acidity and something of the cranberry flavour;

but I should think no one would use them where they could get the genuine fruit. I should think the cultivation of cranberries would be profitable to those who have the conveniences.

The Association met again in the evening, when the attendance was materially larger than in the afternoon. Many ladies were present. The Question Box was first opened.

FEEDING HOUSE PLANTS.

QUESTION.—How can house plants be best fed?

Mr. BEADLE.—I suppose I can give my own ideas, and if any one has anything further to add they can do so. One method is to re-pot them. It is sometimes an advantage to take them out of the pot, shake out the soil, prune back the plant, and in some cases the roots, and then replant in fresh soil; we do that, especially with geraniums. We shake them out and make them take a fresh start. If it is preferred to keep them in the pot, they can be quickened by liquid manure. That is made by taking such manure as you would put on the soil, add a little water to it, and occasionally stir it until it becomes a strong decoction. Take a portion of this liquid, and add it to the ordinary water used for your plants until it is of a strength looking like strong coffee, and water your plants with it twice a week. You can overdo the thing. Twice a week is often enough. At other times use fresh water. Another method would be to apply phosphates to the surface of the soil in the pots, and, as the plants are watered, it will work down into the soil, and be carried to the roots of the plants. There is another method of making liquid manure, and I think it is preferable:—That is going to the blacksmith's shop and getting clippings from the hoofs of horses. Get half a bushel, or a peck, according to your needs, and put that into a tight cask with water, and use it instead of the other liquid manure once or twice a week.

The PRESIDENT.—Have you tried sulphate of ammonia or bicarbonate of ammonia?

Mr. BEADLE.—No.

Mr. DEMPSEY.—We have used spirits of ammonia, a teaspoonful to a gallon of water, and my wife finds it very beneficial.

The PRESIDENT.—I have used ammonia both in the form of sulphate and liquid ammonia, and also a solution of carbonate of ammonia, and I think they all gave a strong stimulation to plant growth, and are beneficial in the same way as liquid manure prepared in the manner described by the Secretary. The solution I have used has been one ounce of sulphate or carbonate to a pailful of water. The action of ammonia upon the plant is the same as that of the phosphates, and gives a strong stimulus to its growth.

Mr. WRIGHT.—I have never found anything equal to hen manure mashed down into a floury state, and placed around the edges of the pots, and covered with earth, so as to prevent any of it from coming in direct contact with the roots. As you water the flowers, it has a beneficial effect. This is especially true of roses.

Mr. CROIL.—I have tried hen manure leached, with capital effect.

KINDS OF ROSES.

QUESTION.—What do you mean by China, Bourbon, Noisette and Remontant roses?

Mr. BEADLE.—China roses are sometimes called summer roses. If any of you know Madame Plantier, that is an illustration. It is a hardy rose—that is that class of them is. There are China roses that are grown in our houses that are tender, but I am now alluding to that class of roses which usually goes under that name, and which are hardy. The Bourbon roses are a class that are tender in our climate. The Bourbons are the more hardy of the ever-blooming roses. A feature of the China roses is that they bloom but once a year, but the Bourbons bloom for a number of months. The Agrippina is one Then the Noisettes represent another class of tender or half-tender roses. Some of them will grow in our latitude in the County of Lincoln, with little protection outdoors; but many of them are too tender. Their leaves are very finely cut, you might say. I do not

know of a pure Noisette rose in cultivation that you would be acquainted with. There has been so much hybridization, that it is very hard to find a pure blood rose. Take Marshal Neil; I presume people have been growing it in their hot-houses. It is a hybrid rose, with some characteristics of Noisette. It has some of the tea rose in it, for it has the tea smell. Then the Remontant roses are those which bloom twice. Another name is Hybrid Perpetual. There are none of them perpetual, but many have the habit of blooming the second time. If you wish to have good autumn bloom, just as soon as they are done blooming the first time, cut them back, and you will have bloom the second time. Baron Prevost is another old rose you are familiar with, and those roses have been so crossed by artificial fecundation that they may be said to be completely wiped out. It is important to know something of the characteristics of roses, for if they have any of those bloods in them, they will be more or less tender, and the only safe way is to take them up in the fall, and put them in the cellar or a cold frame, and in that way keep them through the winter.

GRAFTING PEARS.

QUESTION.—What is best root to graft pears on?

Mr. MORRIS.—We import the French seedling for standards, and quince for dwarfs. I have tried to graft on apple, but after growing for two or three years they go out. I do not know that budding on quince really dwarfs it, but they may dwarf by cutting back.

Mr. BEADLE.—I would add to that, that the root of the quince is a fine, fibrous root, compared with the pear. Those of you who have taken up a pear tree, know what strong roots they make, running right down into the ground. The roots of the quince, however, are near the surface, and extend comparatively but a little ways. Consequently, after this pear has grown on a quince stalk, its supply of food is diminished, and it stops growing, and goes to bearing. If the quince is well fed, you will have plenty of pears and of good quality. If you allow your dwarf pear tree to be starved, you will probably get poor pears and few of them.

SUMMER CULTIVATION.

Mr. BUCKE (of Ottawa), Vice-President of the Association, read the following paper on this subject:—

It is well to understand, when we speak of summer cultivation, what is the object we expect to gain by it when practised among growing crops, and in order to do this we must have some knowledge as to how plants are fed. I have already pointed out in another place (Report for 1882, page 117) what the great agricultural chemist Liebig has demonstrated on this point, that plant food cannot exist for any length of time in solution in the earth, it is therefore impossible there can be any circulation of such solution towards the roots, therefore these must go in search of food. Hence it is necessary, in order to arrive at an adequate idea of the requirements of plants, to study the growth and ramifications of their roots.

As the food of plants cannot be held in solution in the ground, it will be seen that those portions of the soil which are traversed by the rootlets will soon become exhausted of the plant sustaining element, whilst those immediately adjacent to them are rich in plant food. Now this plant food is accumulated by the absorptive power of the soil, and it is this which removes from solution the soluble salts required for fertilizing plants. For instance, charcoal is used in filters and in sugar refineries as an absorbent of deleterious matter. Soil which is used for the purpose of growing cultivatod crops has the same power as charcoal, though in a less degree. Diluted liquid manure of a deep brown colour, if passed through arable soil will be found to lose both colour and odour in transit; not only so, but it loses its ammonia, its potash, and its phosphoric acids, held in solution. Now it is these very particles which have adhered to the soil in transitu, upon which all plants feed, and for which aerated soil has such a chemical affinity. No vegetable life can be had without heat and sunlight. The power of a soil to nourish cultivated plants is in proportion to the quantity of nutritive substance contained in it in a state

of physical saturation, but all soils have not the power of absorbing plant food in the same degree ; loose sandy soils, and heavy clays, have less absorptive properties than a well-drained friable loam. It is necessary, by artifical means, to put the soil in the best possible position for doing its work ; in order to do this it must be loosened and stirred so as to admit from without air, heat, and moisture ; but stagnant water must be at all hazards got rid off, as neither heat nor air will penetrate where water is found in excess. Too much heat makes plants droop their leaves, as may be seen in the heat of the day, but a genial heat stimulates the roots to increased activity. The practice of gardeners applying bottom heat in the artificial climate of a conservatory, or hot-bed, is founded on this well-known principle. Following out the conditions laid down, I have myself practised on a small scale the principles involved in the above remarks in as thorough a manner as possible with the implements at hand. When carrots, parsnips, beans, or any other vegetable, gets of sufficient size to mark the rows well, say from four to five inches high, that is after they have been hoed and cleaned between the rows, which should be eighteen or twenty inches apart, and hand-weeded in the row, take the digging fork and turn up the soil to the full depth of the tines between every other row, leaving one space. In a week or ten days time the space left is also forked over, and so on every fortnight ; thus the ground is kept thoroughly pulverized and porous, making the land so light that if tread upon the foot will sink several inches into it. Land between potatoes is turned over in the same way, once only, as soon as the plants are well above ground, so as to mark the rows well. I fork over the ground lightly between the raspberries, gooseberries, and currants, say middle of June, and again when the fruit has been gathered. By keeping the ground loose and open every drop of rain is caught and passes into the soil which, like a sponge, draws moisture from below when there is no rain for a considerable period. I believe if we could get digging forks half as long again as they are usually made the soil could be made to produce half as much again as it does at present. I look upon the cultivator as a fraud, only tickling the soil when it ought to be thoroughly scratched to the depth of twelve or fifteen inches, so as to mix the soil and give the new young rootlets an opportunity of penetrating fresh earth.

Agriculture will, in my opinion, receive its greatest advancement when the action of the plough, which only turns and re-turns the land, is superseded by a steam rotary motion cultivator, which will do its work to the depth of ten to fifteen inches, and cannot only be used to prepare the land to receive the seed but can be employed to cultivate between the rows of the growing crops at any time during their season of growth. The man who invents this implement and puts it into thorough working order will be one of the greatest benefactors who has ever blessed the human race.

Mr. Douglas (of Uxbridge).—Mr. Bucke speaks of carrots and beets needing deep cultivation between the rows. I had that idea at one time and the result was the growth of a great many side roots. The beets were useless. I have not done so since. I find that stirring the earth to not more than three inches is beneficial, but going deeper is not so.

Col. Magill (of Oshawa).—Are you going to dig up the ground twelve inches among your roots? What will become of the roots? I tried this on parsnips and I had the same result as Mr. Douglas. You break off the fibrous roots and two or three come in the place of each. Where the digging was done only two or three inches it had a very beneficial effect indeed. Then the rain is absorbed ; but when you go further than that, especially in raspberries and grapes, you tear up the little roots and lessen the amount of fruit. That has been my experience.

Mr. Beadle.—In speaking of raspberries and grapes, if we keep up summer cultivation late into the season, thereby getting up a fresh succulent growth, we will have a lot of wood to be winter-killed by the cold ; but if we cultivate thoroughly during the first part of the season, and stop about the first of August, this succulent growth will cease, the wood will ripen up and come through the winter much better than though you kept on until the frost came.

Mr. Little.—I think Mr. Bucke's paper will be beneficial to cultivators of small fruits. If you cultivate as deep as he says and add well rotted manure, and plant in the fall, it will pay you a hundred per cent. better than planting in the spring with raspberries.

Mr. BUCKE.—In the first place, I do not recommend late cultivation of raspberries and gooseberries. I said, once early in the season, and once after the fruit had been picked. In growing beets we grew them so long we could not get them into a wash boiler; so we grow the turnip beet now.

ROSES.

Mr. WELLINGTON (of Toronto).—I have had to say so much at the different meetings about roses, that it seems I will have to say a great deal over again, in order to confine myself to the text: "What roses are found to succeed best for open air culture?" That is a difficult question to answer, as we have so many different climates in Canada. What will succeed in one section will not in another, and I presume the better plan would be to recommend only those which would succeed in this neighbourhood, and similar latitudes. Being thus limited I will have to omit a great many choice and valuable varieties; and no doubt if I give you a list of from six to ten, a great many will find that favourites have been left out. At the same time, if I were asked to make up a list of from ten to a dozen of the hardiest varieties, I think I should make it up as follows: General Jacquimenot, Louis Vanhoutte, Alfred Colomb and Baron Von Stettin. These are high coloured or crimson roses. As for pure white, there are very few known. The Madame Plantier is not a hybrid perpetual. In every collection we should have the Madame, however. Then we have the Coquette des Alps, which is not altogether white, but has a blush centre. It is an abundant bloomer; in fact, its greatest drawback is that it will bloom too freely and starve itself to death, and die in the winter, unless you cut off some of the buds. Then Reine Blanche is another favourite of mine. Among rose-coloured or pinks would be Loraine, a strong and abundant bloomer. Victor Verdier and Infant de Mt. Carmel I like very much. Verdier I have found to be hardy, and I have always plenty of it when other varieties have failed. Last of all, but not least, is that charming rose, La France, which I would not claim as being entirely hardy. It belongs to a new class called hybrid teas, hybrid perpetuals and teas crossed. We have the perfume and ever-blooming qualities of the teas, and those I consider the best of all. It is half hardy, and will need considerable protection to bring it through the winter. It is a bluish pink. As for protection, I have often noticed roses that have been bound with straw or thatched, and in that way smothered by having too much care bestowed upon them. We have found that the best protection we can give them is to gather autumn leaves and pile them on freely. Over that we will place a good coating of manure, and to keep them in place we throw on a loose covering of soil. This will bring your roses safely through with what snow you are likely to have. This brings me to the point regarding pruning. I would always do it in the spring. You draw off this protection in the spring and you will probably find that a few inches of your roses have been frozen down; but we do not want the top or old wood for bloom in the remontant roses. What we want is vigorous new growth, and from that we obtain our new bloom. After you have cut your rose back in the spring, this protection you have had will act as an extra manure, which is very necessary if you would have good blooming roses. Most of the roses as seen through the country are starved. They do not have deep, rich soil, and that is essential. Here our worthy Vice-President's long pronged fork would come in good. If you have not good, rich soil, dig it out and put some in. If the soil is good the plants are less liable to disease. After the first bloom in June cut them back, and if your soil is suitable, you will have another bloom before the winter sets in. I think this covers the text given me.

Mr. DEMPSEY.—I cannot add anything to the list, but I should be sorry to forget the Cabbage rose. I do like a rose that I can enjoy with my eyes shut. If it only blooms once a year, it is worth all the attention we can give it. It is a full rose colour. There are various ways we enjoy it. Its considerable quantity is one. My wife enjoys them as well as I do, and when they begin to fall, she puts them in a pan and pours alcohol over them. They make a very fine flavouring for cake. There are some roses hardy in one place, that are tender in others. The La France is as hardy with me as any other we cultivate, and I only attribute it to the soil in which it is planted. We give it no more care than others, and it has wintered for I think ten years. I got it as a novelty, and

it has wintered every year perfectly, with the protection afforded by a little evergreen foliage from the forest. Sometimes we use autumn leaves, and throw a little earth, or a few boughs, or almost anything over them to keep the leaves in place. I find there is nothing pays so well in the cultivation of the rose, as partial shade during the heat of the summer. Those dark roses fade under a hot sun in a few hours, and lose much of their beauty. In order to prevent this, we grow them under our standard pear trees, where shade is afforded for part of the day at least.

The PRESIDENT.—How near do you grow them to the trees?

Mr. DEMPSEY.—Right under the trees. We fertilize very highly. You must manure the rose well, and prune them back. I got this idea from Rev. Dr. Hole, whose work on roses recommends that course as a protection against the ravages of insects and disease. We find no mildew on roses if we can maintain a good growth, and to encourage a strong growth the soil should be kept constantly loose. A little hellebore will kill the flea. Our block of roses, if you will pardon this addition, is situated at the back door of the kitchen. My finest roses are grown where my wife can see them on washing day. (Mr. Dempsey fully explained the situation of his rose bed).

Mr. BEALL (of Lindsay).—I do not think I can give you any further information. I can endorse almost every remark Mr. Wellington has made, especially in regard to deep and rich cultivation. You cannot make a rose-bed too rich. The roses he has selected are very good, but there are some we cannot agree on. I do not like General Jacquimenot. It has no perfume, and has that stiff, awkward habit of growth that prevents us using it in the bouquet. If he had only a certain number to give, I would ask him to strike that one out, and take a white Moss rose instead, the Countess De Murinais. The buds are most beautiful. With regard to protection, I think what Mr. Wellington says is true. I think many persons injure their roses by over protection. We can keep the rose in Lindsay as well as they can in Toronto, and I have never lost one in the winter. We lay down the branches, and generally throw a stick of fire wood across them. That will keep them down, and then we throw a little pea straw, or evergreen boughs over them, and a little earth as well. Plenty of manure must be used, and unless you love the work, and love the rose, there is no use in commencing.

Mr. BEADLE.—Have you grown the Common Provence Moss Rose?

Mr. BEALL.—We have grown the old Moss Rose. It grows very wild, and spreads in the ground. I do not find it necessary to protect that kind. It has the worst foliage of any rose I know of.

Mr. WELLINGTON.—I am willing to acknowledge pretty hard places, but what a hard place it must be where General Jacquimenot has no perfume. It has been one of the most sought after, and I am sorry I cannot agree with my friend Mr. Beall on that score. I do not object to the white rose he mentions, but if I were going to choose a moss rose, since its bud is its chief beauty, I should select the Crested.

A VOICE.—What about the treatment of climbing roses?

Mr. WELLINGTON.—You want to be sparing in the use of the pruning knife. That is the only exception from the general treatment of roses. We grow the Queen of the Prairie and the Baltimore Belle, but the latter is on the tender side. The Seven Sisters is also a very nice climber, but also inclined to be tender. I do not take them down in the winter time.

The PRESIDENT.—I wish to add something to what Mr. Wellington has said. I think it is necessary to have roses all through the summer, but the subject on the programme refers to those that are found to succeed in open air culture, and I do not think the list would be complete to my fancy if we did not include a few hybrid teas and tea roses. They are not hardy, but by simply taking them up and putting them in a cold frame, covering them over with a glass sash, you can keep them perfectly; or you can keep them in your cellar and they will come out all right in the spring, and you will have roses until the frost cuts them off in the autumn. If you do not like either of the plans I have suggested, you can bury them in an out-house, and they will come out strong in the spring, and will grow vigorously. Some of the hybrid teas are very fine. There was one rose which Mr. Wellington did not mention, but which I have found to be very fine, the John Hopper.

Mr. KINSEY (of Uxbridge).—Must cold frames be frost-proof?

The PRESIDENT.—No; most roses do not need frost-proof frames.

Mr. A. A. WRIGHT (of Renfrew).—I can hardly sit still when they are talking about the General Jacquimenot, as I have heard it. It does not stand at the head, but I put it third. Mr. Elwanger, of Rochester, divides the rose under five headings. The first is appearance. He allows 24 points on that. The next is form and shape, for which he gives 22. The next heads are odour, 20; continuity of bloom, 18; and vigour, 16. Now, General Jacquimenot scores 18 on scent, or within two of being perfect. La France stands highest, and Alfred Colomb gets 92. For a scarlet rose, next to Alfred Colomb, I would put General Jacquimenot, then Louis Vanhoutte; and then, if you want one as large as your hat, take Paul Neyron. La France I put at the head of the pinks, then Victor Verdier. Among the yellows the only one that did well was Pearl de Jardine, and among the whites, Madame Plantier. The way I have protected them is by bending them down and covering with earth until the ground is frozen; then I take a forkful of pea straw and throw over the top. In the spring my roses come out without failure.

Mr. BEADLE.—The subject seems to have been pretty well exhausted, but there is one other rose of the ever-blooming variety which has never been beaten, and I do not believe ever will. That is the Souvenir de Malmaison. It has the beautiful silvery shade of the tea rose, and its scent. La France is another type of the same family.

FLOWERING SHRUBS AND FLOWERS.

Mr. BEALL.—Has anyone present had any experience in cultivating our native wild flowers?

The PRESIDENT.—I have grown a good many of them, and they are very pretty indeed. In the early season there are the Hepaticas, or Liverworts, which you can find in the woods everywhere. Some of them have a very pleasant perfume. Following these are the Bloodroots; the twin-leaf Jeffersonia is like it. Then we have our native Phlox, a sort of mauve purple, which soon follow our earliest spring flowers. Following these we have a number of beautiful plants, particularly those which are to be found in boggy places, and of those such as the Ladies' Slipper may be cultivated with success and are very beautiful. They must, however, have plenty of moisture and a shady place. Another very brilliant flower, which comes late in the season, is the scarlet Lobelia, there is also the blue Lobelia, but it is not equal to the scarlet. Then we have the Gentians and others, but it is difficult to recollect them without having had an opportunity of thinking the subject over. I should have mentioned the violets, blue, white, etc., which come in with the Hepaticas, and are well worth cultivation. Among the flowering shrubs we have the Spireas and the Viburnums, in the woods. One of the most beautiful plants I have grown was from the North-West, and is known there as the Silverberry, a species of Eleagnus. The flowers are small, but very fragrant, and the under side of the leaf is a beautiful silvery colour, which, examined by the microscope, is seen to be small stellate hairs. I got the seed from the North-West, but do not know whether it can be easily obtained. The Columbines also are among the most graceful flowers you can get, and are highly prized in foreign countries.

Mr. BEALL.—Have we any Orchids?

The PRESIDENT.—Yes; the Ladies' Slipper. The Orchus Spectabilis is very pretty; and then there is a very beautiful little plant in the bogs around here, I believe, known to botanists as Arethusa Bulbosa. We also have another species belonging to the Genus Calopogon. The root is tuberous and can be grown in a pot with plenty of water and a little bog earth. A large number of our native Orchids are very inconspicuous, and are not so brilliant as those to be found farther south.

Mr. BUCKE.—In going over the names there are some few you have not mentioned. There are the Trilliums. Also the Claytonia, or Spring Beauty, is one of the earliest, and is very pretty. The Tiger Lily is one of the finest we have, and there is another variety called the Dutchman's Breeches, a white flower. The Mandrakes, and two little flowers, Mitella and Tiarella, are very beautiful when looked into with a magnifying glass.

Mr. BEADLE.—Asclepias Tuberosa is one of the best we have.

Mr. DEMPSEY.—I have some very fine Amaryllis, which are a cross between the Japan lilies and the ordinary Amaryllis. We have one new one which flowered this year for the first time. It is a red flower about four-and-a-half inches in diameter. The petals are striped with white, shaded with red. I had one last year, which was five inches in diameter. It is very fragrant, but the one which bloomed this year had no perfume. These bulbs have been very interesting to me, and I have been waiting for them to bloom for twelve years.

Mr. BUCKE.—What Japanese lilies did you cross them with?

Mr. DEMPSEY.—I kept no account, and cannot tell from memory.

Mr. MORRIS.—I think the best of the Spireas is the Spirea Von Houtte. It is hardy, and I think I never saw a shrub so beautiful. When in flower, it almost hides the bush. We have trained it into a hedge as well, and the only objection to it as a flower is that in a dry, hot season, it might not remain as long in bloom as some other shrubs. It is the earliest to bloom of anything in the shrub line. I grow six or eight varieties of the Wigelia, but I esteem the Rosea about as much as any of them. Although Hydrangea Paniculata will stand the winter, but its growth becomes affected. I found manure in the fall to be a benefit. Of all, however, I very much prefer the Grandiflora.

Mr. BEADLE.—There are a number of shrubs represented in this bouquet on the table, which any one can grow with a great deal of satisfaction and without much trouble. They die down in the autumn, and come up again in the spring, but if you take a little care with them, by throwing over them some litter, they will be all the better for it. I see here the Dicentra Spectabilis, or Bleeding Heart, as it is called. It blooms a great deal better for having been frozen solid. Of these Peonias, there are eight or ten clearly distinct and handsome varieties that might as well be grown here as not. Some of them have a very pretty rose scent. Then there are these flowers of the Iris family, which are hardy and need no protection at all. You can get a great number of colours. The Japanese Iris are very pretty, and the Japanese people are exceedingly fond of them. With perhaps slight protection, in this country they would grow readily. The English Irises need protection. These herbaceous Spireas, one red the other pink, are very showy, and they are perfectly hardy. If you add to these the Phlox, you may make your gardens very attractive with these neglected plants.

Mr. CROIL.—There is one very beautiful shrub, called in a common way the Smoke Plant.

The PRESIDENT—The name is Rhus Cotinus. The foliage and flowers are very fine.

Mr. BEADLE.—The Chisnanthus Virginica is one of the most beautiful objects, I think, I ever saw.

Mr. WRIGHT.—You need have no fears in growing Hydrangea Paniculata, or Grandiflora, as they are successful with us. In addition to what have been mentioned, are the Clove Plant, Wax-ball, Snowball, the different kinds of lilacs and Clematis Coxinnia. These require no protection.

The hour for adjournment having arrived, further discussion was abandoned, and the meeting came to a close for that night.

The Association met on Thursday morning, at ten o'clock, the President in the chair. The first matter taken up was, the Question Box.

ADVANTAGES TO SMALL GROWERS.

QUESTION—Would this Association advise any person to become a member if they had only had a small piece of land for a garden? Would it pay him for his subscription?

Mr. A. A. Wright (of Renfrew).—I think there is no section of the country where it is harder to raise flowers or shrubs or trees of any kind, than where I live; and yet there are those there who think that it is not only an advantage to belong to the Associa-

tion, but who believe that the *Horticulturist* and the annual report is worth far more than the small sum it costs us to become members. Many down there, myself among the number, have not only found it of advantage to read these reports but to come miles and miles to hear the discussions. If it pays us it will pay any man or woman to become a subscriber, and to continue from year to year. I am sure if they once commence they will be very loth to give it up.

Mr. HICKLING (of Barrie).—It seems to me that the benefits of this Association are so many, that any one, no matter how small his piece of ground may be, must derive a large amount of benefit by becoming one of its members. I have been a member for a number of years, and I would not be willing to part with the information I have received from the various sources this Association presents, for a great deal of money. Had I had the same knowledge twenty or thirty years ago, it would have saved me many hundreds of dollars in the planting of trees.

Mr. A. M. SMITH.—Even though a person is not a gardener, or has not a piece of land, if he is a fruit consumer and interested in what he is going to eat, it will pay him to become a member of this Association. They can learn from our discussions which are the best varieties of fruits for their tables. I go farther, and say that every lover of his country should do all in his power to help an Association like this. I am convinced that very few know the advantages that come to the country and the individual through this Association. Those who are conversant with our work at Philadelphia during the great exhibition, will know the attention that was directed to Canadian fruits at that time and through that effort.

Col. MAGILL (of Oshawa).—Mr. Smith referred to the notice taken of our fruits at the Centennial. Although Canada walked off with a very large number of prizes for her stock horses and cattle and swine, I think there was nothing that opened the eyes of the visitors and the Americans like our display of fruit. It was my fortune to be there the last two weeks of the exhibition, and they thought it was impossible that frozen Canada could have produced such fruit. When I was in Kansas and Iowa last winter, a very intelligent fruit grower, to whom I spoke, said, "We have nothing in America that approximates in usefulness as a horticultural society to your Fruit Growers' Association in Canada." The Americans are watching us. We are developing the resources of the country to such an extent that it is astonishing our American cousins, and they are beginning to think that we are not such a cold country after all. I do not know a great deal about fruit, but I say that I owe most of what I do know to my connection with this Association. The great trouble with many is that they think we have these publications among ourselves, and are making money out of them. I do not know what side of the question they look at, but it seems to me that this organization has given as much as it has gained. (A voice, "More.") The wonder is, how we live. We do live, however, and are looking pretty well yet. The wonder to me is that the circulation of our periodical, and the reports, is not double. Mr. Beadle is not making anything out of it. Where are the profits? They are in the wisdom regarding fruit growing that is being scattered all over this country. I join with our friend from Barrie in saying that had I had the information that I now have as the result of my connection with this Association, twenty years ago, it would have saved me many hundreds of dollars.

Mr. DEWHURST (of Uxbridge).—I have been a member but a short time, but I consider yesterday's discussion worth to me more than I have paid for the privileges of membership. I find something in every number of the *Horticulturist* that applies to me personally, and if it pays me with my three-quarters of an acre how must it pay those who are large growers?

The PRESIDENT explained the conditions of membership.

LOCATING AN ORCHARD.

QUESTION.—What location would you select for an orchard?

Mr. DEMPSEY.—If I were going to select a location for an orchard again, I would select the very one I have got, from the fact that the soil seems adapted to the growth

of the trees. The first point to be considered is this: Is that section of country liable to late spring or early autumn frosts? If possible, these must be avoided. Sometimes we find we are not so liable to them in elevated positions as in valleys. At other times, by being convenient to large bodies of water, we are exempt. The soil has something to do in the matter, and I would get a sandy loam. I prefer it light rather than too heavy. In fact I would rather have a driving sand than very heavy soil. I am aware that some fruit growers oppose me in this, but it is a fact that the finest Baldwin apples I ever saw in my life were grown on a drifting sand. Then a northern descent is to be preferred to a southern descent, as a means of avoiding sun blight.

THE ONION FLY.

QUESTION.—Is there a remedy for the white maggots in onions and cabbages?

The PRESIDENT.—The onion fly belongs to the same genus as the cabbage fly, and has similar habits. As far as our knowledge goes, there is no better remedy than that given yesterday:—a diluted kerosene emulsion. Syringing that among the young onions will deter the fly from depositing its eggs there. The fly appears very early in the year, and it will be necessary in the case of the cabbage to spray the young plants in the frame with this material before setting them out, as the eggs are often laid there, and the grub develops after they are set out. There have been a number of experiments tried in England, where they have suffered for generations past, and they have not been able to find anything that has been perfectly effectual in keeping them within bounds. Like all insect pests they prevail more at one time than another. The cabbage fly seems to have caused a great deal of damage this year. Why this is the case, we cannot learn beyond this, that they have enemies which prey upon them, and in some years their numbers are very largely reduced.

Mr. BEALL.—I suffered years ago from the ravages of this insect and I commenced using salt. I generally used a bag of salt, holding from two-thirds to a whole barrel on less than an eighth of an acre of onions. I sow it broadcast. I do not know whether the salt effects a cure, but it prevents the loss of my crop.

Mr. CROIL (of Aultsville).—Take about two pounds of bitter aloes to a barrel of water and it has a very good effect. I use it on turnips and for the cabbage worm. There is nothing will touch it.

Mr. KINSEY (of Uxbridge).—Is the worm that affects the radishes the same?

The PRESIDENT.—It is another species of the same genus.

SHADE FOR SMALL FRUITS.

QUESTION.—Should small fruits such as berries and currants be planted in a shady place or the reverse?

Mr. JOHN LITTLE (of Fish Creek).—They succeed remarkably well in a shady spot. I have an abundant crop from under and near my apple trees. When exposed they sometimes get scalded by the sun, but in the shade this is avoided. I would not, however, give strawberries any shade. I give them all the sunlight and air the Great Creator designed this earth to receive. Owing to the drouth and sun I planted my currants in the shade of my apple trees, and they do very well.

Col. MAGILL.—That has been my experience with raspberries, gooseberries, and currants, and I think I get better fruit than from those in the open air. My theory is that the moisture is retained in the ground, and the bushes are better fed.

Mr. LITTLE.—They should have more manure than otherwise in order that the trees do not absorb the nourishment which the berries need.

THE COLONIAL EXHIBITION.

A deputation consisting of Messrs. A. W. Wright and R. Pringle waited on the Association and urged the importance of preparing a collection of fruits for the great Colonial Exhibition in London, Eng., in 1866. After a full discussion, the matter was left with the directors.

THE DEWBERRY.

The PRESIDENT.—This question:—Can any one give an account of the new fruit called the Dewberry?—is meant to apply to the new Dewberry called the Lucretia, put out in the United States. The common Dewberry with its trailing habits is well known, but this berry originated in Virginia and is creating considerable discussion in Ohio.

Mr. BEADLE.—I know nothing about this new berry. The Dewberry grows wild in Canada in great abundance. This variety which is being grown in the United States, I am told by Mr. Campbell, of Ohio—who seems to have no interest in the dissemination of the plant—that he believes it will be a valuable fruit. Its trailing habit is made use of to protect it in colder latitudes. In southern Ohio it does very well without protection. Here, in the autumn, we could throw a little litter over it, and we are almost sure of a crop in the summer. It is said to be a large fruit resembling the blackberry in appearance and flavour. It is described as large, juicy, and of a very pleasant flavour. On the strength of Mr. Campbell's recommendation I ordered one hundred plants, and they are growing.

Mr. HILBORN (of Arkona).—I have two plants of the Mammoth Dewberry. It is not very much. I got them two years ago and planted them. They grew a little that year and had a few blossoms, but did not set any fruit, or what they did set did not come to perfection. This year they are full of bloom, but it is too early to say what the fruit will be. They are tender. I did not give them any protection, and wherever they stuck up above the ground they were killed, but those on the ground were all right.

Mr. LITTLE.—I have Dewberries growing. I got half-a-dozen of the Lucretia and Mammoth from the President of the Michigan Horticultural Society. He likes the Lucretia best and says it is a berry larger than the Kittatinny. It is a trailer and can be protected on the ground as you do your grape vines and rose bushes. The fruit is said to be luscious and good,

Mr. A. M. SMITH (of St. Catharines).—I have a wild one on my place which produces very fine fruit some years.

Mr. HILBORN.—The fruit ripens at the time of late raspberries.

Mr. HARMAN (of Uxbridge).—We have it here in the swamp about the size of a raspberry and very tart.

The PRESIDENT.—That is Rubus Triflorus.

EVERGREENS.

Mr. DEWHURST (of Uxbridge).—I have half-a-dozen of Norway spruce this spring that are not showing very good growth so far. They had started some growth before they came, and I think two are dead. I wished also to get some of our native spruce, and on the 10th of June I carefully took them up. One is doing well, and the other is dead. I went to the swamp again on the 15th, and pulled up three little spruce trees, and set them out along with those I had been so careful with, and I find they have made good progress.

Mr. CUMMER (of Uxbridge).—In the swamp over there, we have abundance of spruce and balsam, and nurserymen come and take away thousands of them. While they are so convenient, I would like to know how to take them out of low land and transplant them to high land, at what season, and the treatment.

Mr. KINSEY (of Uxbridge).—My little boy has frequently pulled up a nice evergreen, and, taking it home, would plant it, and he scarcely ever loses one.

The PRESIDENT.—This lad seems to have been particularly fortunate. I have planted a considerable number of evergreens in the spring before growth has begun, and I rarely lose any. I have planted them in June, too, and have succeeded with them. There is one important point in connection with the transplanting of evergreens that is often overlooked, and that is this:—The sap of evergreens contains a good deal of resinous matter. When the tree is taken out and the roots get dry, ordinary moisture does not restore them, as it would with trees having a different nature of sap. A drying wind will kill them in a few hours. The condition of the atmosphere is of very great import-

ance. I think if the tree is carefully taken up, either in swamp or nursery rows—the latter being preferred, on account of being better rooted—and then taken without injury, or being dried, to the place of planting, success will generally follow. Nurserymen transplant from time to time, and by that means they develope fibrous roots, which prevent failure through drying up. This drying of the roots is oftener a cause of failure than anything else.

Mr. A. A. WRIGHT.—I have had considerable experience in transplanting evergreen trees, spruce, balsam, and cedar, and I invariably found that the quicker I could get those trees planted out the better success I had. The greatest trouble was to get trees early enough. If I went into the body of the swamp, the trees I wanted would be frozen in; but whenever I could get such as I wanted near the borders, I had no difficulty with them whatever. I think that our President is wrong about the wind killing a tree in a few hours. It will do it in much less time.

Mr. BEADLE.—I have transplanted a great many thousand evergreens. I have transplanted from the seed-bed. I transplanted a number of Arbor Vitæ (I think some people call them White Cedar) the day before Christmas, and every one of them is alive there yet.

The PRESIDENT.—I transplanted one year in July, and they all lived.

Mr. CROIL.—I have transplanted a great many out of the swamp, and have not lost five per cent. of them. We never give the roots a chance to dry up. If we take up a tree, and the top covering comes off, we throw it to one side. We take those that are well covered, put them on the waggon, and move them to the place of planting as rapidly as possible. I have never lifted a tree that was higher than three feet. It pays better than trying to lift them at five and six.

Mr. BUCKE.—There is one tree that a great many people are planting out, and that is the balsam. I think the more of those trees that die the better. It is a very poor tree. It thins out at the bottom, and grows unsightly. The best time to transplant is a rainy day.

Dr. CROSS (of St. Catharines).—Several years ago I planted a large shrubbery, most of it taken from second growth pines. I got them in height from four to ten and fifteen feet. I went the year before and dug a ditch around those I wanted, and as a result they threw out new roots where the old ones had been cut off. I found no difficulty in transplanting those trees.

Mr. BODWELL (of Ingersoll).—I have had some experience in transplanting Arbor Vitæ from the swamp. Those with which I met the greatest success were transplanted in the middle of June. I have had a good deal of trouble in planting Norway spruce from nurseries, whether from drying of the roots or not I cannot say. I would like to ask,—If Norway spruce has started three inches of growth, would you take them up, and transplant them?

The PRESIDENT.—I transplanted over a hundred trees in June, when they had made about that much of growth. They would average from six to eight feet in height, and were carried a distance of three miles, covered up, of course, with bags, etc., to prevent drying. I took off the tops, as I wanted the trees for a wind break. They are very handsome to-day, and I only lost three or four in transplanting them at that time. I cut off all the new growth in trimming. It would have withered up almost immediately. I do not know whether it would be wise to advise people to defer their transplanting so late in the season. I think, perhaps, the beginning of growth is the best time.

Mr. WRIGHT.—I saw a gentleman with a good hedge of spruce, who took them all up on Dominion Day, and never lost one.

Mr. BEADLE.—After a great many years' experience, I would not advise any one to transplant evergreens after they have made considerable growth. I meet with the best result by transplanting just before they begin to grow. I think it would be a mistake to have it go abroad that there is anything to be gained by waiting until July or Dominion Day. I had no idea those trees would grow that I transplanted the day before Christmas. I simply wanted a wind break. I would say, take trees eighteen inches high and transplant in the middle of May before the buds begin to start.

Mr. BEALL.—I have had a little experience in transplanting evergreens, where they

were something like those in this neighbourhood. I was an amateur at the time, sixteen or eighteen years ago, and I determined to have some spruce trees. I got my ground thoroughly prepared, and was all ready on a certain day. The ground was loose and mellow to a respectable depth. I got a lot of wheat straw on hand, and then contracted with a man to bring me a thousand trees from Goose Lake, a place like this here. Each tree was to be over two feet high. On the 24th of May, the day fixed, was cloudy, and the day before it had rained. I got the trees, and planted them in rows about two feet apart, and packed the wheat straw in between. I am satisfied I did not lose two and a half per cent. of those trees, and I attribute my success to the mulching with wheat straw.

Mr. KINSEY.—I want to make a wind break with cedar. Would it be too late now?

The PRESIDENT.—There is no time like the present; but you will probably not meet with the success you would at another time. Select a wet day, and keep the roots well covered, and you will probably succeed.

Mr. CUMMER.—What class of evergreens make the best wind break?

Mr. BEADLE.—I know of nothing better than Norway spruce.

Mr. HILBORN.—I like Scotch pine as a wind-break, and they will grow in almost half the time of spruce.

The PRESIDENT.—They do not stop growing. I have some now and they are about thirty feet high, and I think I must cut them down.

Mr. MACD. ALLEN.—A great many make mistakes in planting wind-breaks. Instead of a wind-break they make a thorough hedge. My idea of a wind-break is that it shall allow a thorough circulation of air, and merely break the fierceness of the wind. We want a circulation of air through our orchard, no matter what sort of a crop we are growing.

The PRESIDENT.—From that standpoint probably the Scotch pine would be the best variety.

MULCHING.

Mr. MCGILLIVRAY (of Uxbridge).—How long is mulching kept on?

Mr. BEADLE.—I never use it in the sense it is commonly used. The best mulching I ever saw was a good cultivator. It will keep the weeds from growing, it will keep the ground from baking, and the tree will have the benefit of the dew and rain that heaven gives.

Mr. CUMMER (of Uxbridge).—I saw an orchard heavily mulched with saw-dust. Is that beneficial or not?

The PRESIDENT.—It is astonishing what ill-treatment some things will put up with. It is not safe to come to a conclusion from apparent success. Those who do not advocate mulching, generally object on the ground that it induces a condition of moisture which brings small roots up to the surface, and when the mulching is removed these roots are very apt to be destroyed by exposure to the sun and air. From this, they argue that if mulching is begun it should be continued. On the other hand, there are some people who contend that it is a great benefit.

Mr. P. E. BUCKE (of Ottawa).—I would not advocate the mulching of strawberries or raspberries. It gets very sour and soggy, and keeps the ground too wet. It may do for apple trees, but I doubt it.

The PRESIDENT.—Nurserymen have great success in growing trees, and I never knew one yet who used mulching to them. The cultivator, however, is often used.

Mr. CROIL.—I have mulched with saw-dust occasionally, but I cannot say that I have ever found very bad results from it or very good. It keeps down weeds.

Mr. JOHN LITTLE (of Fish Creek).—I have seen several instances of mulching with both fresh and rotten saw-dust; but the fresh got so sour that nothing would grow on it. Rotten saw-dust, however, is not so bad. I saw fresh saw-dust killing evergreens.

The Association then adjourned until two o'clock in the afternoon.

At two o'clock the Association re assembled, and the Question Box was opened.

SULPHATE OF IRON AND MILDEW.

QUESTION.—It has been asserted that the application of sulphate of iron to the roots of small fruits, liable to mildew, will destroy that pest. If so, what is the best means of applying it?

Mr. DEMPSEY.—I have used sulphate of iron largely as a fertilizer for pears. I never saw a spot on a pear tree where we were using it, but it never occurred to me that it was a preventative of mildew or spot. I discovered, however, a month or so ago that some person writing in an agricultural paper said, after using a considerable quantity of it upon the roots of grape vines and apple trees and pear trees, that he never found a spot on any of these fruits while using sulphate of iron as a manure. We have this year a Flemish Beauty pear tree, off which we have not picked a good specimen for years, and we have now applied about a peck of sulphate of iron to the roots. The rains wash it down after it has been pulverized, and there is no difference about it getting near the trunk of the tree. It costs about the same as superphosphate of lime. A peck is perhaps a large quantity, but we produce fine specimens of pears for exhibition purposes and we invariably find them smooth. At the time we were hybridizing them in pots and tubs we used this in a liquid form, and never failed to double the size of the fruit. Every man should know this, and if I only had the time to apply it, I should not be afraid of these St. Catharines fellows at the Provincial Exhibition. I never used it on small fruit, but fancy it would be safe anywhere.

The PRESIDENT.—I think I should prefer treatment more approaching the homœopathic. Five or ten pounds would be quite as much as you should have under one tree.

Mr. DEMPSEY.—In making a solution the quantity was generally judged. I generally took a handful and putting a little boiling water on it, filled up the rest of the pail with cold water. The quantity would depend upon the size of the tree.

Mr. HICKLING.—I have tried sulphate of iron. We had Snow apple trees that were for several years entirely ruined because of the spot, and whether from the application of sulphate of iron or the nature of the season, I cannot find any spots whatever. Of course the apples are very small yet, but you are aware the spot commences when they are very small. I threw the solution over the trees with a force pump. Some, by way of experiment, I tried by throwing it around the trees, but I cannot observe that it makes any difference. I think also that it has had an effect on the quantity of fruit. I am having a large quantity on trees that scarcely bore before, and I am convinced that the use of sulphate of iron is a benefit.

THE APPLE CROP.

Mr. P. E. BUCKE (of Ottawa).—I was the author of that paragraph in the programme, and I put it in with a view to ascertaining what the prospect was of the apple crop, in order that dealers in this country and shippers to other countries should be able to have some fair idea of the value and prices. I think if the growers knew the prices they should get, they would be benefited instead of the middlemen who now reap all the profit.

[Reports were then received from gentlemen representing the various sections of the Province, but as this report will not be published in time to make the facts of any practical value, the speeches are not given].

GOOSEBERRIES.

Mr. ROBSON (of Uxbridge).—I grow gooseberries to some extent, and they seem to succeed with me. I grow the Downing, Smith's Improved, and one of those English varieties, the Whitesmith.

Dr. CROSS (of St. Catharines).—This year the prospect for gooseberries is good. I formerly tried the English varieties, but with no success. They would mildew. The only ones that did not mildew were the Downing, Houghton and Whitesmith.

Mr. DEWHURST (of Uxbridge).—My Downings are growing very well.

Mr. HAMWELL (of Stouffville).—I have been growing the Downing and found them very profitable until two years ago, and then the frost killed the blossoms. This year the blossoms fell off again, and I do not know what the cause is.

Mr. DEMPSEY.—Our experience is changing every year. I certainly saw fine gooseberries on Mr. Beall's bushes yesterday. He has very fine Whitesmith's that were not quite as large as hens' eggs, but were certainly very fine. Our gooseberry crop is not so large as usual, and still our Houghtons and Smith's Improved and Downing are good. Our seedlings are looking very fine and promising.

Mr. BUCKE.—I used to grow the Houghton at Ottawa. I was the first person to bring them down there, and I disseminated a great quantity of plants there which the people said did very well, but they were very small. I then got some Downings. I used, however, to get fifteen cents a quart for the Houghtons. There is a man there who has about an acre and a half of gooseberries that he thinks are an English variety. He told me he made $360 last year off half an acre. He will not sell any, because he wants to keep the business and profits all in his own hands. The gooseberry business is one of the most profitable I know of, because the season continues for about six weeks, and the fruit is not damaged by lying in the shops, and everybody likes it.

Col. MAGILL (of Oshawa).—I grow some six or eight varieties, among them the Downing, Smith's Improved, Roaring Lion and Crown Bob. A few years ago I was troubled with mildew, but latterly I have mulched my bushes with coal ashes and now I have no mildew at all. The next thing I had to fight was the currant and gooseberry worm. I have found gooseberries very profitable, although I do not care very much for them myself. I simply mulched the bushes before and after you get them nicely cultivated.

Dr. CROSS.—A man near St. Catharines, who showed me fifteen varieties two years ago, hasn't one now, in consequence of mildew.

Mr. DEMPSEY.—I think they are reviving.

The PRESIDENT.—At the same meeting Dr. Cross speaks of Mr. Dougall of Windsor, as having some seedlings, and since then we have heard but little of them until an American firm has bought out his right in these gooseberries, and we now hear of them as something wonderful.

Mr. BEALL.—What about the gooseberries the President hybridized in London?

The PRESIDENT.—Mr. Smith can tell. I saw on his place some fine specimens. The reason I cannot grow them well is on account of their being on sandy soil. It is no use trying to grow gooseberries on sandy soil, and I have transplanted them to a clay loam.

Mr. DEMPSEY.—Mr. Saunders did not want to tell about his gooseberries. Notwithstanding it seems my nature to tell all I know. We have several varieties that look very promising, that are the result of crosses between the Houghton and Smith's improved, and the Charles Downing, with some of the best foreign gooseberries. The Whitesmith was used chiefly. Some of them have fruited very fine, while others seem shy in bearing. Those that produce the most attractive fruit bear a very thin crop. Those which produced the heaviest crop were good berries, about like Smith's Improved or Downing. I think some of them are going to be profitable. I have never seen any trace of mildew yet, but cannot say they will not mildew.

The PRESIDENT.—I should have said that I still keep the Houghtons, which produce good crops on sandy soil.

Mr. HILBORN.—I have not had any new varieties long enough to speak about them. I have Crown Bob, the Whitesmith and Industry. There is some fruit on the Industry this year, and it has not mildewed yet. I should not like to say much about them.

Mr. GLENDENNING (of Manilla).—We grow Smith's Improved, Houghton and Downing, and another variety which is a very good berry. I got it from a neighbour, who ordered a Downing, but this turned out a very much different variety. It creeps all over the ground very much like the Dewberry. We cut off a branch and sent it to Mr. Beadle, who said he had never seen the berry before, but was inclined to think it was the American Red. It is of a light reddish colour, not quite so dark as the Houghton and about the same size as Smith's Improved, which it resembles in shape. They seem very productive with me on a soil which is a clay loam.

Mr. C. J. WILSON (of Uxbridge).—This year my gooseberries are a failure, but I have no new varieties. I have one kind which grew from a seedling in the garden, a very large, yellow berry, that is very fine.

Mr. CROIL.—Our great enemy has been the currant worm. I do not think the Downing will mildew, and the others we are curing by applying sulphur. Our family is very fond of gooseberries.

Mr. WRIGHT (of Renfrew).—The only new variety I have is the Golden Prolific, but, as this is the first year it is fruiting with me I would not care to say much about it. The old varieties are the Whitesmith, which is fruiting fairly well, Smith's Improved, and Houghton's seedling, which bears almost anywhere. I have the thorny Downing, and think very little of it. I have been troubled very little with mildew, but a good deal with winter-killing.

Mr. HICKLING (of Barrie).—I have not been in the habit of growing gooseberries. We have the Downing, which is very large, and this year completely loaded with berries. I think very much of them and shall try to take more pains with them. As to mildew, I used to have it years ago, but I gave the bushes both ashes and sulphur, and have not been troubled since. I applied the ashes on the bushes and sulphur under them.

Mr. JOHN LITTLE (of Fish Creek).—The gooseberry and the bee I do not care much about handling. However, I got a few plants from Mr. Hilborn, and Mr. Bucke, that I shall tell you about next year. We have some of the Downing and Smith's Improved. I only prune the bushes myself and get someone else to gather the berries.

Mr. BEALL.—I got the Industry last year. I got it because I had every confidence in the statement of Elwanger and Barry, that they never knew it to mildew in their neighbourhood. It grew very nicely, but mildewed worse than any variety I have ever seen. I used to grow the Houghton, but it was too small. It was too much trouble. The Downing does exceedingly well with us, and bears a very good crop. I also have the Crown Bob and Roaring Lion, but the Crown Bob does not seem to be doing well. I may be able to report better another year. The Whitesmith I have had for about sixteen years, since I first commenced. I believe there is a good crop, and I do not think you will find half a pint of mildewed berries. I do not use sulphur on these. They have had no manure except the best of barnyard manure, and lots of salt almost every year. I do not stir the land, but two or three inches once or twice a year. I should judge by comparison that the Whitesmith was a very profitable variety, and I also think that the cultivation of gooseberries is the most profitable of all fruits. My soil is clay loam, with more clay a great deal than loam. There was apparently some doubt thrown on my statement that I had sold ten dollars worth from twelve bushes; but it was true. I have about three hundred bushes in another place, and they mildewed rather badly. I prune in the spring by cutting off everything that is on the ground, and that allows the centre of the bush to fill out again. This year in pruning them I did so with unusal severity, and this year they are mildewed worse than ever. I think there is one-half of the bushes on which I shall not touch the berries, although I cannot see why they should mildew. Last year on these three hundred I used three hundred pounds of sulphur, while this year I have used but twenty pounds up to the present. Judging from that part of my orchard I should say "never plant Whitesmith gooseberries," but here are my old ones doing as well as ever. I cannot account for these things, and therefore I say I do not know as much as I did ten years ago. This year I used hellebore for the fly in the spring, but it takes too much time. If you want to fight the insects though, you must commence in time. I find Paris green to succeed against insects pretty well.

Mr. BUCKE.—There is nothing in the world like Paris green for the gooseberry or the saw fly; but you must not put it on after the fruit has set.

Mr. CROIL.—I never saw hellebore fail.

The PRESIDENT.—I never saw anything quite so effectual as Paris green; but those which escape the first application must be looked after. We put on Paris green the first time, and hellebore the second, although I do not think there is much danger in using Paris green. We have heard a good deal said about the Houghton. Now, there are two berries in the market known by nurserymen as Houghton's seedling.

When I planted out largely some years ago, among the gooseberries I planted were some sixty Houghton bushes. I noticed that some differed very much from others, and when they began to fruit, the difference was equally marked. What I got from one nursery was different from what I got from another. I found that one was the true Houghton, while the other was the American seedling. The latter has a very upright growth, and I would recommend Mr. Little to get that fruit for it has no thorns on it worth speaking of. It is a very great bearer, and when I was growing for profit, I found it one of the most profitable I ever grew. There was no trouble about mildew, and they would always sell. I noticed that the dealers in London were selling these small berries, and it is really one of the finest for bearing we have. I met a gentleman on the street the other day who said he could grow the larger berries without any trouble, and remarked that it was all in the pruning. He said :—"I used to have them mildew every year when I let them grow as they would ; but now I only allow a certain number of spreading branches that will remain some little distance above the ground, and I can grow Whitesmith gooseberries without mildew." I did not like to say anything to discourage him, but I think he will find some season when there will be plenty of mildew on them. I believe, however, there is a great deal in this system of pruning. I believe also, that a clay soil is the one for gooseberries, and prune as I have indicated, by cutting out the centre and allowing the air to get through freely. There was a gentleman in our town rather noted for his gooseberries. He had some one or two hundred bushes, and had a large number in the market every year. His idea was that mildew arose from lack of moisture. He watered his bushes every morning, or every alternate morning, except when it rained, and he could show bushes so treated free from mildew, while bushes not so treated were mildewed. I think pruning and soil are important elements. I think any one who can grow anything else, can grow Houghton's seedling, and I like its flavor quite as well as the Whitesmith. This mulching which has been spoken of, is valuable as it keeps moist air underneath the bushes, which bears out the idea that mildew has something to do with lack of moisture.

Mr. BUCKE.—No doubt one of the greatest helps in growing gooseberries is to have rich soil.

Mr. DEWHURST (of Uxbridge).—I keep the saw-fly off with soot.

RASPBERRIES.

Mr. HILBORN (of Uxbridge).—It is true I have done something in growing raspberries, and to the extent I have cultivated them I have been very successful. I look upon this as a very good place for growing them. The labour is no more here than elsewhere, and if the labour is applied, I think we will always get good crops. We have the Philadelphia, and Clarke and Mammoth Cluster. We get enormous yields from the Clarke. My soil is a heavy clay, but I find others with a light soil growing good crops. Still, I think what I have is the best. If they are trimmed back, I do not think there is any difficulty about winter-killing. Snow sometimes break them down, but if they are protected I fancy we need have no difficulty about growing raspberries to any extent.

Mr. DEWHURST (of Uxbridge).—I have found the Philadelphia to succeed well.

Mr. MILLER (of Uxbridge).—I grow the Clarke, and have two rows planted the length of the orchard. My only trouble is freezing in the winter, and they bear well when not frozen down.

Mr. MCGILLIVRAY (of Uxbridge).—Mine are nearly all Mammoth Cluster, and they bear very well. I was describing another to Mr. Hilborn, and he calls it Kittatinny. Berries are really a large crop here.

Mr GLENDENNING (of Manilla).—I have been growing a few berries for a number of years. We have good success with the Mammoth Cluster. This year, in a few exposed places some have been cut down with the frost. We never give them any protection whatever. We also grow the Gregg black cap, but it was not hardy, and froze to death this year; while in other years it seemed to ripen well, but the wind dried them up on the bushes. I also have Philadelphia and Cuthbert. This year I went to dig them up, but when I came to where the Philadelphia was I saw that it was frozen below the snow line, and I concluded to let it remain another year, and now they are covered with

young fruit. The Herstine I cut down. I also grow number 53, sent out by the Fruit-Growers' Association. I believe our President was the originator. It is hardy, and covered with a large quantity of fruit. We find the fruit very tart, and it is splendid for canning purposes, although a little on the small side.

The PRESIDENT.--It requires good manuring.

Dr. BLACK (of Uxbridge).—There is no doubt that this neighbourhood is well adapted to the growing of berries.

Mr. PEARCE (of Uxbridge).—I have had some little experience in the growing of berries. We grow the Philadelphia, but we find them unprofitable to pack, on account of the berry being shallow, and inferior in quality. We have also grown the Turner, which is hardy, productive and good. It is a little soft; but a cousin of mine takes it to Toronto market, and finds the business profitable. I have also tried the Cuthbert, which is productive and fine; but it is scarcely hardy enough to stand our winters. The Mammoth Cluster is doing nicely. We have planted the Herstine and Doolittle; but so far we have found the Turner the best.

Mr. KINSEY (of Uxbridge).—I find, in an exposed place that the Mammoth Cluster is not hardy. It kills right off with me. I find with others, however, that it stands. The Kittatinny I do not succeed with, and the Clarke was not hardy. In a sheltered position it might answer, but it does not do well with me. I intend to change the location of the Mammoth Cluster.

The PRESIDENT.—It is a very unusual thing for the Mammoth Cluster to be injured by the cold.

Mr. HILBORN (of Arkona).—I think that in blacks the Tyler is perhaps the best and hardiest of the early varieties, and the Mammoth Cluster would come next. I do not know anything better among the blacks. The Tyler is hardier than the Mammoth Cluster. The Souhegan, which blooms a day or two after the Tyler, is very much the same; in fact in the fruit I see no difference. The Gregg is a little tender, and a number of us have been surprised to hear that the Clarke is not doing well in this neighbourhood, as they were in first-class condition with me, at least. You must test to see what will suit. In the purples, Shaffer's Colossal is the best. It is a purple in colour, being a cross between the red and black. The bush is the strongest grower of any that is grown, and it is very productive and bears its fruit on for a long season. It continues very late. It has a good crop and is quite a nice fruit. For canning purposes I know of none to equal it, and for marketing it bears a sort of dull red or brown colour which spoils its looks, but not its flavour. It is darker than the Philadelphia, and does not take on the market. For red berries I think the Turner is perfectly hardy, and where they will not stand there is no use trying any other. It is a little soft for shipping, but the flavour is good. The Delaware is too tender. The Herstine is quite hardy and of good medium size, but lacking quality. The Niagara is not hardy enough for me. It is about the size of the Cuthbert, and not as good in colour. The Cuthbert has suffered with me this year, and has been cut down one-half.

Mr. JOHN LITTLE (of Fish Creek).—I can corroborate what Mr. Hilborn has said about the hardiness and durability of the Tyler, Souhegan, and also of the Hopkins. The two former, especially, were alive to the top, and the Hopkins was injured very slightly. The rust seems to be coming on the Souhegan, and I do not think it will be reliable. I shall take it away, as anything that shows inferiority with me I do not allow to stay. Shaffer's Colossal would raise cordwood, I think, if thrown on top of it. It is a good grower, and a good berry, and there is no better canner in all the raspberry family. It may have that fault that it is a little dark in the colour, but like some of ourselves, we are not all favoured alike in that respect. Bebee's Golden I fruited last year, and while it is good to take from the bush and eat, if it is canned or preserved, you might as well chew a stick. The Reeder is not grown extensively in Canada, but is very fine and hardy. The Parnell, of which I expected so much, has died. The Mount Clair is fine both in fruit and plant, and stood the winter remarkably well. The next that I got from a gentleman in New York was the Meredith Queen. It takes the palm for the most beautiful fruit that I have ever grown, and I have grown most of those that have ever been named in my day. The originator sold those plants for $5 a dozen this spring. It was alive to

the top this year. It is as large as the Cuthbert, that is medium, and when ripe it is of an orange colour. It is delicious. I have the Cuthbert yet, though it is a little tender. The Clarke I threw in the ditch long ago. The Delaware is a very fine berry. The Turner has done remarkably well with me, and so has the Brandywine. Then last, but not least, is Arnold's red hybrid, and I have nothing in all the list to equal it. It has large red berries, and is the strongest and healthiest in all my garden. The Welsh would nearly resemble the Cuthbert, but it is hardly as strong in the cane, although a healthy grower and alive to the top. The Ohio is a black cap. It is not very large, but is considered one of the best of the black cap family. The tenderness of some plants is the result of bad cultivation and pruning.

Mr. DEMPSEY.—I have had very little experience in the cultivation of raspberries compared with Mr. Little. I presume, however, that anything that would succeed with us would succeed with you. We have found the Philadelphia, not like I have heard some of you speak of it, unprofitable; but one of the most profitable we have ever had. We found that buyers who tried them one year for canning and jams wanted them the next. They make superior jams to anything we have ever tried. There is one fault, however, and that is in the small size of the berry, which also predisposes the plants to overbear. The Cuthbert with us is a very good berry, but it never overbears. It is sufficiently hardy, and produces large, solid fruit, which ships well. We think well of it, and it has never winter-killed with us. I like the Reliance, which is a very fine berry, but a little on the soft side. The Ohio with us is very prolific and hardy, but there is a little too much picking to the quart to satisfy me. I do not like the flavour of the Gregg, and it picks something like pulling teeth. It is not always hardy. If I were cultivating a plantation of raspberries, I would confine my attention strictly to the Doolittle and Mammoth Cluster, and stop there. The Mammoth Cluster is the most profitable cap berry we have grown. It is hardy and produces enormous crops, and we have never failed to gather the whole crop in three pickings, which is quite an item where we are dependent upon hired help to get off our crop of berries. The Mammoth Cluster ripens uniformly, and can be gathered almost in handfuls. I do not think the Tyler will ever give us the satisfaction of the Mammoth Cluster.

Mr. LITTLE.—The Mammoth Cluster and Doolittle die out in blight with me.

Mr. DEMPSEY.—If I were going to plant out red varieties, I would take Reliance and Cuthbert, and Turner. The Turner is a little softer than the rest, and is more difficult to ship; but for home use I like it very much.

Mr. HILBORN (of Uxbridge).—Raspberries follow so closely in the wake of strawberries that, unless we can get a high flavoured berry, we do not care for any. It seems to me, therefore, that it is of the greatest importance that we should grow as high-flavoured a raspberry as possible, and also one that will retain that flavour in the can. Now, I think perhaps some of the gentlemen engaged in the business could give us an idea as to which varieties combine these points of excellence. Another question is this: Is there any preventative for the yellow rust in our black raspberries? In some parts of the country that seems to be the prevailing evil, and I have personally lost quite a number of bushes through it. I have not been able to discover anything to cure it.

Mr. DEMPSEY.—For jams and canning purposes there is nothing I have ever seen to equal the Philadelphia, and the Turner is also fine. If we want highly flavoured berries, we may take some of the European varieties. Judging from my own taste, I would not give one quart of raspberries for a peck of strawberries, and I think the strawberry flavour does not compare with that of the raspberry.

Col. MAGILL (of Oshawa).—On my soil, which is a sandy loam, I keep my raspberries thoroughly cultivated. I prune the bushes down to two and a half feet in height, leaving four or five canes. The red varieties that I grow are Cuthbert, Franconia, Philadelphia, Turner, Herstine, Crimson Beauty, Superb, Reliance and Thwack. I called upon the originator of the Crimson Beauty in Kansas, and it is said to be there the best cultivated in America. I think very much of the Clarke. On my ground it is a very heavy bearer, and the only thing I can say against it is its softness, which prevents us from shipping it any distance. The Cuthbert is one of the best shippers we have; but I am sorry to say through injury this last winter the canes have been cut down about one-quarter.

The Franconia does well, and is a splendid shipper. I give none of my raspberries any winter protection. Mr. Dempsey and I agree on the flavour of the Philadelphia; but I do not think so much of the Turner as some gentlemen who have spoken, and it is not as prolific as some others. The Thwack is hardy, a good grower, and a good bearer; but I do not like the flavour, and I am discarding it. My black caps are Gregg, Doolittle, Mammoth Cluster, Souhegan and Tyler. We can make more money out of the Gregg than any other. The Mammoth does very well, but not so well as the Gregg The Tyler does very well. The Clarke takes the best with us of perhaps any of them for table use, and the Cuthbert is our best shipping berry. In cultivating raspberries, you must use your hoe freely.

Mr. CUMMER.—How long should raspberry bushes be continued before replanting and renewing?

Col. MAGILL.—Almost indefinitely by mulching or manuring the ground. I have bushes that have been bearing for fifteen years—the Clarke, and Philadelphia, and Herstine. They like plenty of food, just as we do.

The PRESIDENT.—I do not think many persons will get much satisfaction in cultivating the same variety in the same spot for that length of time. I have found that seven or eight years suffice, and then it is much better to take them up and plant a new bed in some other location. After taking seven or eight heavy crops off the same spot, such crops as the Philadelphia will bear, you exhaust certain constituents of the soil, which the berries use up. Col. Magill's case may be an exception; but, as a rule, I think at the end of seven or eight years it is better to remove the plantation to a fresh spot. With regard to planting, it is usually done in the spring, and the distance apart will depend whether it is in the garden, or where you want to use a horse cultivator in the field. If in the field, it is customary to plant rows about five feet apart, and put the plants about eighteen inches apart in the rows. In the garden, three to four feet apart will do, except for Shaffer's Colossal, which sometimes takes eight feet. From five to six feet apart is the usual field distance, but where land is scarce three to four feet will do. As to soil, raspberries will grow in almost any soil that is well nourished. There are some varieties which seem to do best on heavy soil, which is only learned by the experience of the individual grower. In pruning, it is very important that some of those varieties of thrifty growth should be dealt with early in the season, and such varieties as the Turner require thinning out in the summer, or the canes will not have that vigour you would wish them to have to carry a crop the following season. I do not know that it is necessary for me to add to what has been said about varieties, although some of us differ. Col. Magill grows the Franconia; but I never found a season that they would survive. I also tried the Clarke, but they were so unsatisfactory that I took them up and threw them away. The largest part of the canes would often get killed. The Turner gives me abundant satisfaction. I think it is the hardiest of all the varieties, the highest flavoured, and perhaps as fine a colour as any. The only objection to it is its softness for shipping. The Cuthbert has been spoken of as hardy, until this last winter. The Philadelphia is perfectly hardy. I also find the Caroline to stand our winters. It did not suffer, and came out robust in the spring. It was sent out with a great flourish of trumpets, and was heralded as being equal to Brinkle's Orange. It is not; but is much superior to Golden Cap. The Gregg I have found tender, and the Mammoth Cluster hardy, and Shaffer's Colossal has also been hardy. I do not consider Brinkle's Orange hardy, and, on account of winter-killing cannot get a crop.

Mr. HICKLING (of Barrie).—It was not tender with me; but I believe that mine is not the general experience.

Col MAGILL.—I plant my bushes six feet apart in the rows, and four feet in the hills.

Mr. BEALL (of Lindsay).—I had Brinkle's Orange for about ten years. I had fruit every year; but there was one year it killed very badly.

Mr. BUCKE (of Ottawa).—We protect our raspberries by turning them down and putting sod on them. In planting, it is best to do so when young shoots come up, and next year you will have a good crop.

Mr. DEMPSEY.—We find when the soil is exhausted, after eight or ten years, or sometimes six years, that the yellow rust comes.

Mr. HILBORN.—I have seen it this year on perfectly new plants.

The PRESIDENT.—Sulphur or sulphate of iron should be used, and the result reported on.

After the customary vote of thanks, the Summer meeting came to a close.

THE EXHIBITION.

Your Committee having examined the fruits exhibited, beg leave to report as follows:

Mr. A. M. Smith (of St. Catharines) exhibits nine varieties of strawberries, consisting of Early Canada, Mary Fletcher, Arnold's Maggie, Arnold's Pride, Glendale, Atlantic, Longfellow, one seedling and one unknown. All are well ripened and of good average size. Early Canada is not high enough in quality to be valuable for amateurs; Mary Fletcher, good quality; Arnold's Maggie, rather insipid; Arnold's Pride, good; Seedling, partakes a good deal of the Wilson flavour, but in form not so perfect; Glendale, as usual, leaves a rather unpleasant aftertaste; the unknown variety is of fine flavour and somewhat resembles Arnold's Pride in form; Longfellow, although not high flavoured is pleasant, and may yet prove of value; Atlantic is a handsome berry, although irregular in form, and in flavour good to very good, and judging by the specimens before us it must come into favour for market. Col. Magill (of Oshawa) shows a fine specimen of Crescent Seedling, and also a well ripened basket of Wilson.

All of which is respectfully submitted.

ALEX. MacD. ALLEN,
J. C. CUMMER,
JOS. BASCOM,
} *Committee.*

Uxbridge, June 25th, 1885.

FALL MEETING.

The fall meeting was held in the Town of Wingham, County of Huron. The opening session took place in the Town Hall on September 16th.

The President, Mr. William Saunders, of London, occupied the chair, and in opening the meeting explained the methods by which the Association was conducted and the end aimed at. The opinions of local growers was most desired, as well as their experiences.

The regular order of procedure, as laid down in the published programme, was then begun.

APPLES.

QUESTION.—The best varieties for export, and why? That is, What are the points of superiority?

Dr. SLOAN (of Blyth).—I have had every satisfaction in growing the Northern Spy. They have fruited more regularly than any other. Another apple grown here is the Golden Russet, and the only objection I have to it is its size. I like a large apple, and when picking it you see your barrels accumulate rapidly. The Ribston Pippin does well in this district, and the King of Tompkins is also a fine apple, although easily bruised. It must be packed with great care to ship successfully. I have the Swaar, but have not shipped any of them yet. In this district we must have the hardiest apple we can get, and the Mann I think would be one of the finest varieties we could get hold of.

Mr. HARRISON (of Belfast).—I can corroborate what Dr. Sloan has said, that all through this section the Northern Spy is in the greatest demand. Their hardiness and little liability to injury when being handled are their principal points of advantage. It is a prolific tree and that is also in its favour. It is not much subject to the attacks of insects. The other varieties Dr. Sloan has named, I should have named had I preceded him, as those which do best in our section for shipping purpose.

Mr. A. M. SMITH (of St. Catharines).—Have you noticed the spot here very much?

Mr. HARRISON.—There is a slight difficulty in the western section of the county, but not here. It has been noticed that even the Snow apple does not spot with us.

Mr. P. E. BUCKE (of Ottawa).—Does the Northern Spy come early into bearing?

Mr. HARRISON.—It is generally eight or nine years old, or more.

Mr. JENKINS (of Wingham).—I grow apples, but I have never done anything in the way of shipping. My favourite winter apple, however, is the Northern Spy. I find it to be nice, large, and of splendid flavour. It is good for cooking and keeps well. I need not go over ground that has already been touched upon, but say that the Northern Spy tree seems to stand the winter here better than any other.

Mr. GOTT (of Arkona).—Nothing has been said of the Rhode Island Greening and the Baldwin.

Dr. SLOAN.—The Rhode Island Greening will not hang on the tree until it is ripe. It is a magnificent apple, but I could not recommend them for this neighbourhood. The Baldwin is a good apple, but I have not had good luck with it. The trees winter-killed or died from some other cause. I planted them out five years ago. I believe they are superior to anything we have as a shipping apple. They could be shaken off without being much injured, but the Northern Spy would be injured very much.

Mr. HARRISON.—There is a species of dry rot on the tree as well as the fruit on the Baldwin. At the beginning the surface of the rot is the size of a finger-nail, and then it penetrates to the centre. That makes them objectionable.

Mr. MORTON (of Wingham).—I am surprised by the statement made concerning the Snow apple spot. We could hardly get a respectable sample at our Fair, and orchards around here are greatly troubled with it.

Mr. A. MACD. ALLAN (of Goderich).—It occurs to me that if I were buying apples up here, I would steer clear of Dr. Sloan. He speaks of shaking off the Baldwin. I should not buy for shipping any apples that were otherwise than picked. The Baldwin is very hard and of a colour that would not show a bruise; but it would be discovered in time to catch the purchaser on the other side of the ocean. The bruise, however, will dry up, and does not injure the apple very much. There is more money made out of the Baldwin than any other we have. The American Golden Russet comes next. The objection applied to it was that it was so small. That is the fault of the grower. It requires to be thinned out. It is apt to bear heavily, and while we have some very fine specimens on the tree you will find many very inferior in size. It will pay any grower to thin out the fruit of the American Golden Russet. The Rhode Island Greening a couple of years ago was down very low in the European market, but now it is up again. It is inclined in some sections to a fungus spot. This year, however, the crop looks well and has every appearance of being free from spot; and will, I think, hold its own in the European market. I think that, although the Baldwin holds the lead as a money-making apple, on account of its poor quality it will go down. When you come to keep it for sometime it is too woody. It is not a good table apple. The Northern Spy is about as satisfactory an apple as we have, both for family and dessert use. I have never seen any trouble in spotting with the Mann apple. It is a clean but not a rapid grower. Its habit is to bear a good, fair, average crop every year. The fruit does not require thinning out, and it is generally so hard that it will scarcely bruise. It will not come into use until after New Year's or February; and will hold its flavour right through. A good deal of money has been made out of the Canada Red. It is a good shipper, but not extra in quality. The Ben Davis is poor in quality, but is a good sample. The tree is inclined to bear too heavily. The Wagener is a good apple, but inclined to overbear and bear very early. I consider the Ontario is going to be one of our most valuable apples. The more I see of it, the better I like its quality, and it is as good a cross as can be expected

between the Northern Spy and the Wagener. It has the shape of the Wagener with a great deal of the colour of the Northern Spy, and anyone who is a judge of apples can detect the flavour of both of those varieties. It is not inclined to grow to a very large size, but is a good medium apple and will ship and keep well. It has a better shipping skin than the Northern Spy. I have shipped the Ben Davis, but it is too poor in quality to recommend itself. It is a good shipper, and so far has taken very well in the Old Country.

Mr. P. E. BUCKE.—How do you proceed to thin apples on trees?

Mr. ALLAN.—That is a matter that has to be gone about very carefully. If the tree is large you must get up into it, but with the American Golden Russet you can reach in as far as there is any need to. A pair of long scissors are about as nice a thing as you can use.

The PRESIDENT.—What about the Wagener as a shipping apple?

Mr. ALLAN.—It is very good, and it suits the English dessert taste as a dessert fruit. They do not care about a large apple; they like one below the medium, if anything. The King of Tompkins' County is an excellent apple for the English market; but there is one difficulty in growing it, and that is its liability to fall from the tree because the stem is so slender. It does not have so strong an attachment as the Rhode Island Greening. It is, however, a fine quality apple that will always holds its place there; but the Baldwin, I do not believe, will hold its place.

The PRESIDENT.—Do you find the prices paid for the Spy and Wagener to be equal?

Mr. ALLAN.—No; the Northern Spy is a little higher, but I think the Ontario will stand about equal with the Northern Spy. It is a good bearer and regular. I have noticed that all the trees sent out by the Association are in good bearing and having nice crops of fruit.

Mr. BUCKE.—Have you shipped Grimes' Golden?

Mr. ALLAN.—Yes; it is about as pretty an apple as I have shipped, and when it has attained its full colour, it will bring good prices. There is a prejudice against any apple that is green in colour. Take the Swaar, it is a fine dessert apple and of beautiful quality—as fine, indeed, as any man need wish to taste; but we cannot get good prices for it on account of the colour.

Mr. A. M SMITH.—What about the Ribston Pippin?

Mr. ALLAN.—It is very good, and we get good prices. Talking about quality, I was struck with the opinion of a gardener near Edinburgh. He had a barrel of Pippins I had shipped over and he was struck with the quality being different there. He wrote to me and said he would not be satisfied unless I grew some from a cutting off his tree. I grew some for him last year, and he was satisfied they were as good as before and far superior to what he had grown.

Mr. JENKINS.—I would like to ask a question here with regard to the Rambo. In the first place, the tree is miserable and has never done anything with me, and with regard to bearing it has only done so once in three or four years. When the fruit does come it is scabby and we can scarcely find a specimen that has not been affected with the worm. It is the worst apple I ever tried to grow.

Mr. ALLAN.—That is its character all through this district. It is a very poor bearer, and what fruit does grow tries to get out of your reach altogether. Where you get it perfect, however, it is a very nice dessert apple about Christmas or New Year's; but we have many others superior to it.

Mr. GOTT.—Allow me to say that the Rambo, in our county, is considered to be one of our best dessert apples about the holiday season, and in its habit of growing it is in every way satisfactory. My experience in regard to shipping apples is not large, but I have had considerable as a grower. As soon as we have the apples grown, we sell them to some man who understands the shipping and he takes them away. With respect to the varieties preferred, the buyers never pass by a Baldwin, and it is really a profitable apple. It is grown everywhere. Almost everybody who is planting trees will ask for the Baldwin, as though that were the only apple they knew anything about. It is not only grown largely but it is grown very beautifully. The samples are perfect. The trees during the

season of bearing are pictures. The Northern Spy is popular and profitable. So is the Rhode Island Greening. We have great satisfaction with these three apples, and we consider them to be our standbys. There are others coming in. The King of Tompkins is popular as a shipping apple, and buyers are very fond of it. The only apple they appear to be careless about is the Tolman Sweet. We can grow it perfectly. Growers now are dividing their orchards into summer, fall and winter apples.

Mr. BUCKE.—Which bring the largest prices, summer, fall or winter?

Mr. GOTT.—Summer and fall apples are priced the same, but for the winter we get an extra figure.

Mr. BEADLE.—About how much is the difference?

Mr. GOTT.—The difference this year is 25 cents per barrel. The price for summer and fall was 75 cents per barrel, the grower picking them and laying them on the ground, and for winter apples the price paid was $1. Our crop is enormously heavy, and our farmers think this a good price. There is no more difficulty in growing winter apples than fall and summer, but the nature of the market makes the difference in the price. The winter apples are for exportation. Our summer apples, especially the red Astrachan, were very profitable, and the growers got 75 cents for those. This year it was a full crop with us, but they do not bear regularly every year. The Sour Bough and the Sweet Bough are popular, but they are generally used at home. We grow the Duchess of Oldenburgh, and it is one of the most profitable we have at that season. The samples are enormous. Young trees coming into bearing bear very heavily and the fruit is very large. The buyers will pay good prices for them. It is the opinion of some of our growers that it would be a fine thing to go into the growing the Duchess alone, as no other variety gives such satisfaction. The Ben Davis, notwithstanding its low quality, is popular among buyers. Its perfect colour and symmetry will always command a market for it. The Mann is very fine. We fruited some of the Western apples, the Wealthy especially, and I think there is great promise in it. I might also say that the Westfield Seek-No-Further is popular among the buyers, and the Swaar is sought after by shippers. It is largely grown.

Mr. A. M. SMITH.—My experience does not differ very much from that of Mr. Allan. I would like to mention one variety to which Mr. Gott referred, but Mr. Allan did not; that is the Seek-No Further. It is a good apple. I would also like to say a word for the Tolman Sweet. I send them to the Boston market, and they command as good a price as any other. There seems to be a demand for that particular variety there. They use them for baking, and they are particularly good for that. Some of the early apples that have been mentioned are very good; but I would not recommend the planting of too many for profit. The Duchess of Oldenburg and Red Astrachan are among our best early apples, but if planters were to go into them as largely as they do into winter fruit, you would find our market overstocked.

Mr. ALLAN.—I have sent them to the Old Country this year.

Mr. SMITH.—That is a new thing. In the vicinity of Toronto this year, growers have made more out of Red Astrachan and the Duchess than winter apples. The Astrachans brought seventy-five cents in twelve quart baskets. I have a friend in Grimsby who raised a large quantity, and he averaged about fifty cents a basket of twelve quarts. It takes seven or eight baskets to make a barrel, but the commission is of course to be taken off the figures I have mentioned.

Mr. GOLDIE (of Guelph).—What about the Early Joe for home use?

Mr. SMITH.—It is a shy bearer and liable to spot, and would never pay for marketing.

DR. SLOAN (of Blyth).—The Early Joe with us fruits well and succeeds well; and for home use it is very good and of a fine flavour.

COL. MCGILL (of Oshawa).—I have no experience in shipping, as we sell our apples in the orchard, except for local market. I market all my early fruit at home—the Red Astrachan, Duchess, and Yellow Harvest. They have averaged me from $1.20 to $1.50 per barrel, and I get the barrels back. I think a great deal of the Early Joe for my own table. I am intimately acquainted with shippers, and they speak highly of the varieties Mr. Allan has recommended. There is one peculiarity about the King of Tompkins, you

are very seldom troubled with small apples. You get a large quantity of apples from a tree on account of their size. My Russets have never given the satisfaction that my Baldwins, Spys and Greenings have. There is not enough of difference in the price to make up the shrinkage in the quantity on account of the smallness of size. My experience has been short, but I have known apples to lie on the ground for three weeks after they had been picked, on account of delay on the part of packers. There is a large amount of heat there, and there is an everlasting culling going on, robbery by boys, etc. This is all waste. Last year my son lost nearly half his apples from the neglect of the packers to come around in time. Nor has this been an isolated experience. I think very much of the Rhode Island Greening, and we are not troubled with their falling from the tree in our section. I think there has been more fruit produced of the Baldwin variety, and more money made out of it in the county of Ontario than any other, notwithstanding the fact that the trees are a little tender.

Mr. GOTT.—With respect to this method of picking and buying, we have some pretty honest buyers, and they do not go at their work in a hap-hazard way. Their practice is to advise about the time they want to pack the fruit, and with respect to the culling it is done in a fair, honest way. If the fruit is very badly bruised or injured, it will be thrown out; but if the grower thinks he is being dealt unfairly with, he has the privilege of throwing up the bargain. I would not like a bad impression to go out regarding buyers.

COL. MCGILL.—I had no reference to buyers in the West.

DR. SLOAN.—A buyer took one hundred barrels out of my orchard and adopted the plan of putting them in a shed on straw. I have sixty-one trees, and twenty-one of those are Northern Spy, and the rest are made up of Greenings, Swaar, and so on. Last year out of 101 barrels, 73 were the Northern Spy, so you can see the proportion there. They yield two barrels to one of any other. I would recommend any man who has apples to sell to wheel them into a shed and deposit them on straw.

Mr. A. MCD. ALLAN.—There are tricks in all trades, and I see Col. McGill is finding out the tricks of the fruit shipper. The buyer wants them on the ground, and that is the best place for them. I never allow them to be packed until they have been there at least ten days. The grower is asked to lay the good fruit in a pile by itself, and then when the packer comes, he can see whether any bruises have been caused by shaking. Many an apple may look very fair on the tree, but when it is down on the ground a worm will bore its way out into the soil. Then they go through the sweating process and the skin toughens.

This closed the forenoon session.

On resuming the session in the afternoon, the Question Box was opened, and the following queries dealt with :—

APPLE BARRELS.

QUESTION.—Is there a legal size for apple barrels?

Mr. ALLAN.—A legal size was provided for by Act of Parliament last session, making them the same size as the ordinary flour barrel, holding three bushels of apples.

THE YUCCA PLANT.

QUESTION.—Will the Yucca plant stand the winter out of doors?

Mr. BEADLE.—It will stand outdoors in the County of Lincoln.

The PRESIDENT.—It is perfectly hardy in the neighbourhood of London, and generally flowers every year. The current year's growth does not produce flowers until the next year. My Yucca plant had three flower stems on this year. It is a desirable plant and deserves to be better known. I imagine it would be quite hardy in this district.

Mr. BUCKE.—I have frequently wintered the Yucca plant in Ottawa, but never had any success in getting flowers. It will certainly be hardy here.

THE RUSSIAN MULBERRY.

QUESTION.—Has the Russian Mulberry proved hardy? Would it succeed in our latitude?

The PRESIDENT.—It is perfectly hardy about London, and has not shown the slightest sign of winter killing. I had an opportunity of testing the fruit this year, and wrote an account of it to the *Horticulturist*. It was about the size of an ordinary wild blackberry. The gentleman who brought the fruit to me said he had some five or six quarts on a tree, and that this was the first year of bearing. It was of a very pleasant flavour, and I think it would be a desirable fruit if it produced in any abundance, as it seemed to do on his tree. The trouble, however, with these Russian mulberries is that most of them are seedlings, and, as is the case with most seedlings, they vary in quality. This gentleman had another tree which ripened its fruit ten days or a fortnight later. A week or two later than the time I am speaking of one or two specimens were brought me from a tree on my own grounds, but they were not equal in size to those I had seen previously, showing that the experience of one person is different from another. I do not suppose there is any means of arriving at uniformity unless the plants are raised from cuttings.

Mr. A. M. SMITH.—I fruited them in the nursery rows this year, and they varied very much. There is nothing definite about a seedling as to what you are going to get. The colours of the fruit were different. Some were white, some lilac colour, and some black.

The PRESIDENT.—Those I have seen were black.

Mr. W. W. HILBORN (of Arkona).—I think they are not alway hardy, as we had some trees killed to the ground. They sprouted up again; but those that were killed worst were on strong clay loam. On higher and lighter soil they stood pretty well.

Mr. GOTT.—The mulberry seems quite hardy, providing the soil is high; but on low soil it is not. We fruited them this season, and as you remarked the flavour was very fine, but the specimens were small. They were a beautiful black colour. I had more than one tree fruited, and they were not alike. My idea is that as the tree grows larger the fruit will be better.

Mr. ALLAN.—I have seen several of them, and it is evident there is a difference with regard to hardiness. In the Township of Stanley I find them quite hardy, and complaints about tenderness are generally made during the first two years.

Mr. BUCKE.—We have quite a number in Ottawa, and they seem quite hardy. It grows so thickly that some people are making hedges out of them.

The PRESIDENT.—The result of this discussion should lead those who have succeeded in getting a good mulberry to keep it.

ADDRESS FROM THE CORPORATION.

At this stage the Reeve of the town, who was accompanied by members of the Council, presented an address of welcome, to which the President replied in suitable language, and in a few sentences explained the objects of the Association, and the methods employed in carrying out its work.

PLUMS.

QUESTION.—Do plum trees suffer from the winters in Huron? Are they affected by the black knot? Is the fruit stung by the curculio? What varieties are best adapted to Huron?

Mr. YOUHILL (of Wingham).—I got some trees four years ago from London, but eight out of ten that I planted took the black knot, and I destroyed them. The frost of last winter left me only one tree, and I see that the surviving tree is affected by the knot. A great many have suffered from the curculio, and I think the suggestion thrown out by the Society of jarring the tree has been used.

Mr. GOTT.—What varieties suffered?

Mr. YOUHILL.—There were three or four different kinds, but I do not recollect the names of them.

Mr. BUCKE.—Did you use any means to arrest the black knot?

Mr. YOUHILL.—I cut them off wherever I saw them, even in the branches; but nothing seemed to check the growth.

Dr. SLOAN.—I have had an unfortunate experience. I planted 400 trees. I got 200 in St. Catharines, 100 in Toronto, and 100 in Windsor. The winter of 1883 killed them all but fifteen trees, and those that remained are Sharpe's seedlings. I have lost over 400 plum trees in the winters of 1883 and 1884. They were fruiting beautifully, and I cannot tell the reason why the hard frost should kill them all. I had fifty Lombards, fifty Washington, twenty-five Bradshaw, and twenty-five Pond's seedling; but they all went the same way. The black knot did not trouble me but very little. I always put them in the fire. I believe that knot is propagated by an insect—a yellow fly. If any of you dispute that theory, try an experiment. Cut off the knot, put it in a jar carefully, and cover it over with a fine wire. You will have an insect hatch out, and it will be a yellow fly. The curculio has troubled us, too. The year before I lost my trees we had a good crop.

The PRESIDENT.—What were the proceeds from your plums? What did you estimate the value at?

Dr. SLOAN.—I estimated that the provocation I received in the end set all that aside.

The PRESIDENT.—But if two or three years' crop paid you, and an exceptional year destroyed all your plum trees, your duty was to plant another lot.

Dr. SLOAN.—I am too old for that.

Mr. GOVENLOCK (of Seaforth).—I had about fifty trees, but four or five years ago I lost them all. I had not much trouble from the black knot, as I could keep it in check, but these little fellows, the curculio, used to take most of my plums. About the time I mention, however, whether from the severity of the frosts or not, they began to die off one by one, and I have not taken much interest in plum raising since. Any that were left are bearing well.

The PRESIDENT.—I am afraid Dr. Sloan is on the wrong track about that little fly. The black knot is the result of a fungus growth, disseminated by small spores that are carried through the air. These little yellow flies are visitors; they use the knot as a sort of feeding ground. If you shut up samples of the black knot, as the Doctor has described, you will be pretty sure to reap a harvest of these small insects; but they have no more to do with the production of the black knot than the maggot in meat has to do with the production of the meat. The whole trouble arises from these small seed particles, which are flying about in the air. With regard to the curculio, we have had that matter pretty well ventilated in our recent meetings. The jarring process is being replaced by treatment with Paris green. Syringing the tree with a preparation of this will keep the curculio under with less labour and quite as effectively as the jarring process. One or two applications, or a third, if the rains wash off the deposit, are all that are necessary.

Mr. BUCKE.—There never was such a thing known in the Ottawa district as the black knot. I got a tree with it from Mr. Dempsey, but it has not spread to the other trees.

Dr. SLOAN.—I do not presume to offer an opinion in opposition to so distinguished an entomologist as the President; but if the knot is caused by spores, is it possible that they can survive our hard winters?

The PRESIDENT.—It would be a long process to explain this whole matter, but if Dr. Sloan will look over the reports of the Ontario Agricultural College, he will find there the results of Prof. McMurrich's investigations, which fully establish the fungus origin of this trouble.

Mr. J. HANNA (of Wingham).—Is the wild plum more liable to black knot than the tame?

The PRESIDENT.—The common blue plum seems most liable, and wild plums are not often found affected.

Mr. BEADLE.—What varieties of plums are grown around here?

Dr. SLOAN.—All the varieties I planted succeeded magnificently until the trees were killed.

Mr. A. McD. ALLAN.—All the varieties are hardy enough along the lake shore, but inland it is difficult to tell which is hardy, and which is not. I have found that about as satisfactory a tree to grow in every way is the Yellow Egg and Coe's Golden Drop. I never found the black knot in either of them, and the Bradshaw is fairly free. It is also true that with the Green Gage and Imperial Gage I have not found any trouble. In Huling's Superb I found a little trouble; but, now that my trees have attained a full growth, I do not have the same difficulty from the black knot. Whether it is that the bark has toughened, or become harder, I do not know; but it seems to me that a plum tree in its first four or five years is more liable than after. The Yellow Egg and Coe's Golden Drop, as I said, have more money in them than any other. Pond's seedling is good, but it is hard to get a crop, while such varieties as Peach Plum and Lombard will kill themselves by overbearing. The Washington is not generally a good bearer and on the General Hand I have never seen a good crop. I have cut in the tree well, and also root pruned it, and got a fair crop by that means. I have seen it cropping fairly by not cultivating the soil at all, or feeding it; but there is no guarantee. The Bradshaw is good, and takes the market well. I have not the Niagara, but I believe it is very fair. Glass's seedling is one of the finest dark plums we have, and, after it gets age, it is a good bearer. The crop is not large, but the specimens are good. I was rather disappointed in the Saunders, in size and flavour. I used to scrape my plum trees and rub salt in them.

Mr. A. M. SMITH (of St. Catharines).—Hearing the Niagara and Bradshaw mentioned, I wanted to settle the point whether they were not the same. It is contended by some on the other side that they are the same, although bearing different names.

Mr. ALLAN.—I have tried the Weaver, and it is good.

Mr. GOVENLOCK (of Seaforth).—I think the Lombard is most profitable. Coe's Golden Drop is a good bearer, and the Bradshaw is not heavy, but very fine. The Victoria was a very heavy bearer, in that respect resembling the Lombard. Since Mr. Allan has mentioned about rubbing salt on his trees, I may say that I got heavier crops by putting large quantities of salt around the trees in the fall. I think it helped them.

Mr. MORTON (of Wingham).—There is quite a quantity of black knot in this neighbourhood, and I think you may lay it down, as a rule, that those trees which bear most profusely are those which are most liable. The reason is natural. Disease always gains an easier and stronger hold, if the constitution has previously been exhausted. The curculio also does a considerable amount of damage in this vicinity, and I do not know that any measures have been taken to prevent its ravages. The principal ones that come into the market here are the common blue plum and the Lombard. There are also three varieties of the Green Gage, but the names I do not know. Immediately about Wingham we have no large quantity, most of what we need coming from the lake shore region.

Mr. MEYER (of Wingham).—I have blue plums and Green Gages, and about four or five years ago I had a good crop; but while the trees have been growing ever since, there has been no fruit.

Mr. JENKINS (of Wingham).—My experience has not been profitable. The first thing I had to contend with was the curculio, and I tried all the remedies that I could hear of; but none seemed to have any effect. I have tried the shaking process, and the corn cobs soaked in molasses, and all had no effect. I could never raise a plum to perfection. The next thing was that the trees began to die, and out of about two dozen I have not now over one or two that are alive, and they seem to be dying. With regard to varieties, I had some very good specimens from the Washington; but the Lombard seemed to be the best bearer. I also tried the Green Gage, and some I raised from seed, but they are all the same, and amounted to nothing in the end.

Mr. A. McD. ALLAN.—There was a gentleman in Stratford speaking to me some six or seven years ago about setting out plum trees. His soil was pretty high and thoroughly well drained. I advised him in planting young trees, to dig the ground out pretty well, and plant the tree well down, drawing in part of the top soil, and not levelling up until about three years afterwards. He has as fine a plum orchard now as you would wish to

look at. He had an idea that the frost affected the roots ; I asked him to try that plan, and he has been very successful.

Dr. McDONALD (of Wingham).—I have had two trees in my garden for fourteen years, and they have grown splendidly until these last few years, during which they have done nothing. They are the Green Gage.

Mr. R. F. SIBBALD (of Bluevale).—All my plum trees are gone. I had Lombards, Green Gages and Bradshaws, and I got a tree from the Fruit-Growers Association by the name of Glass Seedling. I grafted two trees from it, and they are the only ones now alive.

Mr. GOVENLOCK (of Seaforth).—I have a few plums on an Imperial Gage tree, and it is the first show of fruit I have had on it for five years. It used to be one of my best bearers.

The PRESIDENT.—That is an unusual experience.

Mr. BEALL (of Lindsay).—As some gentlemen have spoken about Green Gages, I should like to know whether some of them are really not Gages, but green plums from seedlings.

The PRESIDENT.—I have a Green Gage tree I planted twenty years ago, and I think there have been plums on it for the last thirteen or fourteen years. It is very slow in growing, but it is a reasonable size, and bears very regular crops.

Dr. McDONALD.—Wouldn't you consider that my trees did well in bearing for twelve consecutive years ?

The PRESIDENT.—Yes.

Mr. BEALL.—I did not want the Green Gage tree condemned for the faults of some other green plum.

The PRESIDENT.—It is a common thing to find an Imperial Gage under the name of Green Gage.

Mr. GOLDIE (of Guelph).—I have had a tree of the old English Green Gage for eight or nine years ; but I had to cut it out this spring. The true Gage is a small, rather scrubby growing tree. It is short-jointed, and never grows tall. The fruit is about the size of marbles. I do not think any of them would be over an inch in diameter, and many of them rusty, like a russet apple. The majority of plums that pass for Green Gages, are not such at all.

Mr. A. M. SMITH.—Is there sometimes a little blush on the cheek ?

Mr. GOLDIE.—A little ; but chiefly rusty.

Mr. A. M. SMITH.—I notice that in judging fruit, Green Gages are quite frequently so named when there is not a genuine one on the table. Oftentimes the Imperial Gage is shown for it. The Imperial Gage is longer, and is mottled under the skin.

Col. McGILL (of Oshawa).—I wish to corroborate what Mr. Goldie has said about the Green Gage tree. We get the fruit from it regularly, and what has been described, I think is the Imperial Gage.

Mr. HANNA (of Wingham).—I think that fast growing trees with soft wood are more liable to black knot. I should like to know if the Green Gage is liable to the black knot?

Col. MAGILL.—I have had a good deal of experience with plums, but I have never had any black knot from the Green Gage.

CHERRIES.

The SECRETARY.—This is a cold section of the country, and I should like to know whether they can be grown here ?

Mr. HANNA (of Wingham).—There have been a great many planted here and in this neighbourhood ; but we never find any coming into the market, or very few at least. It seems that there is something wrong with this section of the country. A great many trees do not bear. I have planted them, but never secured a crop. The kind I planted were a sort of purple coloured wild cherry, of very good quality.

Mr. YOUHILL (of Wingham).—I shall simply describe my own experience. I planted some trees that came from the neighbourhood of St. Catharines, but I find that it is a common Canadian cherry—a red one. It has done remarkably well with me. I have

kept the ground well cultivated ; but this last year they did not do well, and I think it was on account of the severity of the winter. I have another kind as well—a cultivated tree without the wild characteristics of the other I have described. Probably some one here can name it for me. One side is light, and the other side a deep, ripe red. It has not done well, and is generally deficient in fruit. Another great fault, is its tendency to send up a great many young trees around the roots. I cannot keep them down. Cherries are not largely grown in this neighbourhood, but I find that the common cherry bears very well. I have not seen any black knot among cherry trees.

Mr. JENKINS (of Wingham).—As far as my knowledge of cherries in this section of country goes, I do not think they have been very extensively cultivated. I do not see but very few trees, but what I do see seem to bear very well. I tried one or two myself, but through a misfortune I lost them. We have two kinds of wild cherries in this section, the small red, and the small black. I had one of the wild red variety growing in my yard, and I grafted it with the cultivated variety, and it bore for two or three years. It was a sight to see it. I had to support it to keep it from breaking down. A colt, however, got loose and destroyed it. I never saw anything grow like those grafts.

Mr. GOVENLOCK (of Seaforth).—I have cherries that have been growing for twenty years. I think the red and white are the Governor Wood. One variety is red on one side and comes to a point, but the other does not come to a point at all and is a very shy bearer. One year I had as much as four bushels from a large tree, but during the last two years the frost has prevented us having a crop. I have had the Black Eagle, but never succeeded in raising a good crop ; but of these common red cherries there are many that grow well. The white cherries are hard to raise on account of the robins. I never saw any black knot.

Dr. SLOAN (of Blyth).—Seven years ago I got cherry trees from the Secretary, and I have them yet. They have been cultivated, and are good. I had seven of the Early Richmond, seven Empress Eugenie, five May Duke, five Late Duke, five Elton, five Gov. Wood and four of the ordinary red cherry. This year I secured off my Dukes about a quart. My experience leads me to say this :—If I were going to plant one hundred trees, I should plant one hundred of the Early Richmond. I have got more off my few Richmond trees than all the others. The Empress gave me the finest fruit, and the tree is beautiful ; but I have advised my friends to plant the Early Richmond. In three years you can have fruit from it in the county of Huron. I have a French variety I got some years ago, which fruits a reasonable quantity, and comes on very late in the season. It is called the Belle Magnifique.

The SECRETARY.—It is a shy bearer with me.

Mr. GOTT (of Arkona).—With respect to the advice that has been given to plant the Early Richmond, I would say plant only the Morellos, which is the name of that class. Then you can have Early or Late Richmond. The Dukes are very shy bearers.

Mr. ALLAN (of Goderich).—I agree almost entirely with the Doctor ; for the Early Richmond is one of the best all round cherries we can get. It is a good cropper. The May Duke is good. The Elton and others yield very thin crops. They are fine in quality and fine for dessert, if you can get them to ripen in the face of the robins. They surround them by the hundreds. There is one difficulty with cherries that is not felt with other fruits, and that is in the matter of manuring the soil. It should be allowed to run to grass, as they require far less manure than other fruits. If you manure heavily, the energy of the trees goes towards leaf and wood. I have an Elkhorn cherry tree opposite a bed of asparagus, and I noticed that it was pressing hard to make extra growth. The result was that the trunk and some of the branches split. The red cherry and Early Richmond trees have generally given satisfaction, and I have seen but little black knot in this district.

Mr. BUCKE (of Ottawa).—It seems to me strange that more cherries are not grown here.

Mr. CROIL (of Aultsville).—I do not think cherries will amount to much until you can devise some remedy against the birds. I remember well when cherries used to be very plentiful. I do not think that the cause of the present scarcity is our cold winters. The trees seem to thrive ; but they bear no fruit. The cause, is the question.

Mr. HILBORN (of Arkona).—We grow mostly the common red cherry. I have planted a good many varieties, but they have not fruited yet. This year the old white variety has been a failure, but last year they were a good crop.

Mr. BEALL.—I had lots of cherries, but they are all gone. I had one row of thirty trees, large enough to grow three or four bushels each; but in six years we did not get half a bushel off the whole. The robins multiplied faster than the cherries. What trees did not bear, have been destroyed by the black knot, and the little trees at the roots grow worse than thistles. I have not a good word to say about the cherry tree.

Col. MCGILL.—The robin does not affect the crop where we live. I have never known them to touch these cherries except where the skin was broken. Our experience in Whitby has led us to give up trying to raise the sweeter class of cherries altogether, and the Early Richmond has been so badly affected by black knot, that we have had to cut the trees down. I first saw this black knot on a little wild cherry in the woods. The yellow cultivated cherries are not troubled much, and the old Pie cherry is not either. There is more money in the Early Richmond than any other, and it is not a bad cherry. It is like a great many other fruits, it has a good appearance outside before it is really good inside. Let it get ripe and it is very fair, and is one of the best we have for Canada.

Vice-President BUCKE.—Has anybody else had any experience in grafting cultivated cherries on the wild tree?

Mr. ALLAN.—They will grow very rapidly; even on a wild choke cherry.

Mr. HILBORN.—I have thought that the common Kentish cherry was more free from black knot than any other.

Col. MCGILL.—It is not so free on mine. It is not two weeks since I cut off twenty limbs from a few trees that had been out three years.

GRAPES.

Mr. BUCKE (of Ottawa).—This has been a very bad year for ripening grapes.

Mr. GOVENLOCK (of Seaforth).—I have almost all the Rogers varieties and I have the Concord and Delaware. They are just coming into bearing. Last year they were frozen off; but I see No. 9 has some very fine bunches on them. (Mr. Govenlock then described a trellis which he had invented that answered the purposes very well.)

Dr. SLOAN (of Blyth).—I grow the Martha, Salem, Concord and Pocklington. I think most of the Pocklington. It is loaded with beautiful fine fruit. The only desire I have now is to get the Niagara. The Salem does not mildew with me, and I have had a crop off that for the last four or five years.

Mr. GOVENLOCK.—I have Moore's Early and Prentiss in addition to what I mentioned.

Mr. BUCKE.—Are there any regular vineyards planted here?

Dr. SLOAN.—Mr. MacPhie, of Colborne, is the only successful grape grower on a large scale that I know of.

Mr. ALLAN.—He grows Concord mostly and Rogers' Four. He also has the Salem growing very well; but his Concords are not doing well this year. While I am up I may as well tell you what I grow. I grow all the old varieties; but I fancy that the Concord is running out. I find that it is not as good a crop these two or three years as it was before that time. It is not as compact, as far as I have seen it on the Exhibition tables this year. It is later in ripening and does not form as well. The Delaware is ripening well. I believe there is more money in this new grape the Niagara than any of them. It is the strongest grower of any. I am willing if the doctor can ripen Pocklington to give him the best chromo I can get. The Salem is succeeding very well. The Worden is the coming grape, and the Wilder is good. The Prentiss is too slow a grower. The Duchess is a fair grower and a very fine berry. The Jessica is a little on the small side, but it is early and is a delicious little thing. I ripened a new seedling of my own this year, but I have not had a chance to test it yet. The children went for it too rapidly for me to see much about it. The berry is as dark as the Concord and a great deal better in quality. It is a chance seedling. I have the Brighton, and it is very fair. There

are few that are profitable, and some growers complain of mildew; but I have not had any for the last few years. The way I fight it is to use sulphur during the first part of the season after moving the ground and doing my manuring. I scatter it under the trellises, and then when the bloom is off and the fruit is setting I move the soil once more and scatter it over it. I have not had mildew even on the Burnet, which I considered was the worst to grow that I ever tried. Moore's Early drops very badly and the moment it is ripened it begins to lose its quality. You must use it at once.

Mr. BEADLE.—Have you tried sulphate of iron as a manure?

Mr. ALLAN.—Yes. That is the old Hamilton trick. They take a vine and pick out the best bunches. They ring it and drive sulphate of iron into it by dissolving it and sprinkling around the roots. They also use refuse from the slaughter-house, and in that way they grow fruit to the size some of you may have seen it. The fruit is very insipid and the quality is not there.

Mr. BEADLE.—Without ringing, what is the quality of the fruit manured with sulphate of iron?

Mr. ALLAN.—Very watery.

Mr. BEADLE.—Does it tend to promote early ripening?

Mr. ALLAN.—Yes, certainly.

Mr. HILBORN.—How is it applied?

Mr. ALLAN.—With warm soap suds, with which it makes an emulsion.

Mr. BEALL (of Lindsay).—The Niagara is doing first-rate with me. We were troubled with frost last year, and it injured the vines very much; but all with the exception of about two are finely covered with fruit this year. This is more than I expected; but whether they will ripen or not I do not know. To do that a week or ten days of warm weather is all that is wanted. I have the Salem growing for many years; but I have never had a pound of grapes from it. The Chippawa mildews with me. It has mildewed a little this year, but it is the only one with me that acts in that way. I am surprised to hear Mr. Allan say that Moore's Early drops from the vine; but I think he said that it did not do so until after the third year. Mine is only in its second year. I quite agree with him that they lose quality on being kept. The Niagara, I am satisfied, is the most profitable grape I have. I have the Brighton, nearer perfection than any I see here; and I like the vine very much. I have a great crop on my vines this year. I have the Amber Queen. It has borne this year, but I shall require more fruit to make it a success. It is small in size, of a very peculiar colour, and the flavour is very nice. I have the Early Victor, but my experience would be of no use. There are two or three more bunches than of the Amber Queen, but whether it will ripen or not, I cannot say. I have the Burnet and it is beginning to colour now. One that I got from the Fruit Growers' Association seven or eight years ago has never grown to any extent. Another one has a good many bunches on it, but I find it very much subject to ravages of the thrip. It has been worse on it than any, except the Clinton. I am sure it is too late for our country. The Jefferson is just commencing to fruit, but I am afraid it will also be too late for our district. I like it very much and the bunch is of a very pretty shape, although rather smaller than I thought it would be. They are just commencing to change colour. I have the Vergennes, the Jessica and the Worden; but they are not fruiting. The Jessica has grown wonderfully.

Col. MCGILL.—Does the Amber Queen throw out a number of small berries, the same as the Burnet does?

Mr. BEALL.—I cannot say.

Col. MCGILL.—It has been my experience that it does.

Mr. P. C. DEMPSEY (of Trenton).—The most hardy and earliest grape we have is the Beaconsfield or Champion; but I must endorse Mr. Beadle's remarks at one of our meetings that we do not grow them to eat. We only grow them to sell; for they are a very poor grape. Next to them stands the Worden. It is very fine indeed. The bunches are very large, the berries are large, and they are nearly ripe now with us. The Champion we have got a few baskets from already. Next in earliness comes the Telegraph; but it is not much cultivated in our part of the country. It is closely set and very prolific, and apparently hardy with us. Still the berry is too small for that quality of grape. I think

we are safe in recommending the Brighton for any place. The fruit is very fine indeed. There are some of Rogers' hybrids that are very profitable, but on account of their liability to set small bunches, they are not so preferable as the varieties that I have mentioned. If I were going to plant a vineyard again I should plant only Champion, Worden, Brighton and Delaware.

Mr. ALLAN.—I want to impress this on all grape growers, never to neglect to lay their vines down during the winter. I have tested it for several years in this way: Where I have grown two arms from the one stalk, I have left one up and the other down on the ground. The result is that the one that has been down will bud earlier and perfect its fruit about ten days earlier than the other. This is of great advantage in a season like this.

Mr. GOLDIE (of Guelph).—I would like to know about this point: has anyone tested whether it is better to allow the vines to spread than to confine them.

Mr. GOTT.—I have had a little experience in this matter. In planting a vineyard, I planted a little too close together. The consequence is that they are too crowded. I put up a trellis about six feet high, and I found that the branches were very much crowded, and I had to do one of two things—to take out every other plant or give them more room upward. I did the latter, and the result is that they are bearing largely and well. By protecting the vines in the winter we are almost sure of a paying crop. I have tried one of Mr. Campbell's grapes this year—the Lady, and it is very promising. The vine is a slow grower, but quite hardy with us. The berry is something delicious. We have no grape that will equal it in worth. We have also fruited a little grape called the Jessica. It is an early variety, and I believe it is going to be very promising. The grape, however, that we look most to is the Worden. I believe that it is going to be of the greatest value from the simple fact that our Concords are failing. We grapple with mildew by the use of sulphur. We use it a little different, however, than Mr. Allan has described. We take the flour of sulphur, and on a dewy morning sprinkle it over the plants. In this Worden we have no trouble of this kind. Another very excellent grape this season is the Brighton, which has produced a crop of great value. The Iona is also of great value; but has one fault that it will not ripen its fruit in all localities. It must have shelter, and then if you have Ionas they are worth having. The Delaware does well, and so does Moore's Early. So far as what has been said about Moore's Early falling from the bunch, we have had no experience of that kind. The fruit is as good as can be desired. We have marketed ours some time ago. In this northern section, I belive the people would do well to give more attention to it, as it will do where others cannot be ripened. We are almost sure of a paying crop.

The SECRETARY.—I wish to call the attention of our grape growing friends in this particular part of the country, to the matter of successful grape growing. My experience has taught me this, that if we allow our vines to overload, the fruit will either not ripen at all or very much later, and the flavour will not be up to the standard. If the crop is excessive, it will also weaken the vine, so as to injure it for two or three years, if not for the remainder of its life. If we are growing grapes in a climate where it is necessary to have them ripen early, it is found that by leaving not more than half the crop, we will get our grapes ripened a week or ten days earlier, than if we had left the whole crop on; and what we have will be of a finer quality, and we shall keep our vines healthy. This is particularly true if we are in danger of early frost.

Mr. P. C. DEMPSEY.—I like grapes as well for winter as potatoes, and for that purpose we prefer Rogers' 44. Where the Concord will ripen you are safe in planting it, and we have no more difficulty in keeping it until mid-winter, than we have our winter apples. The name of this vine is Herbert, but I adhere to the numbers. I think I can safely recommend it to any person. Some of Rogers' would be more palatable when first ripe, but this will keep nearly all winter. With respect to close planting my experience was this:—On account of limited space, we planted the rows eight feet apart, and in the rows four feet apart. They did very nicely for three or four years, until they commenced to fruit, and then we found we could not make it profitable without removing every alternate vine; but I think we made a mistake in not removing every alternate row. The trellis are seven feet high. Rows should be twelve feet apart, and twelve feet between the

vines. We put wires to the posts, and trained them on double rows. We do not pinch them back, but when the fruit sets in the spring, we try if possible to prevent it running along on the wire, and encourage it to turn down. This checks the growth of the plant, and it seems to throw its energy into fruit. By this system, our fruit ripens a week earlier than by the old plan. I have tested it several times by training one part upward, and the other downward, and invariably I find the bunches on the part that is down, not only the finest, but double the size of those that are on the upward arm. It is the easiest way of thinning. I may also say that Rogers' 4 will not keep equal to 44. The Agawam appears to have the same difficulty as the Brighton. It loses that spirited flavour which we admire in a grape and gets a dry one instead.

Mr. GOTT.—Why not cut the lateral off?

Mr. DEMPSEY.—If you get it turned down it is all right, but if you cut it off or pinch it back, you will have to do it frequently, and our labour costs us something.

Mr. MORTON (of Wingham).—I have followed the system spoken of by Mr. Dempsey, and my experience bears out what he has said. It has been noticed that if the grape vine is allowed to grow upward there will be a more vigorous wood growth than if it is trained downward. When it cannot furnish wood growth the vine goes into fruit; but this is not a new system by any means. You will find the same principle mentioned incidentally in "Fuller's Grape Culturist." He speaks of the training over an arch, by which the vines were bent over with the object in view of getting the fruit at the end to ripen equal with the base. This checking of the wood growth answers the same as the arch system. I have not much experience in varieties, although it is true that I have a number. I have, perhaps, as great a number as any person in town. I have Concord, No. 22 and No. 4 that are fruiting. I have the Niagara, and the growth is immense since this spring, although it is in the poorest part of my garden. It has made over ten feet of growth this year. The Early Dawn, without a fair chance, has made small growth. The Lady is on very good ground. I have the Jessica and the Agawam growing. The Union Village was taken from a plant in a garden in Brantford. It is the largest grape I ever saw, and in flavour it is magnificent. I also have the Worden and Prentiss. I think very much of the system of trellising that has been described here, because I have had the advantage of seeing the good results. The Salem, on his place, bears immense crops. I think that on under ten vines he has fully 1,500 lbs. of grapes. He has tried sulphur for dew, but whether the fault of the applicant or the remedy, it is nevertheless true that he does not get the success that other fruit growers meet with. His favourite grapes are the Worden and Delaware.

Mr. BEALL (of Lindsay).—If all grapes ripened early, I think we would have more than we could very well handle. If we can get grapes to keep, however, it is of great advantage, and therefore those varieties that have that quality, are most preferred. I cannot allow the opportunity to pass without speaking a word in favour of the Niagara in that respect. While it is comparatively one of the earliest, it is also one of the best for keeping that we have. I sold mine to a fruit dealer in town, and he kept them until Christmas, and sold them for twenty-five cents per pound. He said if he was sure of getting them every year, he would certainly not get Spanish grapes, as he could sell these a great deal better. My Agawam also keeps until New Year's, and is very large and of a peculiar brown colour. I keep them in the cellar, where the thermometer is generally 45 to 50 in the coolest part, which is rather too warm. I have put paper between the two layers, but I find that they do better without the paper.

Mr. BEADLE.—This matter of grapes keeping is one which we should not lose sight of. I want to mention a variety that I suppose everybody has, and yet does not seem to appreciate the fact that it is the best keeping grape we have. That is the Clinton. I have seen it keep until the first of March, growing richer instead of poorer.

Mr. DEMPSEY.—I have had Niagaras in February, and there are several that will keep very nicely. I simply spoke of one, thinking it wisdom not to mention too many varieties. I have eaten the Vergennes in winter and thought it better than I had ever tasted it in the fall.

Mr. JOHN LITTLE (of Fish Creek).—I have not said much to-day; but I have heard many a good suggestion made. Getting too many varieties is a great fault. Like Mr

Dempsey, I have been foolish enough to get many new varieties at high prices, and after a few years I would find that the old varieties would beat them all. If you get a good thing do not get too many others. If it proves good, keep it.

Mr. BEADLE.—We owe a debt of gratitude to such men as Mr. Little and Mr. Dempsey, who go to the expense of testing these different varieties of berries and fruits generally, and then telling us what their experience has been. It saves thousands of dollars to the country. They make their gardens a place for general experiment, and we have to look to such men as Mr. Little, Mr. Dempsey and Mr. Hilborn to test these fruits as they come out. I think that they go upon the motto of the Good Book, "Try all things; hold fast that which is good."

Mr. GOLDIE.—Would fruit on a grape vine running out twenty feet ripen as well near the root as at the end?

Mr. DEMPSEY.—In my experience it is a good thing to let vines grow. I have an Agawam under an apple tree, and we have allowed it to grow somewhere about forty feet, and on that side it is literally covered with fruit. It turns out an immense quantity.

Mr. BUCKE.—Almost everybody grows grapes on the arm system. I have put the arms of some of my grapes under ground, and have fruited first one cane and then the other the next year. I have found that a larger crop can be gotten in that way. On my Rogers' nine I have left only two bunches of grapes on the spur, so that the crop of grapes is greatly reduced. On that vine this season competent judges have estimated the crop at 250 lbs. I think a larger crop of grapes can be got in that way than by any other mode of training. I cut them back as soon as they flower.

The Association then adjourned until the evening, when the following questions were dealt with.

CLUB ROOT.

QUESTION.—"What is club root in cabbage, and what is the cause?"

Mr. GOLDIE.—I suppose it is caused by insects. You will see it in ground that has been used very much. The small fibrous roots get quite swollen, and the cabbage seems to dwindle away, just as if the maggots were in it; at least I have seen them act very much in the same way when maggots were in them. Some ground will nearly always have it, and the best thing to get over the difficulty is to change to a new piece of soil, where they have not been grown for some time before.

Mr. YOUHILL, of Wingham.—Peter Henderson describes this in his book, and shows that in one part of New Jersey, where there is a shallow soil the club root has not appeared. He also stated that in ground where it has been prevalent, they cannot grow cabbages two years in succession. He shows that this effect is sometimes felt in twenty-four hours. Now, I have studied the matter here and I believe that our ground here is the same as where the trouble is felt elsewhere. I was told that it was a kind of manure in our soil. I have tried the experiment of Paris green, and found that it killed the plant completely. It was mixed with flour to make it stick to the stem. I am certain in my own mind that the cause is a little fly very much the same as the house fly. It deposits its eggs at the base of the plant, and as soon as it takes the larvæ state it gets inside of the plant as well. To protect the plant with a piece of stove pipe or anything else to prevent them getting at it is a very good thing. I made a protector out of a box with a piece of mosquito netting over it, which is a complete cure.

The PRESIDENT.—The cabbage fly is a small fly somewhat resembling the common house fly, although a little smaller. It belongs to the genus Anthomyia. It has been troublesome in Europe for hundreds of years, and we have had it prevailing to an unusual degree this last year; so much so that in a great many sections of Ontario nearly the entire cabbage crop has been destroyed. The remedy which Mr. Youhill has brought before you is perfectly effectual, providing the protection is given before the egg has been laid. If the plant is free from the fly before being planted out, and a cover is provided, the remedy will be a success. Any device which will prevent the fly having access to the roots of the plant will answer. If, however, the eggs have been deposited on the stem, the grub will work into it and up and down until the whole of the interior is destroyed. In

Ottawa some experiments have been tried with coal oil. The plan is to take a cupful of coal oil and mix it with a pailful of sand. This gives off a strong odor, and a handful scattered around a cabbage plant retains its odor for some time. Insects are deterred from visiting plants where there is an objectionable odor, and they are also apt to go where the odor is inviting. It is believed that insects have some power similar to that of scent, and by strewing around this mixture and causing a foreign odor it is said to be an effectual preventive of the fly. As to club root, I have not had any experience with it, while I have hundreds of times seen this fly and watched its work on the roots. If this were the cause club root would be associated with the work of the fly. The history of the fly was worked out many years ago I think, by Mr. Curtis, an English entomologist, and his observations have been confirmed by others. It is very important that we should have brought before us all the measures that are likely to lessen a trouble of this sort, as it has caused a great loss, not only of labour, but of money. The crops which have been destroyed would, if they could have been sold, represent a great deal of money.

Mr. GOLDIE—The true club root makes the cabbage look very much like the black knot on the plum tree before it gets into that black state. It is probably more of a fungus growth, than the result of insects, and this changing around is the best remedy under those circumstances.

Mr. LITTLE.—Where I lived in the old country when a boy, every plant taken from the bed was examined for this fly.

Mr. MORTON (of Wingham).—Mr. Goldie's description of the action of club root in the old country, does not agree with the action of the maggot on the cabbage here. I have grown cabbages for my own use, and have watched the operations. I have not witnessed any swelling of the roots, but simply a stripping of the outside and then they have worked down and attacked the inside. I corresponded with Prof. Cook, of Michigan, for remedies, and one of them that he sent me was an emulsion of coal oil with soap. He found it a perfect remedy. I have tried it faithfully. He said that two applications during the season was not only sufficient to prevent it, but would kill the worm. I have not, however, found it to be one particle of use. I thought that my formula might not be the same as his; but I wrote to him and got it again. I can say that it was no good whatever.

Mr. YOUHILL.—I might state that I also cover my plants when they are in the bed with a net. I am convinced that the fly comes during the latter part of May or the first part of June.

The PRESIDENT.—I think that, Mr. Youhill, is a wise precaution, putting a net over the plants while they are in the beds.

THE CABBAGE BUTTERFLY.

QUESTION.—"What is the best plan of destroying the cabbage butterfly?"

The PRESIDENT.—What is meant here is the worm that is laid by the white cabbage butterfly, for which we are indebted to the old country. It has spread over the entire country, and is a very troublesome insect.

Mr. HILBORN (of Arkona).—It seems to be growing less and less where they have had it, and it is thought it will leave altogether. I have seen some of our market gardeners' plantations this year and very little damage is being done. They do not know the cause unless it is some parasite destroying them.

Mr. MORTON.—Hot water I find to be the best and cleanest remedy. Paris green, I think is dangerous. Coal oil has the objection that it is apt to taint the cabbage. Water heated to 160 Fahrenheat and sprinkled over the plant from a watering can, will effectually kill the worm, without destroying the vitality of the cabbage. I think Prof. Riley gives ice cold water in the middle of the day as a remedy; but I tried it without success. I have read in the *Rural New Yorker* that others have had the same experience; but I think that hot water will be a satisfactory remedy.

The PRESIDENT.—Hot water is safe and good, provided you keep the heat within the limit given. Two other remedies are being brought into use now. One is Pyrethrum, which is imported chiefly from Austria. The flowers of the plant are powdered, and when

dusted over the worms it destroys them. It also does so, if mixed with water. The complaint against this is its expensiveness. A new remedy, also, has been introduced which is brought into notice for the first time this year, and concerning which I have had communication with the gentleman who discovered it. In the west a disease has affected the caterpillars by which they have turned black and died. Prof. Forbes, the State Entomologist, of Illinois, examined them microscopically, and found them filled with tens of thousands of bacillus. He finds that he can breed these in beef tea, so that a vessel will become thickly charged. Taking a pint of this and putting it into a barrel of water, he forms a liquid which is harmless to man or beast; but when a worm eats a few of these bacillus on a leaf they begin to increase in the intestines and kill the worm. He has tried this by putting them on cabbages charged with this liquid, and the worms have died.

Mr. A. A. WRIGHT (of Renfrew).—When I get my ground as rich as it should be, we could grow cabbages faster than the worms could eat them.

Mr. YOUHILL.—The greatest enemy this insect has is the little grey bird—the smaller of the two varieties. They have kept my plants free. I have seen them walk along, row by row, picking off these pests and destroying them.

THE ONION GRUB.

QUESTION.—"What is the best plan or measure to destroy the onion grub?"

The PRESIDENT.—This is twin sister to the cabbage grub, belongs to the same genus, and its mode of working is also similar.

Mr. BUCKE.—I believe it is stated that if you cover the bulb with earth they will not breed there.

The PRESIDENT.—The remedy which our Vice-President refers to is practised in England, and seems to be attended with good results. The other remedies suggested for the cabbage worm would be equally applicable to this, and therefore sand impregnated with coal oil might have the desired effect. After Mr. Morton's experience with the emulsion, it is possible the remedy might not be as successful as we had hoped.

Mr. DEMPSEY.—I think I have noticed the eggs of the cabbage worm right on the foliage of the plant. The maggot seems to hatch on the exterior and then goes to the root afterward. I have noticed that they will start to destroy one small onion and after they have enough will begin at another.

Mr. GOLDIE.—It was reckoned that soot was a good remedy.

Mr. A. A. WRIGHT (of Renfrew).—I have tried that without success.

Mr. DEMPSEY.—A gentleman who grows them extensively told me that by changing the block annually he avoided this. This year he planted on the same block as last year, and three-fourths of his crop has been destroyed.

Mr. WRIGHT.—The bed on which nearly all were destroyed last year has this year produced the best crop I ever had.

Mr. MORTON.—The only remedy I know of is not to plant the onion. I had a better crop where the onions grew on top one year than where they were planted deep down.

ANNUAL ADDRESS OF THE PRESIDENT OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

The President, Mr. William Saunders (of London), then read his annual address, the full text of which is given here:

GENTLEMEN—It now becomes my duty and privilege as your retiring president to address you on some points in connection with the progress which is yearly being made in this country in all departments of horticulture. The field is so vast and the questions which might profitably occupy our time so numerous, that it is perplexing to decide as to the best course to follow. Time will not permit to do more than cull a flower or two here and

there and to present you with a few examples of earth's abundant fruitage. Before engaging in this pleasing task reference must be made to the condition and prospects of our Association, which is that organization which permits of, and provides for, these pleasant gatherings of fruit growers, and furnishes the machinery for carrying on our good work and for placing the results achieved on permanent record.

Our meetings during the past year have been extremely interesting, and a large proportion of the topics discussed have had a direct practical bearing on the welfare of our people. A vast amount of useful information has been gathered, drawn largely from the accumulated stores of practical men in the localities where our meetings have been held, all of which has been placed before our members in the annual report of the Association, which I have no doubt has already been read by many with interest and profit.

The advantages of membership in our Association is a topic which is presented to you and to the public in some form almost every year, and although it be "an oft-told tale" it will always bear referring to once more. Perhaps with most of you present it is quite unnecessary to occupy time in trying to convince you of what you are already so well assured, that the advantages secured by membership in the Fruit Growers' Association of Ontario are great and continuous. Most of you know this, but to-day while appealing to you I am, to some extent, addressing the general public also, and I earnestly desire to impress upon the minds of all those outside our membership who are interested in horticulture that by joining us they would not only be strengthening our Association, an organization in every way worthy of support, but would at the same time secure for themselves benefits in return which would abundantly compensate them for any time or money devoted to this object. What, then, are our conditions of membership? Nothing further than the payment of one dollar per annum. And what are the advantages which members receive in return?

First, the *Canadian Horticulturist*, the monthly organ of our Society, in which our esteemed editor as well as our Directors and members find regular vent for their accumulated stores of horticultural experiences, a handsomely got up journal of twenty-four pages in each number, teeming with practical information and with every issue embellished with a beautiful plate of some new fruit or flower. I have no hesitation in saying that the Horticulturist alone is more than a fair equivalent for the member's subscription. Next we have the annual Report, with its full, verbatim account of all the discussions at our meetings, and containing in addition, many valuable reports on new fruits, and papers on a variety of horticultural subjects. Appended to all this is the Report of the Entomological Society of Ontario, which always contains much practical information regarding the insect enemies with which the lovers of horticulture have to contend. Nor is this all. Every year the Directors make choice of several new plants, shrubs, vines, etc., and give the members the privilege of selecting any one of those named. These are sent to the members free of cost to be tested, as to their suitability to the several districts of Ontario, and thus every one is able to secure many good things, which might otherwise escape his notice. Surely this is worth something. Here, then, is an investment offered to the public, where the advantages are largely in favor of the investor, and yet our membership is not so large as we would like to see it. We want all who are in any way interested in growing fruits, flowers, or trees to join us, and share in the advantages and benefits which our Association offers. "Come thou with us and we will do thee good."

The Grape.

Of late years, much attention has been paid to grape culture, and since this delicious fruit, in many of its better varieties, can be successfully grown in most of the favoured fruit sections in Ontario, and with the introduction of earlier and hardier sorts, the area suited to grape culture is being rapidly extended, this subject is becoming one of very general interest. No large plot of land is required for this purpose. Space for a few vines may be found in very small gardens; even where there is no special garden plot, they may be planted along a fence or against a shed, or outbuilding, and there made to serve the double purpose of ornament and use.

Its History.

The history of the cultivation of the grape in the old world carries us back to a very remote period. It is early mentioned in the scriptures, where the evil of excessive wine drinking was shown in the case of Noah. It was long grown to a considerable degree of perfection in Syria and Persia, and with the advancement of civilization westward the vine appears to have been carried first to Egypt, thence to Greece and Sicily, and afterwards to Italy, Spain and France. It is said to have been taken to Britain by the Romans about 200 years before Christ.

The European varieties of the grape are said to have a common origin, they have all been derived from the wine grape of Europe, *Vitis vinifera*. Some of the early colonists brought with them to America seeds of some of the choicest varieties cultivated in Europe, and planted them here, but the seedlings did not succeed well. A large number of vines have also been imported, and similar failures attended their introduction. They were found either too tender to endure the climate, or so subject to mildew as to be more trouble than profit, and their cultivation was gradually abandoned, or restricted to glass-covered buildings, where the temperature and other conditions necessary to success could be controlled.

There were found in America several species of wild grape, which, although offering no great attractions in the way of quality of fruit, were rapid growers and possessed of a healthy and vigorous constitution, rarely affected by any disease. The most promising of these were "the Northern Fox Grape" *Vitis labrusca*, found in many parts of the Northern United States, and "the winter or frost grape," *Vitis cordifolia*, which is found in almost all the northern portions of America. The fox grape is noted for its large and handsome foliage. The leaves are thick and leathery, with a rusty, woolly, coating beneath. The fruit is of little account; the clusters are small, the berries of a large size, a dark purple or amber color, having a thick skin and a tough pulp, with a peculiar, unpleasant musky flavour, commonly designated "foxy." The frost grape has much thinner foliage, and bears small, compact clusters of small acid berries, which are sweetened and improved in flavour by frost. Here was a foundation to work on which the early grape-growers in this country failed to appreciate, and it does not appear that any efforts were made at this early period to improve our native grapes.

A new era in grape culture here, dawned in 1818, and a great impetus was given to it by the the introduction of the Isabella grape, a chance seedling of South Carolina, which in its general characteristics bears evidence of having been derived from the native fox grape. This was brought north in that year by Mrs. Isabella Gibbs, in whose honour it was named. It was a hardy variety, a vigorous grower and free from mildew, and although late in ripening, it continued to hold a high place in public estimation for fully forty years. In January, 1858, the Western New York Fruit Growers' Association held its annual meeting in Rochester. At that meeting one of the subjects discussed was the varieties of grapes best adapted to Western New York. In the course of that discussion, Mr. P. Barry, the well-known nurseryman of that city whose opinion in fruit questions is still regarded as of the highest value, made the following remarks:—"Although there are now many varieties claiming attention, and have so far promised to become valuable acquisitions, yet the Isabella is the only one of established reputation which I would be willing to plant extensively in Western New York." In this sentiment the majority of those present concurred. One speaker remarked that he had sold 600 lbs. of Isabella's in Buffalo that year at 18 cents per lb., and that the previous year he had sold a quantity of the same variety in New York for 22 cents per lb. Chief among the new grapes then referred to as promising, were the Concord, Delaware, Diana and Hartford. What a vast change twenty-five years have made in this branch of fruit culture. Scores of willing hands have been engaged in the experimental field, Rogers' Hybrids with a host of others have now appeared upon the stage, until we have descriptions published of about 200 varieties, while new ones are appearing every year. The Isabella is almost a thing of the past, and although still a good variety in some respects, is so uncertain as to its ripening that it has been left far behind in the race and is now seldom met with either in market or vineyard. The new varieties have originated in different ways, some have been accidental seedlings, others

obtained by selecting the best from among a number of seedlings, while still others have been produced by careful crossing either of native varieties with foreign or by crossing the most promising of the cultivated varieties with each other. This latter method is a most interesting one, where the likeness of both parents can often be traced in either the vine or fruit of the progeny. From a series of experiments of this sort I have had some striking results of which the following are examples:—

No. 1. Clinton female, crossed with Buckland's Sweetwater male. The female is black, with a medium-sized compact bunch and round berry; the male yellowish white, with a large loose bunch and large oval berry. The hybrid has greenish white fruit, oval in form and sub-acid, a loose bunch with berries above medium size. The influence of the male is shown in this example in the colour, form and size of the fruit, in the character of the cluster, and to some extent in the quality of the fruit, it ripens about with the Clinton.

The resemblance to the female is most marked in the form and character of the foliage and in the habit of the vine.

No. 2. Clinton female with Muscat Hamburgh male, female as described in No. 1; male, bunch large and loose, berries oval, black and of excellent quality, sweet with a rich Muscat flavor. The hybrid has a long loose bunch, oval black berry with a sprightly sub-acid flavor, but is late in ripening, too late to succeed well in our climate unless in very favorable seasons.

No. 3. The female in this case was a small black seedling grape not far removed in size and quality from the wild grape, with a small compact bunch of small black berries with large seeds; the male a deep purple grape, berries medium size, inclining to oval, with a juicy rich flesh. The resulting cross has a long and rather loose bunch of small round purple berries of good quality. In both these latter instances also, the influence of the male is well marked in the character of the fruit, while the vines resemble that of the female.

Amid the multitude of varieties now offered, the question is often asked by those who desire to plant, which are the best? This is not easy to answer, since location, soil and climate have all to be considered. Yet, in general, grape vines are more tolerant of unfavorable conditions than most fruits; they will succeed in almost every variety of soil, excepting one that is wet; and will thrive and fruit under any sort of care or want of care, from the most severe methods of pruning to a condition of almost utter neglect. With reasonable care most of the varieties will bear regular crops, provided they escape injury from the frosts in early spring and have a sufficient amount of heat during the season to ripen their fruit.

The following list embraces the principal varieties in cultivation, all of which are worthy of trial:

Black Grapes.—Barry (Rogers 43). Burnet, Canada, Champion, Clinton, Concord, Creveling, Early Victor, Essex, Hartford Prolific, Herbert (Rogers 44), Israella, Merrimac (Rogers 19), Moore's Early, Telegraph, Wilder (Rogers 4), and Worden.

Red Grapes.—Agawam (Rogers 15). Brighton, Delaware, Gaertner (Rogers 14). Lindley (Rogers 9). Massasoit (Rogers 3). and Vergennes.

White Grapes.—Duchess, Jessica, Lady, Martha, Niagara, Pocklington, Prentiss and Rebecca.

In addition to these there are some promising new varieties which have not been sufficiently tested in our Province to permit of a decided opinion being expressed regarding their merits. I refer to Centennial, Rochester, Woodruff Red, Empire State, Francis B. Hayes, and others. Some of these may possibly rank among the highest in our lists when we get to know them better. For the benefit of those who can only cultivate a few varieties, I would specially refer to the following ten, with any and all of which almost every lover of grapes will be pleased. They are all hardy and prolific, and most of them early.

Worden.—This is a comparatively new variety, a black grape with large bunch and berry, in quality much like Concord, but ripens about a week earlier. With me the vine is healthier and more productive than Concord, and I think the fruit is a little better in quality.

Delaware.—A small red grape of first quality, too well known to need further description ; only a moderate grower, but a good bearer.

Concord.—This well known black grape is more extensively cultivated than any other variety.

Brighton.—A red grape of first quality, hardy and productive, but it soon loses quality and becomes insipid if kept after it is fully ripe.

Wilder (Rogers No. 4.)—One of the best of Rogers' Hybrids. Bunch medium to large ; berry large, black and of good quality, ripens with the Concord.

Lindley (Rogers 9.)—A red grape, which in size of berry and bunch is much like Wilder, of good quality, ripens a little earlier than Concord.

Merrimac (Rogers 19.)—Bunch rather large, tender, juicy and sweet ; much like Wilder and ripens about the same time.

Telegraph—A black grape, bunch medium size, compact, berry medium to large ; flesh juicy, tender and of fair quality ; ripens about the same time as the Hartford Prolific.

Early Victor—One of the newer introductions ; a black grape, cluster of medium size, compact, berry medium in size, of good quality ; ripens earlier than Concord.

Clinton—This is a black grape, which requires to be thoroughly ripened and exposed to slight frosts in order to develop its full quality. It is then of a sprightly vinous flavor, subacid and of good quality ; if eaten before fully ripe it is unpleasantly acid. One of the very best grapes for canning or cooking.

In this list I have not included any white grapes, for the reason that all of those I have tested are inferior either in quality or productiveness, or both, when compared with the varieties named. No collection, however, would be complete without some of them. Martha has succeeded well with me, but in quality it is scarcely equal to the Concord ; Rebecca, when well ripened, is a good grape, but it is a very slow grower and poor bearer. Lady Washington rarely succeeds well here, and is late in ripening. Pocklington is a vigorous grower and prolific, a large and handsome grape of fair quality, but it sometimes fails to ripen. Jessica is a small grape of good quality, fruiting with me for the first time this season, and promises well. Niagara is a yellowish white grape of attractive appearance, medium in size of bunch and berry, in quality, variously estimated from fair to good, and is said to be vigorous and productive, but I have as yet had no experience in growing it. Duchess, Prentiss and Lady, are all fruiting with me for the first time this season ; the Lady is early, and promises to be a fair cropper, but the berries are thick skinned, and the Labrusca flavour is quite prominent ; both Duchess and Prentiss ripen late. If called on to make a small selection from those named, I should mention Jessica, Lady and Pocklington. Niagara also would be entitled to a place in this select list, should it succeed as well in Ontario as it has in Western New York.

But we have other promising fields in the domain of horticulture, and a few moments may be profitably devoted to flowers. While almost every one is familiar with most of the pretty and popular annuals and bedding plants which deck our garden with masses of beauty from midsummer to late in autumn, there are comparatively few who have taken the pains to secure for their enjoyment a fair proportion of the hardy perennial species. Many of these are quite as attractive as the choicest of our annuals, and they have the advantage that they can be grown from seed at a trifling expense, and when once planted they are a permanent source of pleasure from year to year. Still another point in their favour is that many of them flower quite early in the season before annuals begin to bloom, while the richness of their colouring, and the wonderful blending of their hues, recalls the words of the poet Thompson :—

"But who can paint
Like nature ? Can imagination boast
Amid its gay creation hues like hers ?
Or can it mix them with that matchless skill,
And lose them in each other, as appears
In every bud that blows ?"

Permit me to direct your attention to two or three groups, which, if you investigate them, will, I am sure, awaken in your minds a more general interest in this subject, and when we take into account that in many of the seed catalogues more than a hundred of such groups are enumerated, it will be seen that the field is not likely to be soon exhausted.

The group of Primulas, which include the Primrose and Polyanthus, is a very inviting one. The flowers are of many hues, embracing very many rich tints and beautiful combinations of colour. They are easily raised from seed sown in a hot-bed in spring, and if sown early and transplanted into rich ground as soon as the plants are large enough, will make fine flowering plants the following spring. The varieties of *Primula auricula* are very rich in colour, they are scarcely so hardy as some of the other members of the group, but with a slight protection will endure our coldest winters. *Primula capitata*, known also as *Cashmeriana*, is a charming spring flower. Late in the autumn the plant dies down to a small compact head, from which, as soon as spring opens, a crown of vigorous leaves is pushed, from the centre of which rises one or more flower spikes which soon develop stout stems bearing globular heads of reddish pink flowers with a pale yellow centre. *Primula Cortusoides* and its several varieties are pretty, free flowering plants, varying in tint from pale lilac to magenta red, which continue to send up fresh flower clusters for nearly a month. *Primula veris*, the English Primrose, is a very hardy and free-blooming plant in its various shades of yellow, rose and white, and some of the offshoots of this family are still more charming, especially the groups *Acaulis* and *Elatior*, where we find a great variety of rich tints of purple and red, margined and centred with yellow or gold. As curious departures from the normal type, we find in *Elatior Macrocalyx* the flower set on a large green calyx, which has a singular effect; also the variety *Duplex*, known as hose-in-hose, where one flower appears as if set into another one in a very odd manner. The many varieties of *Primula Suaveolens*, commonly known as the Cowslip, are well worthy of attention. They have a pleasant odour, and include, besides the common yellow form, many with larger flowers of brilliant shades of yellow and red. Besides those I have named, there are included in the larger seed catalogues, fifteen other forms belonging to this interesting group. This sketch would be incomplete were I to omit to mention a pretty little native species, from two to six inches high, known to botanists as *Primula Mistassinica*, which is found growing along the shores of the Upper Lakes. The flowers are pale lilac with a yellow eye, and the plant does well when transplanted to the garden.

The Aquilegias or Columbines are equally interesting and varied, and most graceful in their forms and habits. Our common wild Columbine, *Aquilegia Canadensis*, is a charming flower, which improves under cultivation, and deserves a place in every garden.

> "Sweet plants there are which bloom in sultry places,
> By rude feet trampled in their early hour,
> Which, when transplanted are so full of graces,
> They lend a charm to Flora 's fairest bower."

From our wild species several varieties have originated, one of them a dwarf with beautiful scarlet and yellow flowers. In addition to the older forms, of which there are more than fifty varieties, we have two elegant species from the Rocky Mountains, distinguished by the beauty of their form and the length of their spurs. One of these, *Cærulea*, is a violet blue with a yellow centre, the other, *Chrysantha*, of a rich golden yellow. I would suggest that one or both of these be included in the packet of seeds to be sent in the coming spring to those of our members who may select flower seeds; the plants are very hardy, and will be a much prized acquisition to every garden. *Aquilegia glandulosa* is also a very beautiful form; the flowers are large, of a rich, deep blue, with a pure white corolla. Where several of these varieties are grown together, and another generation of plants raised from the seed produced, many interesting crosses will be obtained, which will lend a charm to the flower border.

Among the Gentians, also, of which there are about twenty varieties in cultivation, there are some gems. None is more beautiful than *Gentiana acaulis*, which finds its home in the mountainous regions of Europe. In early spring, its tufts of gorgeous blue, bell shaped flowers, arise from charming cushions of glossy foliage. *Gentiana verna* is

another beautiful low-growing species, producing brillant blue flowers, with a yellow or white eye. *Gentiana Oliveri* is a lovely species, not long introduced from Turkestan; the flowers are large and very numerous, borne on slender stems about a foot in height, and are of a brilliant, sky-blue colour. Among our natives, *Gentiana Andrewsii* and *alba* are worthy of cultivation; the flowers of both of these are white or whitish. It should, however, be mentioned that the Gentians are not so easily grown from seed as the other flowers which have been named; favourable conditions are required to bring about germination.

I have but touched on a corner of a vast field where the most ardent florist may find new and varied treasures at every hand, and reap a harvest of beauty each succeeding year throughout a long life, and at its close still leave ungarnered a multitude of gems.

During the past winter an important fruit exhibition was held in connection with the New Orleans Exposition, when some 20,000 plates of fruit were shown. This was probably the largest display of fruit ever brought together, and one in which the different States in the Union competed with each other with commendable zeal, sparing no pains or expense in the endeavour to make their several exhibits as complete and attractive as possible. Ontario had no Provincial exhibit, but was represented by a collection of about sixty varieties of apples contributed by fruit-growers in the London District, and smaller collections from Prince Edward County and from Goderich. Notwithstanding the immense competition, we succeeded in carrying off first prizes for Esopus Spitzenburg and Ribston Pippin; and our collections were much admired, and highly commended.

Almost every season brings some new seedling fruit of value to light. Last February, Mr. M. S. Park, of Cornwall, sent to your President a new seedling apple of much promise. Samples were also sent to the Secretary, who published a description of it in the March number of the *Horticulturist*. After commenting highly on its beauty, he says:—"It is too acid as tested by us to be generally relished as a dessert fruit, perhaps later in the season the acidity may become less prominent." My specimens were kept several weeks before they were eaten, and I find in my notes referring to it, that I have designated it as "high flavoured," and very good. It is certainly deserving of extended trial.

Late last Autumn I opened a correspondence with the Director of the Government Experimental Gardens in Tokio, Japan, Sen Tsuda, and forwarded to him some thirty packages containing plants of most of our leading varieties of strawberry, raspberry, currant and gooseberry. These reached their destination in very good condition, and were much appreciated. There was sent me in return seeds of a number of varieties of flowers and shrubs, the larger portions of which were distributed to applicants in different parts of the Province. No reports have yet been received from the recipients, but a considerable proportion of those planted by myself have germinated, and are growing nicely. Scions of some of the best plums grown in Japan, and small rooted plants of their grapes were also sent, but owing to imperfect packing and long exposure, they were quite dead before they reached their destination. Mr. Tsuda is a highly intelligent gentleman, and a leader in horticulture in that interesting country from whence we have already received so many good things. It is hoped that mutual interchange of products will result in valuable acquisitions on both sides, and while lending a helping hand to lovers of fruits and flowers in that distant land, we may receive from them accessions to our lists which may prove both interesting and valuable.

The work undertaken by our Association in disseminating valuable products, and useful information in all departments of horticulture is a vast one, and what a privilege it is to be permitted to engage in so noble and benevolent an undertaking, as that of aiding in furnishing gorgeous flowers and luscious health-giving fruits to the present and future generations. Let us all labour earnestly in the several stations in which Providence has placed us, striving to leave our impress on the plastic forms which a bounteous nature has spread before us on every hand, aiding in developing new forms of beauty; our labours shall be crowned with a glorious harvest, and when we shall have passed away, the results of our work will live, and we shall be gratefully remembered by those that follow us.

On motion of Mr. Morton, seconded by Col. McGill, a hearty vote of thanks was awarded to Mr. Saunders for his address.

A committee was then appointed to nominate officers for the ensuing year.

PEARS IN HURON.

Mr. GOVENLOCK (of Seaforth).—I planted a good few pears about three years ago. I have had Flemish Beauty and Clapp's Favorite bearing for a number of years. The Flemish Beauty does real well, and seldom spots. I have had no blight either. I also find a ready market for all I can sell. The Flemish Beauty is a large bearer, but many of the best pears are blown off, and they are apt to get damaged if they fall on hard ground. A few of the small ones have cracked and spotted, but this has never occurred with the full grown ones.

Mr. ALLAN.—I am quite astonished that we have not heard of more pear trees in the vicinity of Wingham. I should think that it was well adapted to the growth of pears. The chief point to look to is thorough drainage. A good stiff soil is the best. As to profit, I should think that there was as much money in Clapp's Favorite as any that we have. It is a strong grower and a good regular bearer, of good size, beautiful in appearance, and a pear that would succeed very well here. I think that in the markets that I deal in it is as good as the Bartlett, or going ahead of it. It does not do, however, to leave it on the tree until it is ripe. Even if you are going to use it in the family it must be picked on the green side. I fancy that the flavor is very much superior if this is done. I think that it loses its flavor by being left on the tree until it is ripe. If you leave it the heart goes. The moment it becomes fully ripe it is of no use. The Bartlett is generally cultivated, and so is the Flemish Beauty, but it is liable to over-bear. It should be thinned out. We have often had cases of pear blight, and Flemish Beauty is most liable. Clapp's Favorite has been free. The Sheldon will grow very well. Beurre Hardy can also be grown, and Duchess for a winter pear, although I like Josephine de Malines. I also grow Beurre Superfin. I like the Lawrence, and the Vicar of Winkfield for cooking. Then Louise Bonne de Jersey is a large pear, and really good for market, although it is not equal to Clapp's Favorite, Flemish Beauty, or Bartlett. Beurre D'Anjou is very good.

Mr. CROIL.—Do you manure your trees very much?

Mr. ALLAN.—Yes.

Mr. BUCKE.—How long does it take for them to come into bearing?

Mr. ALLAN.—Dwarf trees come in the third year. I like Clapp's Favorite as a dwarf better than as a standard.

Mr. HILBORN.—What about the Dr. Reeder?

Mr. ALLAN.—I do not like it. It is not as good as the Seckel. I would not, however, advise any one to grow the Dr. Reeder or the Seckel for profit in this neighborhood.

Mr. GOTT.—With respect to the time of picking pears, there is a great deal of ignorance among many people on this subject. The trouble is as Mr. Allan has explained. It might be said, however, that in the Clapp's Favorite, for instance, the change of colour begins before the flesh is really ripe. These have to be watched, as winter varieties must be picked in their green state. The White Doyenne is a very popular variety, and the Louise Bonne de Jersey has been found to be profitable. The others named are worth attention.

The PRESIDENT.—The Grey and White Doyenne do not have the same characteristics everywhere. In London, on one spot it grows handsomely, while on another it cracks so badly as to be useless.

Mr. DEMPSEY.—I cannot give any idea as to pear culture in this county. I would condemn Clapp's Favorite because it is very subject to the blight. The Flemish Beauty comes next to it. I would recommend to the younger persons the principle of crossing flowers, and I fancy that some of these days we will have varieties of pears for cultivation in our different counties that will astonish the rest of the world, if we undertake that enterprise with that amount of zeal it is worthy of. My little experience in that direction causes me to fully endorse all that has been said with respect to producing hybrid pears. I am almost convinced that we can produce a pear to our will by properly selecting the parents. I think to-morrow morning I can bring some specimens that will satisfy you as to what can be done. Invariably I find that the flavour of the female parent

is stamped in the fruit, while almost invariably we find the outline and external characteristics of the fruit taken from the male parent. I will show you a cross between Belle Lucrative and Beurre D'Anjou which you cannot detect from Beurre D'Anjou. It looks like Beurre D'Anjou, but the flavour is that of Belle Lucrative. I can also show you where the Vicar was the female and Belle Lucrative the male. It is the Vicar until you cut it. Some of my crosses are fine cooking pears, and will produce more bushels than any other. They hang in ropes every year, and my wife says she does not want the Kieffer when she can get them to can. These results have proved to be a fact in my experience in producing hybrid pears, and I believe we will have some good ones.

The PRESIDENT.—About eighteen years ago I began this line of experimenting; but my success has not warranted me in laying down a rule that I can produce pears to order.

Mr. DEMPSEY.—I have shown you some of my seedlings that fruited some years ago, and one you expressed very favourable opinion of, with the exception of the size. It is very small. Now I have just reversed my plan and I am going the other way. Formerly if I wanted to cross the Seckel with some other variety I used the Seckel as the male parent, and the result was small fruit. I think, however, that a Seckel flavour could be produced in fruit as large as the White Doyenne.

The PRESIDENT.—That accords with my experience with grapes, as I have given it to you to-night.

Mr. BUCKE.—We cannot grow pears in the Ottawa district. I have never succeeded in raising one pear.

CABBAGE.

Mr. DEMPSEY.—I have had very little experience in growing cabbages for commercial purposes, and the chief part of my experience lately has been in buying what we have needed. The reason that I do that is because I can buy them cheaper than I can grow them. The Jersey Wakefield is very fine, and the Winningstadt is good. I have never grown the Early Atop, but one of my neighbours has, and it is good, but small.

Mr. H. SMITH (of Sarnia).—The Winningstadt is one of the very best flavoured that I have eaten. I have also tried the common Drumhead, which is very good.

Mr. BEADLE.—While the Jersey Wakefield is very nice and the Winningstadt is very fair coming after it, yet there is another cabbage which gets its perfection later in the season. It is better in flavour after the weather has become a little frosty, and I esteem it the best of any that we have ever had. That is the Curled Savoy. The leaves are all crinkled up, and the heads are hard, and for eating, it is the best that I know of. I do not know anything about the profit.

J. M. DENTON (of London).—The cabbage which Mr. Beadle refers to is my favourite.

Mr. BUCKE.—When returning from Chicago the other day I saw hundreds of acres of cabbages. I do not know what variety they were, but they were of tremendous size.

Mr. DENTON.—I was there about a month ago, and it was the small Drumhead they were growing.

Mr. WRIGHT.—My experience is that they pay remarkably well, and I find that the earliest and the smallest is the Early Jersey Wakefield, which has a very hard head. The next in earliness is the early Winningstadt. It also has a very hard head and its specific gravity is greater than the others. It keeps well and is a real good cabbage. It grows so hard and firm that worms do not seem to trouble it the same as the others. But of all for profit there is none like Fotter's Early Drumhead. I can grow them to weigh thirty pounds, and while I can only get five cents for others, I can get fifteen for these. I get my seed every year from Peter Henderson of New York. If you want something for exhibitions you must get the Mammoth Drumhead; but it comes in very late.

Mr. H. SMITH (of Sarnia).—Has any gentleman had any experience as to whether seed grown on this continent or in the old country is the best?

Mr. WRIGHT.—I do not know where Henderson's seeds come from; but I have had other seeds, and met with no success with them.

Mr. GOTT.—We use the Winningstadt and keep them in the trenches until April and May.

Mr. WRIGHT.—How does Mr. Gott keep his cabbages until April and May?

Mr. GOTT.—It is one of those methods used for generations past. A trench is prepared about the width of a spade and of the ordinary depth of digging; the cabbages are pulled root and branch and turned upside down in this trench. A little straw is then thrown over the cabbages and then the earth is thrown about it. In the spring they may be taken out in splendid form, and although the frost may get into it no harm is done.

GOOSEBERRIES.

Mr. GOVENLOCK (of Seaforth).—I have been very successful in gooseberries. I planted out a row of fifty some three years ago, and forty of them were Downing's, some Smith's Improved, and I think that I had a few Whitesmiths. Although a large nice looking berry, I do not think so much of the Whitesmith as Smith's Improved. The Downing is a splendid berry. I had an average of seven quarts per bush. Off some of the older ones I took twelve quarts, and I never saw a berry mildew. The Whitesmiths do not mildew, but they fall off a little. They are not as good a flavour as Smith's Improved. The only objection I have to Smith's Improved is, the branches are very weak and tender. They do not stand up so well as Downing's seedling, which I believe is the berry for this country. I have not grown the Houghton very much; but I have seen it grown in the village. It is a good berry; but it does not succeed very well. Our soil is clay.

Mr. GOTT.—In case of mildew have you tried any remedies?

Mr. GOVENLOCK.—I never had mildew on either of the first three that I mentioned.

Mr. HILBORN.—This year I fruited Smith's Improved, Downing, Whitesmith, Crownbob, Industry and Houghton. I think Smith's Improved is the most promising for our neighbourhood. It seems to be a good sized berry, fully hardier than the Downing and more plentiful. I also like the quality far better. I got the Whitesmith from three or four different parties. I met with persons in different parts who did not know the name of a good berry they had, and I took a bush. They were all the same. The Industry I cannot say much about. They only had a few specimens which were very fine, and quite similar to the Crownbob.

Mr. LITTLE (of Fish Creek).—I think I said that I did not care to handle the gooseberry much. I had some very good ones from Mr. Hilborn. They were the Whitesmith and the King Karl. They were of fine quality.

A. M. SMITH (of St Catharines).—I have grown one variety that was a seedling from Mr. Saunders. I have not much to say about them. We call them the Pearl. We grow them on sandy soil; but it was very poorly adapted to gooseberry growing, and last autumn I prepared a piece of soil with clay loam, and although they have done very well I have not had the fruit that I saw at the President's place last summer. It is evident that your ground is better than mine.

Mr. DEMPSEY.—I have some seedlings that are very promising. Among the varieties, however, that I have fruited, I have found none that sell as well as Smith's Improved and Downing's. We have several seedlings that are double the size of Smith's Improved and they appear to be prolific. Some I have fruited once, some twice and others three times. That is not a sufficient test. I propose trying planting on different soil.

ELECTION.

The Committee which had been appointed to nominate officers for the ensuing year reported as follows:

Your Committee beg leave to submit the following nominations:

PRESIDENT, - - - - - -	WM. SAUNDERS.
VICE-PRESIDENT, - - - -	A. McD. ALLAN.

DIRECTORS:

Division No.	1	JOHN CROIL.
" "	2	A. A. WRIGHT.
" "	3	R. S. DUNLOP.
" "	4	P. C. DEMPSEY.
" "	5	THOS. BEALL.
" "	6	JOHN MCGILL.
" "	7	MURRAY PETTIT.
" "	8	A. M. SMITH.
" "	9	F. MITCHELL.
" "	10	J. A. MORTON.
" "	11	J. M. DENTON.
" "	12	W. W. HILBORN.
" "	13	CHAS. HICKLING.

AUDITORS:

JAMES GOLDIE, - - - - CHARLES DEURY.

Respectfully submitted,

THOS. BEALL,

Chairman

The names were taken up *seriatim*. When division number six was reached Mr. Beadle moved to amend the report by striking out the name of John McGill and substituting therefor the name of W. E. Wellington. The amendment was agreed to, and Mr. Wellington elected for the sixth division.

The Association then adjourned until the following morning.

SECOND DAY.

The Association re-assembled on Thursday morning, the President in the chair.

Mr. Malcolm McDonald of Lucknow laid a specimen of cherries on the table and asked that they be named. They are large and red in colour, something of an ox-heart shape, and were said to last as late as November.

Mr. DEMPSEY.—I should call them Reine Hortense.

THE CATALPA.

QUESTION.—Is the Catalpa sufficiently hardy to stand the winter season in Huron, and what is the best means to protect in winter?

The PRESIDENT.—The Catalpa referred to is the Catalpa speciosa sent out by the Association last year, and from which these leaves on the table were taken. There are three species. The Catalpa bignoniordes is tender and not hardy in the district about London. Some times it will grow for two or three years without being injured, and then it will be cut down to the ground. There is, however, one tree in London which is about twenty-five years old, that appears in flower every year. Another Catalpa is the Kempferi from Japan, and is quite hardy. The variety, sent out by the Association, I think will be quite hardy in any part of Ontario.

Mr. ALLAN.—It has been tried in Huron, and seems to be perfectly hardy in Goderich. Some have said that it was not hardy until it got age.

Mr. BEADLE.—The trees sent out might be protected the first year, as a precaution.

HARDY SHRUBS.

QUESTION.—Kindly name a few hardy ornamental shrubs for this section?

The PRESIDENT.—There was one sent out by the Association, Hydrangea paniculata, introduced from Japan, which Mr. Wright tells me is quite hardy. If it is hardy up the Ottawa river, that is one of the best tests that you could have. It is the best of all recent introductions. In well-grown specimens the flowers will measure from eight to ten inches across. They are very handsome, and the ladies admire them very much in our district. In Spireas, there are two or three varieties that are very desirable. The Van Houtte is covered with a perfect mass of white blossoms in season, so thickly that you scarcely see anything of the foliage. It lasts about two weeks. The bush, however, is ornamental. The Spirea prunifolia also blossoms early in the season and I believe has proved hardy almost everywhere. It is a very desirable shrub. Then there are the Syringas or Philadelphus, of which the Coronaria is perhaps the best. The Wigelia rosea is hardy here and not only blossoms early but abundantly, and can be got from almost any nursery. All that I have so far named are very easily obtained, and have proved valuable. Of the Lilacs, the Persian Lilac is perhaps the most desirable on account of the richness of its flowers and abundance of them. They almost cover the shrub. I think the Snow-ball, Vibernum opulus is very nice, and the Japanese Snow-ball, Vibernum plicatum, although, inclined to suffer a little, can be made hardy. Then the Purple Berberry produces a perfectly formed bush, and as the bush is covered with flowers hung in racenes in summer and in the autumn with pretty berries, it is handsome the year round.

EVERGREENS.

QUESTION.—"What is the best time to plant evergreens?

Mr. BEADLE.—My experience is this:—If we plant evergreens in the autumn, they should be set out in August, or with us not later than first of September; while the ground is warm, so that new roots may be formed to support the trees during the winter. Having its leaves on all winter, there is an evaporation from the foliage, and unless the moisture can be supplied again from the earth, the tree will surely perish. If, however, it is planted early enough to permit it to throw out new roots, it will survive the winter without difficulty. Just one point on that. You will have to watch the season. You could have planted evergreens from the first of August this year. You can plant an evergreen after the spring wood has ripened up, provided you plant it early enough to throw out this new set of roots; but we often have drouth instead of the moist weather of this year, and then there would not be moisture enough to enable the plant to throw out these roots. You will not succeed in a dry time. I advise you, therefore, to plant evergreens in the spring of the year, towards the time when they start into growth. I have had better success in waiting until they began to push out growth, and the season had advanced far enough to warm the ground. When the buds begin to swell you will be safe in planting.

ORCHARD CULTIVATION.

Mr. DEACON (of Belgrave).—I purchased a farm some three years ago in June, and then the orchard on it seemed to be in splendid condition. I left, and did not return until September, when the trees looked more like dying than living. The leaves were curled up. I pruned the orchard next year, and I fancy I was a little severe, and only one or two trees had any fruit on. The next season some of the trees had quite a crop; such trees as the Tolman Sweet and Red Astrachan. This year I do not think there will be ten bags from the seventy trees. Last summer, in June, we ran a deep ditch down the side, and as winter was coming on we manured it; but otherwise, we used it as a pasture. The trees are middling high, and some will measure eight inches in diameter. The orchard may be fifteen years old.

Mr. DEMPSEY.—I have a small orchard that was wonderfully prolific. It has been about twenty years planted. We allowed it to go into sod, but it had been cultivated up to that time. Last year and this year there was scarcely any crop. I fancy if your

orchard were broken up and cultivated, you will not only make your trees healthy, but I think you will have a crop of fruit. You may have unprolific varieties, which with us do not produce enough to pay for the space they occupy ; but if the ground is broken up and kept fertilized, I think you should have no difficulty in getting a crop from trees of the age of yours.

Mr. DEACON.—I have a good many Russets. There are one or two trees of a dark green Russet, as large as my fist. There are some Northern Spies this year, and a few of the Maiden's Blush.

Mr. CROIL.—My orchard has given me a good deal of trouble, and I am at a loss to say whether cultivation is a good thing or not. I planted my four acres in 1869, and I continued to crop the ground with corn and potatoes until 1883. That is fourteen years. I find I have done more harm than good. All that time it bore well. The trees grew wonderfully. People passing along admired them. After a while, however, this spot set in, and all the softer varieties are worthless. I went up to another one of our places, and saw some fine Fameuse apples there, and on enquiry I found that the orchard had all along been in grass. The trees had not been trimmed or cared for, and there, his apples were sound and good. I had another piece of two acres planted two years after the one I have spoken of, and it has been in grass ever since. It is freer from spot than mine ; but this does not hold out all through. I have a tree that was planted forty years ago. Every second year I have taken fifteen or sixteen bushels of Fameuse apples off it, and it has been cultivated all the time. The fruit is not spotted.

Mr. A. McD. ALLAN.—I should fancy that in the case of Mr. Deacon the trees would require pruning every year. In cultivating the soil, one point you would gain by, would be the wounding of the roots. If you want to bring about bearing, you cannot do so better than by wounding the roots. That is the only way I can get General Hand to bear a crop. I should think summer pruning in this gentleman's case would also be advisable, and I think a proper quantity of top manuring should be spread under the trees, where the rootlets could get it.

Mr. DEMPSEY.—Cultivation, certainly, has some effect. When you cultivate an orchard lying in grass, the first year you check its growth. There is no question about that. Some years ago I undertook to adopt the system of pruning laid down by Mr. Rivers, of England. He is one of our best authorities, and he recommended, that in order to induce any variety of fruit to bear early, to transplant it every alternate fall. This is very severe. We adopted that plan with some standard pears that some people said required sixteen or seventeen years to come into bearing ; such as the Inverness. Even of that tardy variety, we proved that at the age of four years by this system of root pruning they could be made to bear. Strange to say, the tree will not be more than two or three feet high ; but the fruit is of superior quality. During the whole period of root pruning, Mr. Rivers recommends high fertilization. I tried it with several varieties of apples and pears, and in every instance it worked perfectly. I had a little Hawthornden apple tree that produced a crop for several years when it was only twelve inches in height. This may look unreasonable, but it is true. Wherever you cut off an old root, a fibrous growth results. I am satisfied that cultivation is a good thing.

Mr. ALLAN.—I have seen some fine instances of root pruning in nurseries where they use the tree digger. This knife runs under the trees, and cuts the ground in a circle. After using this for a couple of years, I have noticed these little trees in the nursery row covered with fruit.

Mr. DEACON.—What time in the year should this be done ?

Mr. DEMPSEY.—This is about the proper time. If you intend to be severe, do it the latter part of September or the beginning of October. Strip off the foliage and you will be surprised by the number of fruit buds that will mature. We cut a trench around the tree, at a distance, in proportion to its size, and thereby cut off the roots at a certain distance. By taking a sharp spade, then, we sever all the top roots. I follow Mr. Rivers' instructions. This spring we filled the trench with well-rotted manure, and you would be surprised by the quantity of fruit that was produced. There will be no spots.

The PRESIDENT.—It does seem that while some people take a great deal of trouble to keep trees alive, that others seem to succeed better by ill-using them.

CELERY.

Mr. YOUHILL (of Wingham).—Perhaps I have grown as much celery as any other man in the county of Huron. I have followed the directions given by Peter Henderson; but I find that his system of winter protection does not answer in this section. I attribute the failure to the excessive amount of snow. He recommends trenching out in the fall of the year, and as the cold increases he recommends an increase in the covering of straw to prevent freezing. There is a danger of covering it up too quickly, and generating heat. Now, here we generally have four or five feet of snow, and as it is necessary to get at this bed at all seasons, this system has its drawbacks here. The worst feature, however, was that the celery rotted. I would lose at least thirty per cent. As to kinds I believe the red celery is ahead of all others. In light coloured celery I have noticed that when the rot does come the centre goes first, while with the red, only the leaves are affected. I have for the reasons given, abandoned the trench system, and have put up a root house that is frost proof, and yet admits of ventilation. I have ventilators both at the ends and in the roof; I place the celery in trenches or rows, and the temperature being about forty it keeps perfectly. I may say that I excavate about two feet to make the bottom of the root house, and protect around the outside with sawdust. I place the celery together as thickly as I can get them without crushing.

Mr. WILSON (of Wingham).—I have grown celery for some years to a limited extent, but have not had much experience with any kind but the white. I thought at one time that the best place that I can get is my cellar. I put a board down and fill in rows of celery between that and the wall, using earth to come up to the top of the board or nearly so. I had a good deal of decay, however, for some time, and I have now adopted the plan of leaving it out all winter in a trench. I make the trench about six inches deep, and when I see the season going to be colder, I take some sawdust and cover up the plants so that you can see the leaves sticking through. I leave that on as long as there is severe frost; but as soon as the weather gets warmer, I take it off. It is inconvenient, but I had celery there until May this year and without any rot whatever.

Mr. HANNA (of Wingham).—I know a successful grower who fills his trench with sawdust instead of earth.

Mr. DEMPSEY.—I have learned considerable from the experience of these gentlemen. I prefer the red celery to the white, for the reasons given. As to wintering, we simply winter ours in the cellar. At the approach of winter we put in the cellar and keep as much earth as possible to the roots, and apply as much water as we can to the roots, being cautious that it does not get on the top. It grows well and bleaches out very nicely. I think that it is Mr. Woodward's plan to bore holes in the box, so that the water would not rise above the roots.

Mr. BROCKENSHIRE (of Wingham).—I have raised some celery, although not a large quantity, with some success. I kept mine one winter by digging a trench about a foot wide, fully the depth of the plants, covering tops and all. I packed it in tight, and then I laid some short boards across the trench. As the weather got very cold I threw a little straw over it. Then the snow came and covered the whole affair over. As I wanted the celery during the winter I took off one of the short boards and replaced it when I had taken out as much as I wished. It kept well and I had no rot. Last winter I tried another plan in which there was less work. I left my celery in the garden, and placed boards along the trenches so that they met in the centre like a roof. I threw straw over these, and as I wanted the celery I parted the boards and took it out. That plan worked well too. I find that keeping the plants out doors is preferable to keeping them in.

RASPBERRIES.

Mr. BROCKENSHIRE (of Wingham).—I have a spruce lot of raspberries, which I cannot name. I can grow black raspberries that keep until September; but the bushes take something like rot at the heart and die down. I have lost a good many plants in that way.

Mr. SIBBALD (of Wingham).—There is one variety which Mr. Veach has been very successful with. It is the Saunders. I have grown Shaffer's Colossal, and it has done

very well. The Gregg does well, and is hardy here. I have also grown the Cuthbert, but it suffered a little on the tops above the snow line last winter. Blackberries, such as Taylor's Prolific, do very well. Arnold's Diadem has done well and so has Mr. Saunders' hybrid. I do not see any difficulty in growing raspberries in this part of the Province, as we have plenty of snow to protect them during the winter.

Mr. VEACH.—I grow the Saunders here too.

Mr. MCDONALD (of Lucknow).—I only grow a few, and for varieties I have Mammoth Cluster, Philadelphia and Saunders. The Saunders is the best. It will bear double that of any others, and send up few suckers. In propagating I took the suckers from the bottom. My Mammoth Cluster was killed down to the snow line last winter; but the others were not.

Mr. MORTON.—I think it was the old Franconia that I started with, and I found it was apt to winter kill; but in flavour it was superior to anything I have had, except Shaffer's Colossal. I have also the Turner and Cuthbert. I tried to kill the Turner last winter; but this spring it was sound to the top. I think it is ironclad. The Cuthbert is fine and I like the flavour; but the Turner is a little too sweet for my taste. In yellow I have the Caroline, and my experience prompts me to say that it is not the same everywhere. I got my plants from a gentleman in Brampton. On his place I thought the flavour excellent but in my garden I wouldn't give five cents a bushel for them. It is sour and of poor quality bears, however, enormously. If I were only going to plant one variety, I should select Shaffers' Colossal. It has proved itself hardy, and it is an immense grower. The fruit is a little soft to ship, and the colour would be against it as a market berry; but it has enough of the black cap flavour to make it spicy and of excellent quality. In white caps I have Bebee's Golden; but as it is hard, seedy and lacking in flavour I do not think much of it. In black caps I have Souhegan, Gregg, Early Ohio and Davison's Thornless. The Gregg died down this summer and I cannot find any cause. It commenced to die from the top, but I have had no difficulty with it being killed in the winter. The Souhegan gives me the best return of any black cap that I have. The Early Ohio is much younger, and when it gets into full bearing it may be equal to it. I also have a seedling of my own. It is red, although not as red as the Cuthbert, and the berries are larger. It is a little coarse in the grain, but the flavour is very fair. It was an accidental seedling, and is quite hardy.

The PRESIDENT.—That experience with regard to the Caroline is very interesting, and explains why there is such a difference of opinion with regard to it. The Franconia referred to kills down to the ground in London, and we cannot get any fruit from it.

Mr. DEMPSEY.—In red raspberries nothing gives us the satisfaction of the Reliance and Turner, which are perfectly hardy, and appear to suit the market. In black caps I have nothing that will excel the Mammoth Cluster. The Ohio is certainly a desirable berry, although a little small. Shaffer's is good, but does not take the market. I might add to what I said at first, that we think that for cultivation and profit the Turner, Reliance and Cuthbert are all we require in red raspberries. We do not ship raspberries very far, but the Turner goes as far as Toronto. It will produce double the quantity of the Cuthbert.

Mr. BEADLE.—I might give you a word of caution on one or two varieties not mentioned. The Hansell was sent out as an early ripening, productive and hardy raspberry. I find that it is hardy, but unproductive, quality inferior, and no earlier than the Brandywine. The Superb was sent out as something extra fine. It is, however, very seedy. It may be very fine for cooking, but I cannot get enough berries out of my patch to try it. What little I do get crumble to pieces. While I am speaking I may say that there is a variety which originated with Mr. A. M. Smith, and which he calls the Niagara, I think. It was injured a little last winter, but nothing further than we would have pruned it, and this year it gave me a very good crop. It ripens by degrees, and long after the Cuthberts are gathered we can get sufficient for the table; and they begin to ripen about the same time. That might be an objection to those who grow for the market, and want to gather the crop in two or three pickings. The Colossal is, perhaps, the most productive, and best for cooking; but is not a high flavoured berry.

Mr. CROIL.—We find the Reliance and Philadelphia to suit us best.

The PRESIDENT.—I had a few berries on a young Marlboro' this spring; but I did not find it anything unusual. I may, however, change my mind as I grow it for a time. I have also seen Mr. Hilborn's seedling, and the fruit, as I have seen it, seems equal in quality to any in cultivation. Those who have had more experience with it speak very highly of it as a productive berry. I think it is an improvement upon most of the black caps in cultivation. Nothing has been said about the Tyler, but Hopkins and Souhegan are so much alike that it is difficult to see any difference.

Mr. BEADLE.—A word about the cultivation of the Turner. It is apt to throw up an abundance of suckers, and they must be treated as weeds.

FRUIT COMMITTEE'S REPORT.

The Fruit Committee, composed of Messrs. Govenlock, Beall, Hilborn, Col. McGill and Dr. Sloan, presented the following report :—

That Mr. Saunders, of London, shewed twenty-nine varieties of grapes, as follows: Jessica, quite ripe; Lady and Adirondack, nearly ripe; Martha, Hartford and Delaware, a few days later; Merrimac, Pocklington, Israella, Wilder, Worden, Wyoming Red, Canada, Abyssinia, Brighton, Janesville, Concord, Telegraph, Clinton and Marion, somewhat later, and in different stages of ripeness. The following are seedlings raised by Mr. Saunders: Alpha, white, medium bunch and berry, a hybrid, between Clinton and Buckland's Sweet Water, not yet ripe; Seedling No. 1, black, very small bunch and berry, and compact; hybrid of Seedling No. 1 and Black Hamburg, black, medium bunch and berry; hybrid of Clinton and Muscat Hamburg, bunch very large, long and heavy shouldered, berry medium, colour black, not ripe; hybrid of Seedling No. 1 and August Muscat, bunch and berry medium, very early, past its season, said to have been ripe on the 20th of August; Seedling of Diana, bunch and berry medium, bunch very compact, green; Beta, bunch and berry medium, colour green, not ripe; hybrid of Concord with Delaware, fruit resembles Concord, not quite so large, nicely shouldered, foliage quite distinct, but more like Delaware; Seedling, parentage unknown, berry medium, nicely shouldered, bunch somewhat loose, not yet ripe. Mr. Saunders also shewed a sample of Kieffer pear.

Mr. A. M. Smith, of St. Catharines, shews eight varieties of grapes in a much more advanced stage of ripening. The Jessica is quite ripe, Delaware, Worden, Niagara and Wilder, Brighton, Concord and Rogers No. 9, in various stages of ripeness in the order named. Mr. Smith also shows a few clusters of Niagara grape grown on the Hudson; they, of course, are quite ripe. Mr Smith also shews a few samples of Kieffer pear.

Robert McIndoo, of Wingham, shows a plate of Hartford not quite ripe. The plate of Hartford shown by John Snell, of Wingham, is nearer ripe.

B. Wilson and W. T. Brockenshire, both of Wingham, each exhibit a plate of grapes unnamed.

J. S. Hiscocks, of Wingham, shows five varieties of seedling plums, none of which has any special merit.

Hugh Smith, of Sarnia, shows twelve varieties of seedling Crab-apples, none of which are superior to many varieties in cultivation.

Dr. Sloan, of Blyth, shows a plate of Primate apple, of good size and quality.

Robert Govenlock, of Seaforth, shows the Capt. Jack strawberry in good condition.

J. A. Morton, of Wingham, shows two varieties of tomatoes, one of which is King Humbert, the other unknown.

Malcolm McDougald, of Lucknow, shows two branches of the Reine Hortense cherry, shewing a fine crop of fine specimens, fruit attached.

Mr. Dempsey placed on the table a few of one of his new hybrid pears of good appearance, but being in an unripe condition, your committee is unable to pronounce on its quality.

There were also two plants of the new strawberry "Jewell" on the table. The plants bore evidence in the roots and leaves of a very healthy constitution. These plants were forwarded to the meeting by the originator, P. M. Augur, of Connecticut, U. S. A.

Respectfully submitted on behalf of the committee,

THOS. BEALL, Chairman.

The Association then adjourned to meet again in Stratford, sometime in the winter.