TWENTY-THIRD ANNUAL REPORT

OF THE

FRUIT GROWERS' ASSOCIATION

OF ONTARIO.

1891

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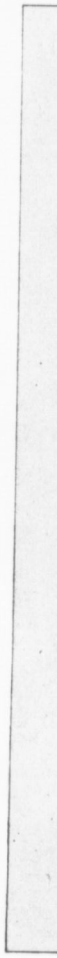
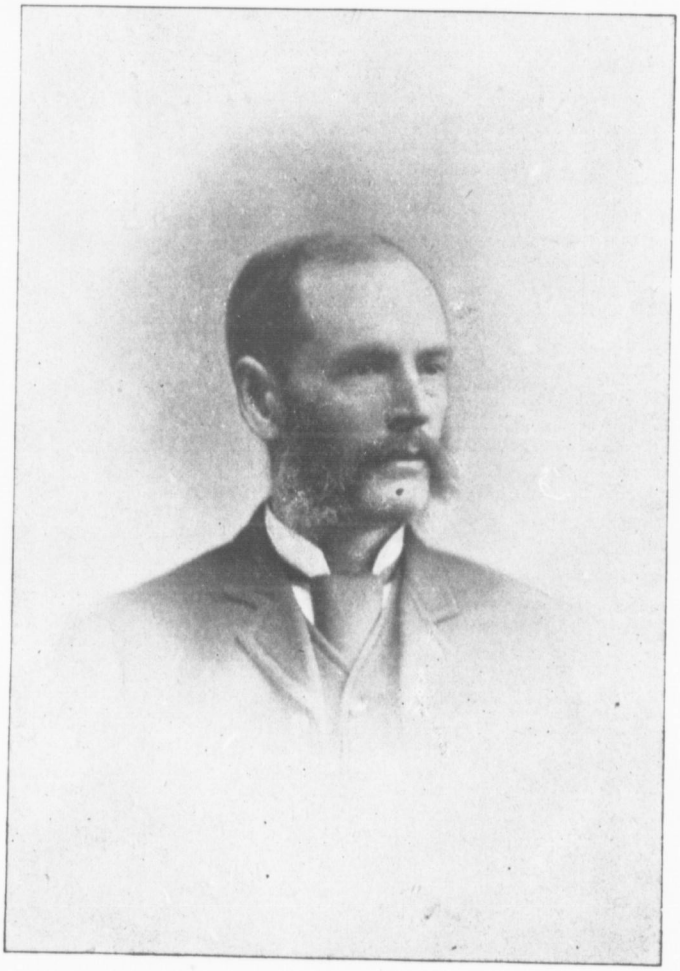


PRESIDENT



A. H. PETTIT,

PRESIDENT OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO FOR THE YEAR 1892.

INDEX.

ANNUAL REPORT

OF THE

ONTARIO FRUIT GROWERS' ASSOCIATION

To the Hon. John Dryden, Minister of Agriculture:

SIR,—In presenting for your approval the Twenty-third Annual Report of the Fruit Growers' Association of Ontario, I desire to call your especial attention to the great value of its contents to the fruit growers of Ontario. It contains the reports of two Winter Meetings, that of 1890 and that of 1891, the object being to have our proceedings published at as early a date as possible. This has been made possible by the holding of our Winter Meeting in December, just before the publication of the report.

It also contains, in addition to numerous valuable papers and discussions, lists of apples, pears and grapes adapted for our Province, with values attached, which should be very serviceable to fruit growers. These lists are by no means perfect or final. They are to be revised yearly, as further information is received concerning the varieties, from different sections of Ontario.

I have the honor to be, Sir,

Your obedient servant,

LINUS WOOLVERTON,

Secretary.

GRIMSBY December, 1891.

OFFICERS FOR 1892.

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A. H. Pettit ..... Grimsby.

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Division No. 13 ..... G. C. Caston, Craighurst.

AUDITORS:

E. B. Edwards ..... Peterboro.
J. M. Denton ..... London.

THE ANNUAL MEETING, 1891.

The annual meeting of the Fruit Growers' Association of Ontario was held in the City Hall, Hamilton, on Tuesday evening, the 15th December, 1891.

In addition to members of the Association, the following visitors were present: Wm. Saunders, Director of the Experimental Farm, Ottawa; A. Alexander, President Hamilton Association; T. M. Grover, representative Peterborough Fruit Growers' Association; A. Dawson and J. R. Howell, representatives of the Brant Fruit Growers' Association; Geo. E. Fisher and A. Peart, representatives of the Burlington Fruit Growers' Association; and others.

The President, Mr. J. A. Morton, of Wingham, took the chair at 8 o'clock p.m.

The minutes of the last annual meeting were taken as read.

The Treasurer's report was then read, which was as follows:

TREASURER'S REPORT FOR THE YEAR 1890-1.

Receipts.	$ c.	Expenditures.	$ c.
Balance on hand last audit	84 50	*Canadian Horticulturist*	1,570 59
Members' fees	2,209 20	Directors' expenses	248 31
Government grant	1,800 00	Plant distribution	267 79
Advertisements	227 21	Chromo lithographs	342 86
Back numbers and bound vols. of the *Canadian Horticulturist*	28 27	Electrotypes	43 21
		Express and duty	180 03
		Printing and stationery	108 50
		Postage and telegrams	103 90
		Commission	136 31
		Stenographer	62 25
		Discounts	20 00
		Care of rooms at meetings	3 00
		Committees	46 10
		Bookbinding	77 17
		Omissions	18 65
		Salary, secretary-treasurer, editor and office clerk	1,000 00
		Balance on hand	120 51
	4,349 18		4,349 18

To the President and Directors of the Fruit Growers' Association:

Gentlemen,—We, the undersigned Auditors, appointed by the Fruit Growers' Association of Ontario to examine the accounts of the Secretary-Treasurer for the year ending December 1, 1891, beg to state that we have carefully examined the accounts, both of receipts and expenditure, and have found them correct, leaving a balance in hand, deposited in the Traders' Bank of Canada, of one hundred and twenty dollars and fifty-one cents.

J. M. Denton,
Jas. Goldie, } Auditors.

Hamilton, December 15th, 1891.

Upon motion the Treasurer's statement and the audit thereof were duly adopted.

The President, Mr. J. A. Morton of Wingham, delivered his annual address.

THE PRESIDENT'S ADDRESS.

The ever revolving wheel of restless time has added another year, with its varying successes and disasters, to the history of the fruit growers of Ontario, and brings us once again in annual convention, as officers of the Fruit Growers' Association of Ontario, to render an account of the trusts and duties required of us, and as individual members to fraternally exchange ideas on subjects of horticulture.

Like members of a devoted family, severed by distance, these annual reunions are looked forward to with pleasurable anticipation, and, as we gather together in friendly intercourse, the feeling comes upon us, that we are once more, *at home.*

It is a source of gratification to find in reviewing the history of the past, that the invariable tone of our discussions has been that of the utmost good fellowship.

In our deliberations, any one who has aught of interest to communicate upon any of the subjects upon our programme, be he sage or novitiate, professional or amateur, has perfect freedom of speech, and while you may not be able to convince us all of the correctness of your deductions—for some of us are very tenacious of our own opinion—we pledge ourselves that now as in the past the presentation of your views will be received with respect.

We meet on a common level, all touched we hope with the feeling of a common humanity, and, while the opinions of a Dempsey or a Saunders are always received with that deference which views based on extensive experience and wealth of technical education carry with them, the facts and hints collected by the babes in horticulture are no less acceptable. Some of the brightest discoveries in this as in other pursuits have emanated from the observations of the veriest tyros, whose utterances, like crude material fashioned into useful shape by the hands of the skilled workman, have become elaborated by those better informed into information of great economic importance in the realm of science.

And, in this connection, I would call especial attention to an important feature of our meetings—the Question Box. The papers upon our programme generally deal with matters and facts, which are well established ; few of us have nerve enough to attempt in a paper the embodiment of our nebulous ideas on matters that are as yet little understood, or are in controversy, or to defend ourselves from the hostile criticism which the promulgation in a set paper of our ideas on such a subject would evoke. The Question Box affords a safer vehicle for the diffusion of such ideas, and is also used as the means for bringing before our gathering any point not in our programme upon which information is desired. Write out your query upon paper and hand it to the secretary ; he is our box. Do not be afraid of filling him too full ; his receptive faculty is great.

Although the fruits of Canada are favorably known in the Mother Country, they are not so well known as to render useless any futher information on the subject. An excellent opportunity was offered for advertising them by exhibition at the International Fruit and Flower Show, held by the Royal Caledonian Horticultural Society of Edinburgh, at that city on the 9th, 10th and 11th September, last. That this opportunity was not made use of was no fault of this Association. A kind and pressing request to make an exhibition

of our fruits was sent on the 8th June last, by the Edinburgh Society, but unfortunately being evidently not conversant with the location of the principal Horticultural Society of Ontario, they directed their letter to the Ontario Pomological Society, Canada, (rather an indefinite address); this was received by the Gardeners and Florists Club, Ottawa, who endeavored to obtain financial assistance from the Dominion Government to aid them in such an exhibt. They however failed in this and, on the 17th August last, the communication from the Edinburgh Society was forwarded to our Secretary. The request for an exhibit of our fruits, coming to our knowledge at so late a date, precluded any attempt at making a display in keeping with either the reputation of our Association or the importance of our province, and your directorate were compelled to reluctantly abandon the idea, a conclusion with which the Hon. Mr. Dryden, who had been consulted by us in the matter, concurred.

We have still however another exhibition of much greater importance than the one just referred to and one which I think should engage the earnest attention of the Directorate and members of this society. I allude to the Columbian Exhibition and World's Fair to be held in Chicago in 1893. I think I am within the bounds of reasonable probability in predicting that this exhibition of natural and artificial products will be greatly in advance of anything before had on this continent, if not in the world. No one will for a moment dispute the importance of Canada and especially our own province representing her horticultural interests to the best advantage at this Fair. The questions that arise in connection are: How should this be accomplished? How can we as the most important horticultural body in the Dominion best further this object? What immediate action should be taken in the premises? These are important questions which in my opinion should receive your careful consideration.

The object of this Association is the dissemination of horticultural information, and the perambulatory system of our conventions has been adopted as the means best calculated to diffuse such information throughout the province.

Formerly three meetings for the discussion of topics in connection with horticulture were held in the year. With the establishment of farmers' institutes, and the plan of sending out to their meetings speakers qualified to discuss topics of agriculture and kindred pursuits, came the request that this Association would co-operate in the good work by furnishing speakers upon horticultural subjects. With this avenue opened for presenting to the public the aims and objects of the Ontario Fruit Growers' Association of Ontario, in 1888, your directors decided that two meetings in the year would be sufficient. In December last, it was further decided by us that the summer meeting should be withdrawn, and the funds thus saved be used to supplement those of any farmers' institute desirous of securing speakers from our Association at their summer meetings, by bearing a portion of the expenses of such speakers. This has been found to work well, several farmers' institutes have availed themselves of the oportunity and, no doubt, as our willingness to assist them in their work becomes more generally known among the institutes, our reserve of speakers and available funds will be taxed to the utmost. I am decidedly of the opinion that the money which was formerly disbursed in connection with our summer meetings, spent in this way, will be expended to better,

advantage and be productive of better and greater results. At several of the meetings of farmers' institutes which I have attended I distributed such copies of our annual reports old and recent, as I had at my disposal and I was much astonished at the amount of ignorance prevalent concerning the veriest rudiments of fruit growing and much pleased with the eagerness exhibited by many to obtain information of a practical nature on the matters of horticultnre.

One of the needs in our work is a manual or primer of fruit growing—not too large or elaborate a work—containing instruction of an elementary nature; a pamphlet written by thoroughly practical men in plain, simple and compendious language, entering into the details of each operation with sufficient minuteness to be of assistance to the beginner, and confined to the consideration of the production of our commoner fruits. Many works of a professedly rudimentary character have been published and let loose upon an unsuspecting public, but I have yet to find the one which does not mar its usefulnes by at least two serious defects: 1st by the neglect to begin low enough down in the art, assuming the reader possessed of more information on the subject than he really possesses, too little of the "how-to-do-it," and 2nd by the inconsiderate use of unnecessary verbiage, and the introduction into practical topics of extraneous though cognate subjects, in other words too much padding—disquisitions upon the ethics or æsthetics of horticulture are out of place in such a work. We want a concise, intelligible exposition purely practical in its character of the best methods in fruit growing.

We have no lack of practical men capable of preparing such a hand book, and the Government of this province is surely paternal enough to bear the expense of printing a sufficient number for distribution. A pamphlet of this nature, distributed among our people by means of farmers' institutes, would have a wonderful effect in encouraging and stimulating fruit growing in our province.

Our repeated remonstrances and publication of plain, stern facts in reference to the way in which the transportation of fruit has been conducted by the carrying trade of this country, have had their effect, and although all cause for complaint has not been removed, evident improvement has been made in the handling of fruit and in its protection from theft in transit, indicating a desire and attempt on the part of the carrying com panies to remedy evils and correct the abuses complained of. There is much less pilfering and petty thieving from packages than formerly, several cases were however reported to me, in all of which communication was had with the carrying company concerned, who as usual replied promising investigation into the matter. Prompt and persistent report of every grievance will greatly assist—and I may add constrain—the companies to "spot" and dismiss dishonest and incapable employés.

The fruit crop of the past season has been in many sections discouraging, the more so as following a season also much below the average. As a rule, however, small fruits have been produced abundantly, the crop of grapes has been phenomenally great with prices correspondingly low, the prices of other small fruits have been well maintained considering the great output. We have been again visited with a short crop in apples and pears. Our sister province, Nova Scotia, has been blessed with an unusually large yield of apples, and a similar condition of prosperity has been enjoyed in many sections of the great

republic to the south of us. The importation of apples into Great Britain, from this continent, up to the present time have been greatly in advance of those of former years, at the corresponding period of the season, exceeding the famous season of 1888-9. The quantity of apples already received this season from the continent of North America at the port of Liverpool alone, exceeds last season's entire import at all the ports of Great Britian and from all sources. Naturally prices in the foreign market have gone down, and at present are not such as to entice further exportation. Returns from the home market have been much more remunerative, and the grower who held his fruit for disposal in our own markets instead of exporting it has done the wise thing this year. The experience of this year's shipping trade is another lesson on the necessity of better means for collating full information from all producing sections of the estimated and actual crop.

The discoveries of recent years in economic science have enabled us, by the timely use of the remedies and formulæ from time to time suggested, to cope successfully with our insect enemies, so that now, neither from the standpoint of economy of labor, nor from that of adequate financial result, can the neglect to suppress herbivorous insects be defended. Fungoid diseases seem however to be much more formidable than formerly, due in a great measure to ignorance as to the cause of the effects exhibited, to the carelessness of many in not adopting adequate measures for the suppression and extermination of such foes when their insidious work was first discovered, and to the failure of science as yet to provide efficient and practicable preventives against some of these minute but destructive forms of vegetable life. The increased attention that is being given to vegetable pathology and therapeutics by the various experiment stations and by private investigators, will no doubt speedily evolve satisfactory solutions to these problems, and enable us to effectually combat these serious impediments to successful horticulture.

One of these microscopic pests, producing what is known as "the rot" in the tomato has been particularly active during the past season; its ravages have been pretty general, complaint being heard from many sections. Any remedial agents tried by myself or upon which the opinion of others has been obtained, fail to attain that degree of reliability which can be considered as satisfactory; with me it was very destructive this year. I shall briefly epitomize the result of my observations and experiments.

1. Those vines trained to trellises and kept pruned so as to admit of the free access of light and air were freer from rot than those trellised but not pruned, and these latter in turn were much freer from disease than those permitted to grow recumbent on the ground.

2. That method of cultivation, which allowed the ground under and around the vines to remain wet and sodden, increased the virulence of the disease.

3. Bordeaux mixture and ammoniacal carbonate of copper solution seemed each to be of assistance in restraining the ravages of the rot; little if any good resulted from the use of other applications, and, permit me to mention, that potassic sulphide gave me negative results. The experience of other careful investigators is adverse to this, and I simply state the apparent result of my experiment, not daring to draw any conclusion adverse to its efficacy based on one year's experimentation.

4. Pruning the vines so as to allow them to be freely permeated by light and air

and training the branches sufficiently high to prevent the ground remaining wet, coupled with a friable condition of the soil, were of more value than any medicament applied.

The point has been raised as to the deleterious effect upon the soil of continued applications of remedial agents in which copper compounds form constituents. Those who should know are divided in their opinion as to the ultimate result upon the fertility of the soil. Scientific combat upon the use of salts of copper in this way is now in progress, the result of the first few "rounds" is decidedly in favor of those who advocate their use, but until the intellectual duel is finally settled, it behooves us to act with caution lest a condition arise from which serious loss would ensue.

Before closing my address I desire to call attention to two bulletins issued by the Central Experimental Farm at Ottawa, Nos. 10 and 11 of this year. These bulletins are of great interest to fruit growers and should be in the hands of all our members, containing as they do in compact form much desirable information upon the subject of apple scab, grape and gooseberry mildew and insect pests, with practical directions for their suppression. The delay in the distribution of these bulletins until the season had considerably advanced depreciated their usefulness for this year, but blame for such delay cannot be laid upon the shoulders of the Director of the Farm or of any of his staff.

A discussion followed this able address, the tomato rot and the disappointing results of late shipments of apples to England being the principal subjects touched upon.

Mr. A. McD. Allan, of Toronto, thought the apple crop of the season had been on the whole very satisfactory, but he thought that pickers made a mistake in picking their fruit too soon. If the maturing process has set in before the apple is picked it cannot be expected to keep long in good condition. The English buyers always rolled aside any damp barrels, or barrels in which any motion was observed, although they often contained just as good fruit as the other barrels accepted.

Prof. Saunders moved a vote of thanks to the President for his able address, and a committee was appointed, consisting of Messrs. Allan, Smith and Wellington, to consider the matters contained therein and report.

The next business was the election of officers, but as Prof. Saunders had to leave after the close of the session it was decided to hear him and allow the election to stand over.

Prof. Saunders stated that he was down in the programme for an address on "The Possibilities of Fruit Growing in Manitoba and the North-West." He could speak better of the impossibilities of this, and feared that the ordinary settler who tried to grow apples there would be disappointed. There were several varieties of the crab, however, as, for instance, Whitney's No. 20, Transcendant and Hyslop, that were hardy and which might survive. His observations in the North-West had gone to show that the soil in Manitoba was not poor enough, was too rich in fact, to grow good apples. The rich prairie bottom invariably killed the fruit. The fruit growers there would require to continue their tests, and he recommended the gravelly strips in the valleys as the best place in which to plant. The lack of shelter was another factor against the fruit attempted to be grown in the open. Land strips were now being formed, planted with double and triple rows of Manitoba maples so as to form shelters, and it was hoped that this experiment would help to solve the difficulty. The Pointed Pepka, the Summer Arabka, the Sandy Glass, the Gipsy Girl, the Ostrakoff's Glass, the Ukrane, were all apples which had done well at the Experimental Farm at Brandon. The cherry crop in Manitoba and the plum crop were partly winter-killed, but the Koslov Morello cherry, one of the varieties received through your Association from Mr. Niemetz, of Russia, has

endured the winter and made strong shoots about two feet long, so that he was in hopes that in it would be found a cherry sufficiently hardy for that country. The small fruits are very encouraging. Of raspberries tested at Indian Head, the Caroline, Philadelphia and Turner had proved the most successful; currants, and some of the American varieties of gooseberries also promised well, but the English varieties were not so likely to succeed. The last season had been much more moist than in the past, and the strawberry crop had been larger in consequence. It would take very many years before the people in Manitoba could grow all the fruit they needed for their own consumption, and Ontario had still a great market before it.

Fruit Growing in British Columbia.

The coast climate of British Columbia was very suitable for fruit growing, and almost anything could be grown there. Experiments were being made there so that a fair opportunity could be given for comparison of results, and in order that the fruit growers there might study and learn for themselves, 755 varieties of fruit had been planted at the Experimental Farm, at Agassiz, B. C., and when the World's Fair was opened at Chicago the fruit exhibited from that part of the country would astonish the world. The ornamental varieties of trees, such as lilacs and Russian poplars, were found to be full of promise of future usefulness. The Norway spruce had done well about Winnipeg, but it did not flourish everywhere. Over 3,000 young trees had been sent out during the year to farms in the North-West, and there was every reason to believe that in a few years they would be seed producing. Six thousand bags of seed had also been sent out, and a record was kept of the points to which these trees and seeds were shipped. Prof. Saunders concluded his address by paying a deserved compliment to the Association, giving it as his opinion that the work done was of the highest usefulness.

REPORT ON NEW FRUITS.

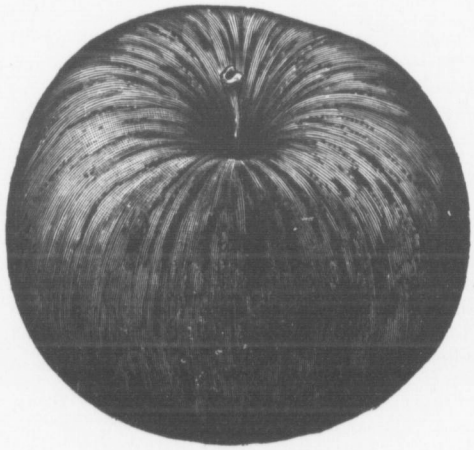
The Secretary read the following report on new fruits that had been sent him during the year:

Your Secretary has little to report at this meeting concerning new native fruits introduced during the past season. A large number of varieties, that were previously introduced, have been sent to me for testing. These have been grafted upon bearing trees and will in a short time be producing fruit. I hope that I shall then be in a position to give you some reliable data with respect to the value of these introductions. All that I can do at present is to give you here some record of those new varieties, samples of which have been sent to me during the summer by their originators, especially of those which seem to commend themselves to notice.

Peaches.—A basket of the finest looking peaches I ever saw were sent me by Mr. Tyehurst, of Leamington, on the 22nd of September last. He says that he grew this variety from the pit some years ago, and that it has proved the hardiest and most profitable of all the varieties he has tried, and he has tried a large number. He considers this variety to be totally distinct from the many varieties of yellow peaches. This peach impresses me very favorably, not account of its beauty of appearance only, but because it comes into the market at a time when there are few of such a class to compete with it. On the day when the sample came to hand the season of the Early Crawford was past, and I was shipping to the market Old Mixon, Late Crawford, Wager, etc., all of which were far surpassed in beauty by this Tyehurst seedling. Mr. Tyehurst has seventy five acres of peaches, and finds this variety more profitable than any other. It has been stated that his peach crop of last year was valued at $10,000. Description:—Size, large, roundish, somewhat flattened both at the base and at the apex, with very distinct suture on one side; skin, golden yellow, with crimson on the exposed side; flesh, yellow, moderately juicy, sweet and excellent, separates freely from the stone.

Pears.—I had a sample of the Ritson pear sent me by Mr. W. E. Wellington, which impresses me favorably. This pear is about medium size, greenish yellow; flesh, white and buttery. The quality is excellent, fitting it to be classed as a prime dessert pear. The tree is a seedling which was planted by the late John Ritson, of Ottawa, one of the oldest settlers in that vicinity, and a prominent farmer and fruit grower. The original tree is seventy years old, and has never been attacked by blight, and is a regular and abundant bearer. For canning and pickling its owner counts this pear as the very best of which he knows.

Among *Apples* there was sent to me about last May, from Ottawa, a seedling of Mr. Greenfield's. This is claimed to have value as a hardy winter apple for the cold north, keeping in perfect condition until May or June. An engraving of it is here given. The quality of it, however, does not impress me very favorably. It might be called good, but that would be saying enough for its quality. It would not be desirable as a table apple, but only for cooking. Description:—Size, below medium; form, roundish, slightly conical, ribbed; skin, light green, washed and striped with carmine; stem, three-quarter inches long, in a deep, narrow cavity; calyx, closed in a very shallow, wrinkled basin; flesh, white, crisp, tender, mild, sub-acid, juicy; flavor, poor, but scarcely mature enough to be fairly judged.



Greenfield's Seedling.

A beautiful apple was sent me last October by Rev. R. Lewis, Maitland. In its tints of color it surpassed the very popular Red Astrachan. But in addition to its beauty of color, it also possesses excellencies of quality sufficient to commend it anywhere as a table apple. Mr. Lewis writes that he believes that the apple is a seedling and, certainly, we know of no other apple of the same characteristics. Its season is October and November. Description:—Fruit, medium to large, roundish, oblate, with one quarter considerably enlarged; skin, pale cream splashed and shaded with pink, turning to crimson on sunny side, which in some samples completely covers it, obscurely blotched with markings of dark carmine; stalk about five-eighths of an inch in length, inserted in a deep, evenly formed cavity; calyx closed set in a basin of moderate size and depth; flesh white, streaked with red, tender, juicy, aromatic; Quality, very good.

Among *Grapes* there is little to report. A sample of an exceptionally early grape was sent me by C. S. Curtice Co., of Portland, N. Y., on the 3rd of September. This grape was then dead ripe, and the growers stated that they had been picking the fruit since the 24th August, and that in the previous year the vines had been picked clean by the 17th or 18th of August. They claimed that it is one or two weeks earlier than Moore's Early. The bunches are certainly close and the fruit of fair quality. The chief commendation, however, seems to be its earliness. The berry is black, below medium in size, and thickly covered with bloom; the pulp is soft and contains two seeds.

Of *Small Fruits.*—Samples have been sent me of three gooseberries which appear to be worthy of notice. The Triumph is a remarkably large variety, and apparently not subject to mildew. This, however, is already in our nurserymen's catalogues and, therefore, does not need to be noticed here.

Mr. John Carnie, of Paris, sent me samples of a gooseberry which he says he has cultivated for sixteen years and he has not yet found any mildew upon it, although sometimes surrounded with others which were covered with mildew. It is not really a new variety for Mr. Carnie says that it is one of twenty varieties which he brought out from

Scotland some twenty years ago, and of which he has forgotten the name. It is a large yellow gooseberry, larger than the Whitesmith, nearly round in form, and the flesh is tender, sweet and excellent in flavor.

A sample of the Sutherland's seedling was sent me on the 29th of July, by Mr. Geo. Sutherland of Meaford. This gooseberry is of large size and good quality. Mr. Sutherland believes that this is a seedling of the Downing, and certainly it shows some characteristics of that variety. The bush is a strong upright grower like the bushes of the Downing. Mr. Sutherland has grown the Industry and Whitesmith by the side of it for some three or four years and, while both these varieties have been subject to mildew, this variety has never yet shown any weakness in that respect. What it may do in the future of course no one can say.

It will be noticed from our list of plants to be distributed during the coming spring of 1892, that we have placed on our list five Russian apples which we hope will prove of value in the cold north, viz.:—Gipsy Girl, Round Borsdorfer, Blushed Calville, Little Hat and Silken Leaf.

I am just in receipt of the following letter from Mr. Jaroslav Niemetz, Director of the Real College, Winnitza, Podolie, Russia. In it he gives a description of the new lot of scions of Russian fruit trees, which is now on the way to Canada. The greater part of this consignment will be placed in the hands of the Experimental Farm, Ottawa, for testing before distributing.

This exchange with one in Russia who is in so favorable a position for securing the best fruits of that country to send to us, is a fortunate thing, and we hope that excellent results will in time be gained by this exchange.

He says: "Of the following list of scions those numbered from 1 to 24 I have ordered particularly for you from Kalouga, where they originated in a garden in an exposed situation, where the normal lowest temperature is 32° C. below freezing point (or – 26° Fahr.) Last year there were two weeks with a temperature of 38° C. below freezing point (or – 36° Fahr.), without snow. The minimum was 44° C. below freezing point (or – 47° Fahr.), which lasted two days only. The trees were not sheltered and yet remained alive.

From Kalouga.

1. Autumn Bergamot; good.
2. Morello; red.
3. Princess; summer; yellow.
4. Toskin (Toskinskoe); very early; variety from Gruschevka.
5. Apricot Plum.
6. Ox-heart Cherry.
7. Paunta Plum; greenish yellow; autumn.
8. Mitschurin Pear; very large; autumn; good for kitchen and evaporating.
9. Sugar Pear; large; good.
10. Morello; dark red; large.
11. Autumn White Plum.
12. Griotte de Scoux; excellent.
13. Monastyrskoe, or Monastyrka Apple; autumn; red; very good.
14. Sizoe; excellent new Russian apple.
15. Bonchretin de Kalouga; very good, large autumn pear; foreign variety acclimated in Russia.
16. Anisimov, or Half Crimean; excellent; autumn.
17. Autumn Striped, or Kurskoe; winter; large; very good.

18. Lutschaninov Pear; large; autumn; good.

19. Borsdorf; Russian variety; summer; transparent; very good.

20. Gliwa; very large, for evaporating.

21. Duchovoi Pear; very good; large; yellow; autumn.

22. Red Winter Calville; very good dessert apple. It is possible that this variety is an acclimated kind in Russia.

23. Red Crab.

24. Yellow Dessert Apple; summer; transparent. Perhaps this is the well known Yellow Transparent.

Out of my own Garden.

N.B.—I bought my garden eight years ago, and it contains some very old trees. It lies quite open, and the trees have never been protected in the winter. I have known it to be 32° C. (or 26° Fahr. below zero) here. I have found some of the kinds to be very desirable.

25. Sucre-Romain, deutch; Romische Schmatzbirne, Princess, etc., in Russia, Red Panna. This kind is very common in Middle Europe, and also in Russia. It is an excellent market fruit. I will describe it more fully in the *Canadian Horticulturist.* The tree is very hardy and productive. I send you a good many scions in order that you may distribute them widely.

26. Diesen Apple. This apple I have sent you previously, but under a false name of Gremutsch; the right name is Red Subluck. I send you many scions of this variety. It is a very large and beautiful antumn apple, for market and kitchen. It does not rot as the Alexander does.

27. Alexander. This variety in my garden is perhaps another variety from that which you grow, but I cannot say positively.

28. Reinette Grise, is an old European variety, and very common in Western Russia.

29. Winter Pear which I have found in my garden and of which I do not know the name. The fruit is medium sized, green; flesh somewhat coarse but juicy, and keeps until March, perhaps much longer; very good for market and cooking.

30. Stettin. A variety found in Middle Europe and in Russia. It is a market fruit. There are two varieties, one red, the other yellow.

31. An apple that the Dutch pomologists have named the Gubener apple. It is a native of Germany. This kind I have found in my garden. The fruit is large, beautiful, yellow, with some keep until summer. It tastes good, but is somewhat sweet, which I notice Americans do not like. The tree is an annual bearer.

32. A small Winter Beurre. A small winter butter pear from my garden. The name is unknown. It is an excellent juicy and has an especially high musky flavor. I would like, if you do not find a name for it, to have it called Buerre Musque. It is uncommonly fruitful.

33. Panna, Krasavka? (Long Pear.) This variety is good both for the kitchen and the market. It is found everywhere in Europe. I send you many scions because it endures the frost of the latitude of Moscow. I will describe it in the *Canadian Horticulturist.*

34. German Prune. With me there is a great variety of these.

35. According to some pomologists this is called Blumenbach's Butter Pear, by others the Beurre Napoleon. In my opinion the right name is Blumenbach. It is an excellent late autumn pear and hardy.

Without number, Niemetz's Winter Rambour. This variety was discovered in my garden and named by Russian pomologists after me. It is a large and good excellent winter apple, which I will describe in the *Canadian Horticulturist.*

Seedlings of the Jaroslav Cherry. This cherry is not named after me, but after the Jaroslav government.

Two plants of our Russian gooseberries. These are small yellow sweet varieties. Whether they will be effected by the mildew in America I do not knew. With me they are healthy.

36. The Czar Pear.

37. Czeglovka.

38. Beurre de Livonie, a small and very good butter pear, very white and very hardy, grows in the Tamboff government.

39. Beurre Slutzsk. Apparently a seedling from an unknown French kind, very good, hardy. I will describe it in the *Canadian Horticulturist.*

40. Medovaia, Honey or Sugar Pear No. 9.

41. Almond Reinette, or Dietzer Gold Reinette ; good hardy kind ; bears annually.

From the Government of Kharkoff. Without numbers.

Lemon Pear, good for market, hardy. Seeds and pits were received from Russian Asia and Siberia.

Please tell me if the Russian pear succeeds well. Any kind of hardy apples are easily found, but there are very few hardy pears. Of all the varieties, I can only place Beurre de Levonie and Beurre Stutsk on a par with the French varieties. All the others are good market kinds, but not fine table pears.

I will still farther endeavor to find pears which will endure at least 37° C. of cold.

As I sent away the chest, I received a small collection of interesting varieties and shall forward them. I have prepaid the box as far as the borders."

All of which is respectfully submitted,

L. WOOLVERTON,
Secretary.

Mr. BEADLE.—How does the Early Ohio compare in earliness with the early varieties here ?

The SECRETARY.—It is about a week earlier than Moore's Early.

Mr. BEADLE.—How is the quality ? Is it as good as Champion ?

The SECRETARY.—It is superior to the Champion, quite as early, though not so large a berry. The bunches are very close.

COMMITTEES.

A nominating committee was appointed to nominate the officers for the coming year, consisting of Messrs. A. McD. Allan and M. Pettit appointed by the chair, and Messrs. W. E. Wellington, T. H. Race and D. Nicol appointed by the meeting. This committee reported as follows :

President, A. H. Pettit ; Vice-President, T. H. Race ; Directors—1, W. S. Turner ; 2, John Craig ; 3, D. Nicol ; 4, P. C. Dempsey ; 5, Thos. Beall ; 6, W. E. Wellington ; 7, Murray Pettit ; 8, A. M. Smith ; 9, J. R. Howell ; 10, A. McD. Allan ; 11, J. D. Stewart ; 12, N. J. Clinton ; 13, G. C. Caston. After these names had been voted upon the report was adopted.

Mr. A. H. Pettit on being called to the chair made a few remarks thanking the Association for the honor conferred upon him in electing him as its president.

The following committees were duly appointed by the chair, viz. :

Fruit Exhibit—John Craig, E. Morris and D. W. Beadle. New Fruits—The Secretary, W. E. Wellington and A. McD. Allan.

RUSSIAN APPLES AND PEARS AT MOSCOW MARKET.

A Letter from Russia.

Dr. Alexander Grell, of Moscow, one of the well known growers of Russian trees, wrote a pamphlet containing some interesting articles upon the apples and pear exposed for sale in the Moscow market, their market value and the value they have for commercial orchards. From his lengthy communication I extract for you the descriptions of those kinds of which I send you scions. To some of them I will add hints from my own experience.

I. Pears.

1. *Bessemianka.*—This pear received its name because of its small seeds. It is an excellent pear for the north. It originated at Kaluga. It is sweet, juicy and bears transportation well, if harvested early. It ripens in September and keeps for two or three weeks, but, of course can be kept longer in cold storage. The tree is a vigorous grower, pyramidal in form, begins to bear at about the age of five years and produces abundant and annual crops thereafter. It is distinguished from all other pears because its flower buds are round, clinging close to the branches like those of apples, while those of other varieties are sharp. At Moscow winter kills it and it does not bear more than 34C of cold. It is more hardy in the southern governments of Tula and Riazan The market price of the Bessemianka is 2 and 3 rubles for one poud.*

2. *Dame Pear* or *Griapa*,—Called at Tula, Milepin pear. This variety is like the Bessemianka, but the fruit is yellow with red side. It carries well to Moscow from Tula. The tree is not hardy at Moscow. It is a variety little known.

3. *Lemon Pear.*—This pear resembles a lemon, of a pale yellow color, without blush. It is of beautiful appearance and pleasant to the taste. It ripens about the end of September and keeps two or three weeks. The tree is large headed, leaves round, bears freely, but is not hardy at Moscow. It is good at Tula, Riazan and Kursk governments. The value is about the same as the Bessemianka. This sort has two sub-varieties. It cannot be of Russian origin, as it is found in large quantities in western Russia where it is valued for drying and other purposes. In productive years you can buy this variety in the market, either in the south or the north of Russia, at a very low price. I send you scions of this variety.

4. *Tonkovietka* or *Smolensk Pear* .—Its name is derived from its long pedicels and thin branches. The flavor is good, but it soon becomes over-ripe. Size medium, skin yellow with one side red. The tree grows quickly. It is beautiful and is not easily affected by the frost at Moscow. The fruit is worth in our market from 1½ to 2 rubles per poud. It is good stock to use for grafting tender sorts of pears on, because it is so hardy and, for this reason, I call the attention of fruit growers in northern Canada to this variety.

II. Apples.

1. *Plodovitka.*—Not large, medium, with red side, ripens in October and keeps all winter. The tree is pyramidal and is hardy. This kind is good only for "wetting."† Price, 1 to 1½ rubles per poud. There are two varieties of this kind, the ordinary, Plodovitka from Kiev and a red variety.

2. *Skrut*, also *German Skrut.*—Flesh white, skin pale red, ripens in September. The tree is a spreading grower, leaves small with white blossoms. The tree is hardy The fruit is small and only grown for the St. Petersburgh market, where it is very much prized. Worth about two rubles.

3. *Skrisk.*—Medium size, ribbed, dark green with red flesh, of acid, vinous, aromatic flavor keeps through the winter. The tree is pyramidal with long leaves; endures the cold very well and is an annual bearer. This is one of the better varieties of Russian apples. It has been distributed under the name of Avenarius.

4. *Anis.*—Very pleasant, red apple, vinous in taste and aromatic in flavor. Ripens toward the end of September and keeps till November, carries well and sells well. The

*1 poud=16 kilogammes ; 1 ruble=about 60 cents.

†A dish used in Russia. Apples are put in kegs, covered with water and left in cellar. When they become sufficiently acid, they are served with meat, like cucumbers.

tree is round-headed and hardy; endures the heaviest frost and is an annual bearer. This excellent winter apple has no equal for productiveness and hardiness. It is a fine sort for commercial orchards and very useful as stock for grafting.

5. *Arabskoe* (Arabian.)—Large, exceedingly waxen with dark violet blush, keeps till winter and is useful for cooking. The tree is not very productive.

6. *Titovka* colored, (Tetofsky.)—Good and profitable variety for a small garden. The fruit is large, oblong, yellow, well colored sub-acid in taste. The tree is pyramidal, large and very hardy, fruits about the fourth year. It is necessary to cut off about one-half of the new wood every year. Not a very productive sort.

7. *Titovka White.*—This is like the former variety, but lighter in color; ripens about the beginning of September. The tree is pyramidal, leaves paler than the Tetofsky, abundant bearer. It is not as high priced in the market as the former.

8. *Vargulek.*—Medium size, skin yellowish; flesh sub-acid, juicy; ripens about the end of September; keeps well all winter. The tree is pyramidal, fruits early and abundant, not very hardy at Moscow.

9. *Koroboy* (Box apple.)—Very small apple with long peduncles; skin leathery; ripens in August. The tree is pyramidal, long branches, fruits well and endures frost. This variety is particularly bought by confectioners to use in making up sugared fruits.

10. *Arcad fumed.*—Very sweet, small, round greenish yellow with red side; ripens in August. The tree very hardy.

11. *Arcad White.*—Very good quality, sweet, juicy, larger than the former. The tree grows round head, is productive and very hardy.

12. *Kolotareff.*—Medium size, greenish yellow, good quality, sub-acid; ripens in winter. Tree of spherical habit, leaf round dark green, skin on the young tree with white spots. At Moscow the tree endures the winter and grows still better in the more southern localities. This apple is highly prized in western Russia as a good market kind; keeps long without deteriorating.

13. *Aport* (Alexander.)—A sort everywhere known. At Moscow it sometimes winter kills.

14.—*Borodovka*, or *Biel Borodoka.*—This variety is very large with pale crimson side and broken stripes, vinous and fine grained. Ripens in September, but does not keep long. The tree is large, pyramidal, long branches, leaf is large, dark green. It fruits through every year. Not hardy at Moscow. Price 3 to 4 rubles per pound. This variety always sells well on account of its size and beauty.

15. *Borovinka* (Borovisky, Charlamorsky, in America known as Duchess of Oldenburg.)—Everywhere a reliable apple for its quality and productiveness, keeps till December, but no longer, for at that time he begins to crack and lose flavor. The tree is growing to the north of Moscow and there its fruits are more juicy than when grown farther south. Market size 1½ to 2 rubles per poud.

16. *Borovinka White.*—It is distinguished from the former only by the fact that there is no blush, and the color of the stripes is paler. This variety is grown in Germany and France under the name of Charlamovsky and Borovisky.

17. *Charlamov True.*—A large apple, light yellow without blush, sub-acid; ripens in the beginning of September. The tree is pyramidal, leaf round, twigs long and thick. Tender at Moscow.

18.—*Grushevka* (pear apple.)—A little light yellow apple, crimson color, of excellent flavor, juicy; ripens about the end of August, and sometimes sooner. It will not keep there, it is only good for local markets. The tree is pyramidal, leaf narrow. An abundant and early bearer; hardy.

19. *Putim Early.*—Good quality, juicy, pale green, without blush, large apple. The tree pyramidal growth; an early, abundant and annual bearer; hardy. Cheap sort for local market uses. It is grown in large quantities in the Cherigov government.

JAROSLAV NIEMETZ,
Real College, Winnitza. Podolie, Russia.

NOTE BY SECRETARY.—The above letter was received after the close of the winter meeting of 1891, but is herewith presented.

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THE WINTER MEETING, 1890.

The Winter Meeting of the Association was held in the City Hall, Hamilton, on Wednesday and Thursday, the 17th and 18th of December, 1890.

The President, Mr. J. A. Morton, of Wingham, called the meeting to order on Wednesday morning at ten o'clock.

The PRESIDENT.—Before the Association enters upon its proceedings I would call the attention of the members to the fact that we have with us this morning some of our friends from across the line. We have great pleasure in welcoming to our meetings the representatives from our sister country, and we hope they will feel themselves at home among us and take part freely in our proceedings.

THE SHIPPING GRIEVANCE.

The Secretary read the following letter from Mr. Race:

GENTLEMEN,—Lest I might not be present at your meeting, I may say with regard to shipping grievance that I communicated with a high legal authority as to the best or proper course to pursue to obtain a remedy. It was suggested in reply that we might better, as a first step, communicate with the express companies, acquaint them with the nature and extent of the grievance, and learn what they had to say and were willing to do in the matter. I acted upon the suggestion with the result that an inspector for the western division of the Canadian Express Co., a Mr. B. S. Murray, of London, called upon me and assured me that everything that could be done on the part of his company would be done to remedy the grievances complained of. "Already his company," he said, "had been advised of the contemplated action of the Ontario Fruit Growers' Association, and had instructed him to exercise every possible vigilance in his division that no further cause for complaint should arise. I may further state that not a single complaint of a broken fruit package or other damage has been brought under my notice or reported to me during the past fruit season." This is a very much more satisfactory state of things than we had to report for the year 1889, and our association has reason to congratulate itself that its action in the matter has not been fruitless; and its thanks are due the Canadian Express Company for their prompt and ready response.

T. H. RACE.

Chairman Com.

DISTRICT FRUIT LIST.

Mr. Thomas Beall (Lindsay) presented a report of the Committee on this subject. This does not appear here because it was afterwards revised by the Committee, and may be found in Appendix II, at end of report.

Mr. BEALL.—In making up the lists for their respective districts, I suppose most persons have pursued the course which I myself have taken, and which, I think, was perhaps the wisest course, namely, to select the varieties recommended by the largest number of farmers in each district, even though they would not, in some cases, be the varieties which they themselves would recommend. In the whole list mentioned there are only some thirty-five varieties which are regarded as suitable for the whole Province.

It is remarkable that the American Golden Russet and the Duchess of Oldenburg receive the largest number of votes. In every case, except one, these two varieties have been selected.

Mr. A. McD. Allan (Toronto).—I think a report of this description requires a great deal of consideration before it should be accepted by the Association. I fancy that a great many people who have sent in lists have omitted to consider many important points, such as, for instance, the commercial value of the varieties recommended. This list is likely to be accepted by the public as receiving the sanction of this Association, and I think that it should be looked into very carefully before we allow it to go out as anything more than a trial list, to elicit for further information. So much depends on soil and cultivation, as also on all the surrounding circumstances, that it is a most difficult thing to specify certain varieties as in all cases the best for certain sections. It is quite certain that the Duchess of Oldenburg is much favored, and if I were selecting a single variety for summer use I would select it; if I were selecting two, I would add the Yellow Transparent. Some very well known varieties are left out of this list altogether. For instance, the Pewaukee is coming into use, but no committee would, I think, recommend it as worthy of cultivation in every season. It is an early winter apple. The Russet, referred to in the report as the American Golden Russet, is not really the Golden Russet at all. The Golden Russet there referred to is the Golden Russet of Western New York, or the English Golden Russet; they are, practically, the same apple; and this is the apple which we have in general cultivation throughout the Province under the name of the American Golden Russet.

Mr. Dempsey.—I fully endorse the remarks made by Mr. Allan. The parties making up the lists, in many cases, simply put down the names of the varieties cultivated by themselves. The King of Tompkins County heads our list just because some people have a few apples from it; yet, as a rule, with us, the tree dies before it has reached its bearing time. Now, my list, which I am willing to stand or fall by, is as follows: The most profitable summer apple we are cultivating is the Duchess of Oldenburg. I would succeed that with the Trenton. Then I would name Hubbardston's Nonsuch, then the Blenheim Orange Pippin, and then the Ontario. For a profitable winter apple I would name the Ben Davis; there is more money in it than in all the rest put together. I have said that before, and every year's experience confirms it.

A Member.—Does it spot with you?

Mr. Dempsey.—Yes, but it has the faculty of throwing its color over the spot so that you do not see it.

Mr. Allan.—There are too many varieties mentioned in the list—too much choice; and it is made up very largely from the opinions of growers whose experience is confined to a very few varieties. I believe that a list of this description, to be of value, should be advisory, and as such should be sent out by the Association. Such a list should be made up upon a thorough examination of the conditions and capabilities of each district. We know that in many cases there are varieties which could be profitably substituted for those now grown, and I think growers should be advised to discard varieties that are not profitable. We should specially have in mind those varieties which will best command the foreign markets, and the point that we are growing apples for profit and not for fun should be kept in view at all times.

Mr. Beall.—Mr. Allan may have forgotten that the intention of the committee and the Association is that this list should be revised from year to year. The Pewaukee is a variety which should certainly be in the list for a great many districts, as should also be the Ontario, which is one of the most profitable apples we can grow. In the meantime, however, I do not see any objection to the Association accepting this report and publishing it, not as adopted, but as standing for further consideration.

The Secretary.—While I agree with Mr. Beall that it is well for us to have a list to work upon, yet this list should certainly be amended considerably before it is printed at all. For instance the Early Harvest is recommended as a summer apple for many districts of Ontario, although very few of us would recommend anyone to plant it for

profit. I would suggest that the directors of the Association should as far as possible name the varieties best suited to their respective districts as amendments to the report.

Mr. W. E. WELLINGTON (Toronto).—There is no doubt that what may be grown successfully by one man may be a comparative failure in the hands of another man ten or twelve miles distant. Yet, in obtaining the list I did, I felt that the representatives of the different districts were pretty well qualified to say what would succeed best in the districts they represented; and the selection sent in by me is virtually my selection formed from varieties which I concluded would succeed most generally in my district. If I were making selections for different localities within that district I would vary the list somewhat; but in making a general list of varieties which would be as a rule successful throughout a district, I think the member representing it has, to a great extent, to use his own judgment.

Mr. ALLAN.—I would name a list which I would advise for Agricultural District No. 10 section, comprising varieties which can be grown in every part of that district season after season, except perhaps a part of Grey: Yellow Transparent and Duchess of Oldenburg; Gravenstein, Pewaukee and Blenheim; Baldwin, Ontario and Golden Russett of Western New York. There is money in these varieties.

Mr. G. C. CASTON (Craighurst).—The County of Grey is peculiar in this respect, that certain varieties which will flourish in the northern part of the county are useless altogether in the southern part, a few miles distant I think each director should have a copy of this list to look over and correct, so far as it applies to his own district, and report again at a future meeting.

Mr. DEMPSEY.—I would move that the following be added to the list for Prince Edward County: Hubbardston's Nonsuch, Ontario, Pewaukee, Ben Davis, Cranberry Pippin and Stark.

Mr. ALLAN.—I concur in that list except as to the Stark. I know it is at present a profitable apple, but the important question is, is it going to continue a profitable apple, with its poor flavor or quality? By sending out apples of that character are we not destroying the public taste of the market for good apples? People would have a very poor opinion of our apples generally if they judged them by the Stark. As a cooking apple it has a fair quality, but I question very much whether anyone would use it as an eating apple.

Mr. DEMPSEY.—Mr. Allan is quite correct. The Stark apple is not one of the best quality, but it fetches the most money. In this respect it resembles the Baldwin, which is not fit to be placed on any gentlemen's table for dessert, but at the same time it is a popular apple.

After some further discussion, it was decided, on motion of Mr. Beadle, to refer the report back to committee, with the request that after consulting with the directors they put it into shape for publication.

HORTICULTURAL INSTITUTES.

The SECRETARY read the following paper on this subject:

In these few lines I wish simply to introduce to the consideration of this Association the advisability of advocating the holding of horticultural institutes in such parts of the country as local fruit growers would particularly desire they should be held.

The idea of holding such institutes is not new; it has been tried with acknowledged success in the state of New York. In our own Association the question has often arisen "Is there not some way in which local fruit growers' associations could be formed, having a vital connection with the provincial organisation?" Frequently letters are sent in to me, as secretary, asking if there is not some provision made for local associations, and of course I have to reply in the negative.

The object of our Association is to collect and disseminate information that shall advance the science and the art of fruit culture in our province. Now we are accomplishing the first part of this end, and that very fully, as will be evident to anyone

examining our publications during the thirty years of our existence. The disseminating of information we have been trying to do, (1), by means of our journal, and, as this goes out to about twenty-five hundred subscribers every month, the information it contains is well distributed, and I think it is acknowledged that the money spent in that way is well spent; (2) by means of our meetings, which are open to the general public, and are usually full of interest. The reports of these meetings are widely distributed, both by our Association and by the Department of Agriculture, and thus, I am sure, the directors of our society may congratulate themselves that the money placed in their hands by the department, is spent to good advantage for the progress and development of one of the most important industries of our country.

But I am of the opinion that still greater good can be accomplished. We have been trying, by holding our meetings in various places, to reach the farmers and fruit growers in each locality in person, and thus develop as great an interest as possible by bringing to them the best growers we have. But the great difficulty is to get local men to prepare the way for us, for there is no local organisation for us to correspond with.

Too often we hold our summer meeting in a locality where we might expect a good local attendance, and we are disappointed to find that no one in that place has interested himself sufficiently in our coming to make it known among his neighbors, and those who hear of it, suppose that we have some selfish end in view, and that, perhaps, there will be found a collection plate, or a charge at the door to get their hard earned money. This is very disappointing, especially when we have gone to the expense of bringing together a dozen or so of our directors, who have all come ready to give out freely what they have learned by long experience and study, about fruit culture. In speaking thus we must always make one notable exception of the city of Hamilton, for in this city our Association and its work is well known and appreciated. It is a convenient point at which to gather together all the leading fruit growers. It was the birthplace of our Association, and all our best meetings have been held here. To me it seems almost a misfortune that we should ever move our winter meeting to any other point, unless by the special request of some city, or powerful local society, which would undertake to make provision for our suitable reception.

Now I believe it is possible to hold our winter meeting regularly at one place, unless changed for some special reason, and to do the outside work of reaching the farmers who want to be instructed in fruit culture, in various parts of our province, by means of special horticultural institutes. I am not prepared to give a fully detailed plan of operation, that should go under the consideration of a committee appointed by this Association, but I would like to see it worked out somewhat this way:

A local horticultural institute might be formed in any locality where twenty-five or more members could be associated together, each paying into their treasury the sum of $1.00. Their officers should be the chairman, secretary and treasurer, who would constitute the executive committee. The treasurer should forward to the secretary-treasurer of the provincial F.G.A. a list of the names forming the local society, together with the sum of 80 cents per member, which would entitle each to all the privileges of our Association, and leave a balance of twenty cents for each member, toward local expenses. Meetings of the local society might be held monthly in the evenings, when one or two papers would be read and discussed, and at least once a year, a public horticultural institute should be held, to which all the public would be invited, and at which one or two fruit specialists would be present and take the leading part in the addresses and discussions, somewhat in the same manner as is now done at farmer's institutes by the professors of the Agricultural College. A list of such men and their subjects could be made out, and published in the *Canadian Horticulturist* and from there each institute could select the men and the subjects which were most desirable to be placed upon their programme, and correspond concerning them with the secretary of the Ontario Association, who would endeavor as far as possible to carry out the wishes of the local institute. These meetings might be held in the month of February, or early in March, at a later date than the time of the principal meetings of the farmer's institutes, so as in no way

to clash with them. It might be desirable in many cases to combine the farmer's and fruit grower's institutes in one in some places, and provisions for this might also be made.

In order to keep the connection between the local and the provincial societies it would be well that provision be made for the attendance of the secretary of the latter, and the director for the agricultural division in which it is proposed to form the institute, at its formation, who would also take an interest in promoting the formation of such institutes in as many places as possible, and that the list of officers should be published in our annual report. Further, it might be desirable to submit to our secretary, copies of papers read at the local institutes, for publication in the annual report, if considered of sufficient value, and also notes of discussions, where of general interest.

All this would surely present a strong incentive for the formation of such societies, and the benefit gained by their connection with us would be clearly defined.

One thing, however, must not be overlooked, and that is the increased expense entailed upon us in carrying out these plans. There would be increased clerical work in the secretary's office, some additional printing of circulars, giving a list of lecturers of horticulture and the subjects on which they would be prepared to speak, and the expenses of the lecturers in attending the institutes. Possibly for this work the department would make the Ontario Fruit Growers' Association a grant, not to exceed a certain sum, say $500 to begin with.

Compared with the farmers' institutes, the number of horticultural institutes would be very few indeed. Probably it would not be necessary to provide for the formation of more than one in each agricultural division, under the charge of the director of our Association for that division, who would be, ex-officio, a member of its executive committee, and form a direct link between it and the Ontario Fruit Growers' Association.

It was moved by the Secretary and seconded by Mr. Beadle, that the subject of the paper be referred to the Legislative Committee.

Mr. ALLAN.—The idea of the paper is a good one, if we could succeed in getting the horticulturists to attend such institutes, but I am afraid that if we approached the Legislature for a grant, we should be told that the objects we have in view could be accomplished by our sending representatives to the farmers' institutes. The general farmers of the country would not, I am afraid, be sufficiently interested to attend these horticultural institutes, while we should be most likely to find them at the farmers' institutes, and by that means have opportunities of bringing our ideas before them.

The SECRETARY.—I do not make this proposal with any intention of interfering with the farmers' institutes. In some parts of the country local fruit growers' associations, which had been formed, have become defunct owing to their having no connection with this Association, and no means of obtaining special speakers. I do not think that the Government would object to making some arrangements with our Association, for defraying the expense of sending lecturers to address these local fruit growers' institutes.

Mr. A. M. SMITH.—I think the Association has already provided by a resolution, which has never been rescinded, that any local horticultural society could become affiliated with us and entitled to receive our reports on payment of eighty cents a year.

Mr. CASTON.—I think such institutes as those proposed would be more valuable as experience meetings than for hearing lecturers, because it is not given to a lecturer to know everything, and the fruits he might recommend for cultivation might not be suitable for the particular district where spoke.

The SECRETARY.—It is nevertheless the fact that these local societies are constantly writing for lecturers to come and speak to them.

The motion, to refer the matter to the Legislative Committee was carried.

OUR FRUIT MARKETS.

Mr. A. H. PETTIT (Grimsby,) read the following paper on this subject:

The question allotted to me at this time, Our Fruit Markets, is one to which the Fruit Growers' Association of Ontario should give their most careful consideration, for it is to this Association the fruit growers of Ontario are now looking to protect that industry which they have done so much to build up. This has been accomplished by encouraging the industry, by the distribution of correct information as regards varieties and their adaptability to the different sections of this Province, and by a clear and honest criticism of varieties of doubtful value for general cultivation. Now that fruit growing in this country is becoming such an important branch of industry, and our fruits almost second to none of the exportable products of the farm, might not our energies be directed towards giving reliable crop prospects; not only of this continent but of the fruit producing nations of the world. In this way we might give the fruit growers of this province, whom we are elected to serve, all the information it is possible to obtain, and that at the earliest moment for their advantage. This, however, may require an increased expenditure on behalf of this Association; but I believe the work would result in increased receipts, and in a more general interest in our work.

I would not like to trespass long on the valuable time of this meeting to suggest a new system of marketing our fruit, for, I believe, in the matter of small fruits, the growers are working out a system that will eventually prove very satisfactory to all concerned; but, in the matter of foreign shipments, a change in our methods is much to be desired. We find, in all the large cheese producing sections of Ontario, certain days appointed as market days, at convenient centers of trade, where buyers and sellers congregate, and, by sample, the deal of hundreds of tons is made. I can see no obstacle in the way of such a course being pursued by the apple growers of Ontario, and their fruit being disposed of in the same manner; subject, of course, to inspection by competent inspectors, appointed by the Government, and, that a barrel of apples, when branded No. 1, shall contain apples of fair size and color, free from scab and worm holes; properly packed in standard size packages; and No. 2 to contain as may be defined, but a certain fixed standard of excellence. By thus establishing fruit markets in several of the large fruit producing sections of Ontario we may bring the buyer and seller face to face, and thus avoid the difficulties which many have found to their cost when apple grower and apple buyer are several thousand miles apart. I have not been a shipper this year, but I have seen a great many catalogues of sales, and, like the woman's letter, not complete without a postscript, the catalogue would not be complete without the words "slack," "wet" or "wasty," and, of course, prices to correspond. If the system of handling fruit in the Old Country markets is satisfactory to the trade there, I think I am safe in saying it is not to the fruit shippers of this country, and the sooner we establish a better system of disposing of the apple crop of this country the better for all concerned. A change, however, must emanate from the fruit growers themselves, and, this being a representative body, we might fairly discuss some method whereby we might improve on the present system. We have, in the ranks of this Association, men of experience, of judgment, and possessed of an earnest desire to promote the welfare of the fruit growers of Ontario.

I can conceive of no more equitable system than by bringing, if possible, the buyer and seller together at central points; the grower to return and pack his apples according to rule, in order to insure the inspector's brand of No. 1 or No. 2, as the case may be; and the buyer to dispose of his purchase in whatever market he may deem best for his own interest. The inspector's brand will then become an important factor in raising the standard of Canadian apples, and thereby increase their marketable value in any market to which they may chance to be sent.

We need not always discuss the question, how the big apples get on top and the little apples crawl into the middle of the barrel. I believe we have thousands of growers who do their packing as honestly and squarely as they measure their wheat, or any other product. The weak point is in not branding them according to quality. In some cases, why not ship cider apples, if there is a demand for them; but, by all means, let them be

so branded. Let us establish a system of definite standards of excellence and proper inspection. This, I believe, would throw around the grower and shipper a wall of defence, a safeguard to his good name as an intelligent grower, packer and shipper, and, at the same time, place the dealer in a position to order, direct from the grower, 100 or 1,000 barrels of No. 1 or No. 2, inspected stock, and of varieties as may be agreed upon. Let one of the standards necessary to insure the inspector's brand be, that the name of the fruit and its quality, as estimated by the packer, be plainly stamped upon the package containing it. This system, I believe, would inspire confidence in the mind of the buyer, and a spirit of renewed ambition in the grower, packer and shipper, and raise the standard of Canadian apples in the markets of the world. I would suggest, Mr. President, that an additional committee be appointed by this Association—a committee on legislation, to whom subjects requiring legislation might be referred, and the influence of this Association used to promote its enactment, if thought desirable. We stand here as the representative body of the fruit growers of this great fruit producing province of Ontario. Let us strive to clear away every obstacle, visionary or otherwise, that may hinder the development of this industry, and promote facilities for transportation and marketing to their fullest extent. Let us remember we are citizens of a great Dominion, fruit growers of a highly favored province, whose soil and climate render fruit growing a very remunerative branch of business, if intelligently pursued, and point out with unerring certainty that this industry will, in the near future, become one of great magnitude, requiring, on the part of this Association, the same energy to increase the facilities for the disposal of our fruit as that which has been displayed in promoting its production. Were we to slacken our efforts in that direction now, we would be like the captain who, when fairly under sail, forsook the ship and let her drift upon the rocks. Those rocks are visible now—bumps have already been felt—not rocks of granite, but rocks of an unsettled, undefined, go as you please, system of handling fruit, with no landmarks to guide the uninitiated. Let the inspector's brand be one worthy of Canadian fruit, a passport to any market, so that the producer may receive the best value for his production, and his skill in selection and packing.

I believe if we had in operation a system for the inspection and branding of all our fruits intended for shipment for foreign markets, it would raise the standard of our fruits in those markets to which we must look for our future profits. At present, a man who buys a car load of grain, does not require to see it in order to know its quality. He simply orders a car load of number one, or number two, inspected wheat, as the case may be. Why should not the buyer of fruits be enabled to do the same thing? A great deal of the fruit sent from Canada to European markets does not reach them in as good condition as the buyers expected. Much of the fault of this I believe should be laid to the packer, but the grower usually gets the discredit. I have not worked out the details of this proposal, but at present I can think of no better means of carrying it out than to have inspectors of fruit appointed by the Government to brand all fruits sent abroad.

Mr. G. C. Caston (Craighurst).—This is an excellent idea, and one which has often occurred to myself. But I see a practical difficulty in the way: that is, how is the inspection to be done? If the inspector opened a barrel of apples to examine it, and then headed it up again, there would be danger of injuring the fruit, whereas an inspector of flour needs only to make a small hole in the barrel to ascertain the quality of the flour. In the case of fruit, the packer might be allowed to brand it, and a penalty might be imposed if the fruit did not turn out as represented. I would like to ask Mr. Pettit if he has though of any means of getting over the practical dfficulty of inspecting apples.

Mr. A. H. Pettit.—I think an inspector at the port of shipment could easily make the inspection. For instance, if there was a car load of apples, he could select three or four barrels, and have a large sheet into which they could be emptied for inspection, and then they could be at once returned to the barrels and headed up again. It would be only a few minutes work. I believe there are many growers who do not thoroughly understand the system of packing for the old country markets, and a system of inspection would lead them to pay more attention to that particular, because any fruit that was not

properly packed would not receive the brand. I do not favor any system of penalties, which I think would not be effective and might possibly become a hardship.

Mr. CASTON.—One of the most important lessons which the fruit growers of Canada need to learn is the proper packing of fruit. Speaking locally, it is difficult for me to find a sample of apples fit to ship without repacking. In many cases, you will find farmers picking up windfalls and scabby apples, and mixing them with good fruit, and packing all together. Farmers who are growing a little fruit for sale must learn to cull it properly before they can expect to make a profit out of it.

Mr. A. McD. ALLAN.—The subject raised in this paper is a most important one, and I am free to acknowledge that I believe this province of Ontario, as a fruit growing community, is very far behind the times. We have not begun to appreciate the difficulties we have to meet in developing our fruit industry. I believe this country has been damaged tremendously in foreign markets, simply from the fact that apples have been sent there without having been properly selected, or properly packed. The depreciation in prices has been due more to this fact then to any other. Packing apples is a science, and this province would reap the benefit in dollars and cents if all the fruit sent from it to foreign markets were thoroughly inspected and any, which did not reach the standard fit for the British market, condemned. We cannot hope to make any advance in our fruit industry, unless this matter is attended to in some way. Years ago I brought up this subject, and my idea then was that the fruit should be inspected at the port of shipment. If some law were enacted by which that could be done, I consider that it would be the most important step that could be taken in the general interest of the country as well as in those of the fruit growers.

On motion of Mr. M. Pettit (Winona), the subject of the paper was referred to a special committee consisting of Messrs A. McD. Allan, E. D. Smith and A. H. Pettit.

THE BEST REMEDY FOR THE CURCULIO.

The next question discussed was, which is the best remedy for the curculio, spraying or jarring of the trees?

The SECRETARY.—Professor A. J. Cook of Michigan thinks spraying is an utter failure and advocates the jarring process. Professor Green of Ohio, on the other hand, thinks spraying is a perfect success. If any present have had any new experience during the past season, it might be helpful.

Mr. F. G. H. PATTISON (Grimsby).—As one who has had considerable experience in experimenting with Paris green, especially on apples and plums, I would say it has been perfectly successful, I have tried it in every possible way. In a row of trees, I have sprayed some and left others unsprayed; I have sprayed entire rows and left other rows unsprayed; I have sprayed some orchards and left others unsprayed; and the result has been always the same, fifty per cent in favor of the spraying. The labor of jarring trees is too great, even for those who do not grow more than a hundred trees. This year I sprayed one orchard of plums and left another orchard, a small one, unsprayed owing to the difficulty of getting at it. The orchard sprayed bore a good crop which was sold at excellent prices, while the one not sprayed had no crop at all. Last year, a young orchard four years old set very abundantly, and I thought I would leave it without spraying to see if the curculio would thin it out. That orchard, consisting of about two hundred trees, was so laden with fruit, that I had to prop up many of the trees. The curculio came and swept every one, so that I did not get a basket of sound fruit from it, while the trees which had been sprayed yielded a full crop. Again, this year our apple trees set so poorly that I thought it would not pay to go to the trouble of spraying them. However, we sprayed a few, and when we came to picking time we found that those few had some apples, while the trees that were unsprayed had no fruit. This year I sprayed my pear trees twice, and the percentage of gnarly fruit was very small.

The PRESIDENT.—I think it is not disputed that the spraying is successful when used against the codling moth; but this question related to the curculio.

Mr. S. D. WILLARD (Geneva, N.Y.)—Speaking from my own experience, I do not believe that spraying with arsenites is of equal force, or value, in the case of all varieties of fruit. I think I can hardly afford to raise apples, or pears, without spraying with some arsenites against both the codling moth and the curculio. I believe the Bartlett pear is very much protected from the insects that prey upon it by the use of arsenites. Two years ago I shipped some Bartlett pears to Philadelphia, which were kept there in a cool house and sold in the month of November. Not one of them showed any sign of the curculio, or the codling moth, whereas, prior to the time we began that protective process, fully one third of our Bartletts and Duchesses were unfit to ship, or to do anything with, and it became a question in my mind whether I would not abandon the culture; but, since using Paris green in this way, I have found it to be a wonderful protection, and I would not be without it. On the other hand, my experience of the use of arsenites on stone fruits has been such as to determine me never again to repeat it, and I believe that has been the experience of everyone else who resides in my section, I was induced to use them by the advice of a gentleman who now denounces the system, Professor Cook; if he had not suggested them as an effective and perfectly safe remedy, I do not think I would have undertaken the experiment, which has cost me a couple of thousand dollars. Plum trees are so delicate and sensitive that these arsenites will denude them of all their foliage, and the end may be the loss of a good many trees. I used London purple on a large plum orchard and nearly killed it, and at a time when it was yielding a crop of fruit which would in all human probability have brought me $1,500 or $1,600. At the same time we had another orchard which we found it impossible to reach, and which we were compelled to protect by our former system of jarring the trees. That orchard was not injured at all. Now, as to the expense of jarring, it is an inexpensive process compared with the returns you get from the trees. It costs only twenty-five cents to jar a tree, and you have no idea of the rapidity with which a gang of men will go through an orchard. Sometimes we have completed the work in two weeks, and sometimes in three week, depending on the weather. Of the two arsenites, I would prefer Paris green to London purple, but too much care cannot be used with either of them, especially on stone fruits.

The PRESIDENT.—Did you use Paris green in your experiments?

Mr. WILLARD.—Not on the plums. There is greater variation in London purple than in Paris green. But it is quite certain that there is great danger to the foliage of plum trees from the use of these arsenites.

Mr. PATTISON.—One or two points I omitted to mention when I spoke before. I have sprayed plums for five years, entirely with Paris green; I never tried London purple. In spraying plums, you should never apply the Paris green as strong as in the case of apples. Another point that must be attended to is this: each solution should be made weaker than the previous one, for no matter how you may stir the barrel, the mixture is getting stronger all the time. It must be remembered too, that rain does not wash off the Paris green, or only to a slight degree; and I believe many people have injured their plum trees by unnecessarily spraying them after a shower of rain. At most I think two sprayings would be enough. I have sprayed plums for five years, and have never lost a tree. I recommend it for plums, pears, apples and also cherries. The trouble is that most people who spray use too strong a solution, especially at the beginning. The quantities commonly recommended are too strong. I use two ounces of Paris green to a forty gallon barrel for plums. For apples I use about three ounces. These are quite strong enough; in fact, I am not sure that they might not, with advantage, be reduced.

The hour for adjournment having arrived, the discussion was postponed.

On motion of the Secretary, the following committees were appointed to continue the preparation of the Fruit Catalogue of Ontario:

Pears—Messrs. Beadle, Dempsey, and Holton.

Grapes—Messrs. G. Cline, M. Pettit, and T. Carpenter.

At twelve thirty the Association adjourned till two o'clock.

THE BEST REMEDY FOR THE CURCULIO.

On re-assembling, the Association resumed the discussion of this subject,

Mr. GEORGE CLINE (Winona).—I would like to ask Mr. Willard what amount of Paris green he used—whether he followed Professor Cook's formula of one pound to one hundred gallons of water.

Mr. WILLARD.—I did in the case of London purple. In the case of Paris green I was told to use four ounces to forty gallons of water, but I feared that that was too strong, and used only two ounces to forty gallons.

Mr. CLINE.—And you found that injured the leaves?

Mr. WILLARD.—No. In speaking of injury to the foliage I referred to London purple.

Mr. CLINE.—I have been using Paris green for seven years past, and I have never had any trouble from it at all. I think it has been beneficial. I would not try to grow plums or pears without it. I sprayed as often as six times on plums during the season. In using the solution from the bottom of the barrel, which is pretty thick, I found it to injure the foliage a little, but it always came out all right again the following season.

The PRESIDENT.—What proportion do you use?

Mr. CLINE.—Three ounces to forty gallons. At first, under the direction of Mr. Woodward of Lockport I used four ounces. I have a Lockport pump and an Oakville pump. They are so much alike that I have no particular preference for either, with this exception, that if anything gets broken, it is easier to get it repaired at Oakville than at Lockport. The Oakville pump is made by William Robertson at that place: it cost eight or ten dollars, including the nozzle, the hose, and a pipe to go into the barrel. My method of using the pump is to put the barrel in a democrat wagon behind the seat, drive the wagon between the rows, and stand on the seat, with my back to the horses, and in that way spray two rows at once.

The SECRETARY.—Do you ever use a pole?

Mr. CLINE.—Never. In the case of high trees we throw the solution to the top of the tree and let it spray down.

Mr. BEALL.—What nozzle do you use?

Mr. CLINE.—The boss nozzle. I would not care to undertake to jar an orchard of plum trees. I can spray an orchard of four hundred trees in an hour.

Mr. SMITH (Winona).—Have you experimented by spraying some trees and leaving others unsprayed.

M. CLINE.—Not near by; but where I have not sprayed I have failed to get a plum.

Mr. M. PETTIT (Winona).—My experience is that in the same orchard I can see no difference.

Mr. CLINE.—Perhaps the spraying of some trees drove the curculio away from the others, or they were not very thick.

A MEMBER.—I would like to ask Mr. Cline how often he finds it necessary to spray during the season.

Mr. CLINE.—Twice or three times. Mr. Pattison says the Paris green does not wash off. I fancy a good deal washes off, and I would rather put a little more on than lose a crop. I begin to spray the plum trees as soon as the blossom begins to drop off. The curculio may not begin working until the plum is the size of your thumb nail, and then,

in two days, they may destroy the whole crop. I spray pear trees just as soon as the blossom is off. Before I treated the pears, they were very knotty, but since I have taken to spraying, they have been perfectly smooth and I have had no trouble.

Mr. WILLARD.—What varieties of plums did you spray?

Mr. CLINE.—I have about thirty-five varieties that are bearing, including the Bradshaw, Niagara, Lombard, Golden Drop, Smith's Early, Quackenbos, Yellow Egg, Pond's Seedling, Golden Gage, Imperial Gage, Washington, General Hand, Jefferson, German Prune, Moyer, and others.

Mr. BEALL.—If you were going to set out another orchard, would you plant as many varieties?

Mr. CLINE.—No; if I did not want them for any other purpose than marketing, I would not plant more than ten varieties.

Mr. E. D. SMITH (Winona).—I have had some injurious effects from Paris green, but only when I did not use the right proportions. The danger is in using the strong solution at the bottom of the barrel. I think three ounces of Paris green to forty-five gallon of water is sufficient for pears and plums; but there is considerable variation in the strength of Paris green. It would be a good thing if this Association could secure a uniform strength in some way.

Mr. M. PETTIT (Winona).—My experience with plums has been pretty much confined to Lombards. There is one portion of the orchard to which we were unable to drive a wagon, so that it has not been sprayed for the last five years; yet it yields as good crops as the other portion which has been sprayed. The cultivation has been pretty clean, and I am of the opinion that, where that is the case, the curculio will not do much damage. I have tested spraying against the codling moth, and I never could see a particle of difference between those trees which were sprayed and those which were not.

The PRESIDENT.—Perhaps I can explain the apparent contradictions in the use of these arsenites. Some years ago my attention was directed to their use, and I took occasion to ascertain which of the two mentioned contained the greatest amount of soluble arsenic, which I considered would be most detrimental. A fairly good sample of Paris green contains little or none, but London purple contains a considerable proportion. Experiments were instituted a short time ago at Cornell University, under the direction of Professor Bailey, the results of which showed that the use of London purple upon thin leafed plants was attended with a great deal of danger, while the use of the same proportion of Paris green was attended with comparatively little danger; that London purple should not be recommended where Paris green could be obtained; and that the use of Paris green in moderate quantities would be effective in preventing the attacks of the curculio, and would not injure the foliage of the plum. That is the result of the experiments made at Cornell University, and I simply give it to show you that even on this point good authorities will differ.

Mr. PATTISON.—In preparing the solution, do not fill the barrel with water and then put the Paris green in. It will mix much better if you first stir it up with half a pail full of water, and then put it into the barrel.

Mr. P. C. DEMPSEY.—I have had a good deal of experience in spraying with Paris green. I do not grow many plums, but I have found that those trees, which were not sprayed, did not yield any fruit, whereas, those which were sprayed yielded a fair crop. For apples and pears we used a quarter of a pound of Paris green to seventy gallons of water, but for plums we only used about half that quantity. I have found that when the mixture is forced on the under side of the leaves it destroys them, but where it is dropped on the top the foliage does not suffer.

WOOD ASHES FOR ORCHARDS.

QUESTION.—Where can wood ashes be obtained, and what is their probable value What is the best mode of applying them to orchards?

Mr. E. D. SMITH.—I have used a good many ashes with beneficial results, but what is the best method of applying them I am not prepared to say. I always scatter them

over the surface and about the roots of plants. I think wood ashes, especially for grapes, are very beneficial, and the cheapest fertiliser we can buy. There is an old gentleman in our neighborhood who collects all we want and delivers them at the farm at ten cents a bushel.

A MEMBER.—How many bushels to the acre do you apply?

Mr. E. D. SMITH.—About a peck to every ten feet square.

OYSTER SHELL BARK LOUSE.

QUESTION.—Is potash considered a good remedy for oyster shell bark louse, and what would be the proper proportions of potash and water? Would it injure rubber hose?

Mr. G. C. CASTON.—Weak lye is the best remedy I know for oyster shell bark louse. The best lye is that made from wood ashes. I once used a solution of borax and water for young trees, but I have found the lye to be the best, if you do not use it too strong. I never used it with hose, but with a broom. The early part of the summer, some time in the month of June, is, I think, the best time for applying it.

Mr. PATTISON.—I have found a solution of washing soda and soft soap an excellent remedy.

ADDRESS BY HON. JOHN DRYDEN.

The PRESIDENT.—We have with us this afternoon the Hon. Mr. Dryden, the Minister of Agriculture for the Province of Ontario, and I think we shall all be glad to hear from him at this stage of our proceedings.

Hon. Mr. DRYDEN.—Mr. President and gentlemen, I am glad to meet you this afternoon as a brother farmer, and my pleasure would be all the greater if I could spend a longer time with you than I shall be able to do, in listening to the discussions on the various topics to be brought before you. I recognise that here I am among men, who not merely have a knowledge of husbandry in general, but who, to a greater or less extent, are experts in a special branch of it. The only regret one feels, in attending a meeting like this, is that the agriculturists of the country are not here in greater numbers to profit by the knowledge imparted by your papers and discussions. This, however, will be partially remedied by the arrangements you have made for publishing and distributing your proceedings among our people, and it is a course of which I highly approve. Our people need to be educated in those directions in which you are able to impart the necessary instruction. In agricultural matters we have not all the same tastes. One man naturally inclines to and delights in the culture of flowers and fruits; another man is fond of domestic animals, likes to become acquainted with them, and so engages in the raising of stock. Our circumstances also differ, and he is a wise man and likely to be successful, who is able to adapt himself to the circumstances in which he finds himself placed; yet I hold that no man will attain the highest success as an agriculturist who is not enabled to follow his own natural tastes. Take a man who is ardently interested in fruit culture and try to make a stock raiser out of him, and he may prove a complete failure, whereas he would in all probability have been highly successful in the other branch. This is one of the reasons why so many men fail in agriculture. I never object to a young man leaving the farm and going to the city if he has no taste for farming; and it is perhaps a great advantage to the cities that they are replenished by young men from the farm. It is when people are thus permitted to follow their natural inclinations in the selection of their pursuits that they are most likely to attain the highest success. About ten years ago I had the honor to serve on the Ontario Agricultural Commission. The results of the labors of that commission have been published, and have become standard literature in almost every farmer's library in this country. Until the enquiries made by that commission revealed the true condition of affairs, I

had no conception of the actual capabilities of this province in the way of fruit culture. I then learned, for the first time, that large sections of country, in which I and doubtless many others believed such things to be impossible, were admirably adapted to fruit growing. During the ten years which have elapsed since that time there has been great development of this industry, largely due, I believe, to the efforts of your Association ; and we cannot hope to make much substantial progress in this or any other department of our work as agriculturists without associating ourselves together in this way. By associated effort we can do much which we could never do working alone as individuals. Therefore I hail with delight the increasing tendency in these days among the farming class, whether they devote themselves to one branch or another, to unite themselves together for the promotion of their mutual interests. I think it is a good omen which augurs well for the success of agriculture in this country. By combining yourselves together in your Association, there are many things which you can do in this co-operative way. As a farmer I hate the word "combine," but I like the word "co-operation," and by such co-operation you enable yourselves and all whom you influence to improve their productions, to devise better methods and to seek out better markets. I maintain that a man who puts a poor article on the market, and who thinks he is doing a smart thing, deceives no one more than himself. There are some men who imagine that that is a clever thing to do. I say that such men do a grievous injury not only to the purchaser, but to every individual engaged in producing similar commodities, and to the country at large. The extent and profitableness of our markets depend very largely upon our putting forward the very best article we can produce You cannot hope to establish a very extensive market in the old country, or even in this country, if you are content to put forward an inferior article. If you place upon the market a first-rate quality of mutton or beef, it is evident that the people who consume it will want more of it, and in that way you will increase the demand. Take the case of butter as an illustration. If you sell to your townsmen an inferior quality of butter, what is the result? The family that gets it will sniff at it, but will not use much of it, and so it will last a long time ; whereas if you send to them butter of the first quality, it will disappear so rapidly as perhaps to alarm the head of the family. You thus create an active demand for butter. The same rule applies to fruit culture. Now, how can you produce the very best article? By meeting together as you are doing, and suggesting and discussing the best methods. No knowledge is confined exclusively to one man, but by contributing all our individual knowledge to the common fund and comparing notes, we take the course by which the best results are achieved. This Association has done a valuable work in bringing forward and introducing many new varieties of fruit. I was formerly a member of the Association, and I remember that I had some new varieties, some of which have become common property in these later years ; and it is marvellous how much has been done in this respect by your association in the past, which I trust may be only an indication of its usefulness in the same direction in the future. I am glad to know that some of the members of your Association intend visiting the different farmers' institutes at their meetings in the month of January, and I am sure that many of our farmers will listen with great pleasure and profit to the instruction which those visitors will be able to give them. I have a strong desire to encourage the farmers everywhere to attend those institutes and participate in them. I am no believer in the theory that governments can enact legislation to make everybody rich, but governments can do a good deal in the way of placing obstacles in our way or removing them. They can also do a great deal in the way of disseminating information for the education of the people, and I propose that my Department shall furnish to the members of those institutes such information as we are able to obtain, by means of the different bulletins and reports published by the department. I am afraid that some of the literature published in the past has failed to reach many of the people most interested, or it has reached them after such a lapse of time as to have lost a great deal of its interest and value, but I am glad to hope that we shall be able gradually to improve matters in these respects, and that we shall be aided in doing so by this Association. Now, ours is but a young country. Our fathers went into the wilderness, and cut down the original forests, and converted it into fertile fields. Perhaps there are some men now living who saw the greater part of this

province in its original state of nature. We have accomplished wonders in this short time, but there are great possibilities yet in store for us in connection with agricultural pursuits. We have reason to be proud of our country for its agricultural resources. We can grow the best samples of grain, and produce the finest specimens of horses and cattle on this continent; we can produce the best apples to be found in the world; our small fruits grow superabundantly in every part of the country. Our men engaged in these pursuits are equal to, if not beyond, the average of energy and enterprise. But what they need is further information and further education, and I submit that that government does not do its duty which does not seek to provide and scatter such information among the people. Therefore you may count upon me, as the head of the Department of Agriculture, being always ready to do as much as I am able in this respect. We have other vast resources in this country. Our timber resources are so enormous as to be almost beyond conception. Our mineral resources are just beginning to be understood, and the attention of the whole world is coming to be directed towards them. While others are engaged in developing those resources, it is your duty and mine to do what we can to promote its agricultural interests. If we do that, I venture to say that our province will continue to occupy in the future, as it has always done in the past, a first place among the states and provinces of this continent. I have one more suggestion to make, and in making it I trust you will not consider me to be intruding upon your own sphere. We are shortly to have a World's Fair in Chicago. I am especially anxious that this province should be properly represented there by displays of all our varied products. To this Association we must look for a proper representation of our fruit products. If we are able to produce the best apples in the world, do not let us be afraid to let the world know it. Sometimes individuals who are unable to provide exhibits themselves, are indisposed to help others to provide them, but the fact that you may not have the fruit required yourself is no reason why you should not help your neighbor to send a proper representation. I think we should sink our personal glory in the glory of the province as a whole, and we can do this most successfully by uniting our efforts. Let all classes of agriculturists stand together. Because I am interested in one branch and you in another, that is no reason why we should disparage the efforts of each other. Each one is directy or indirectly interested in the progress and prosperity of all, and therefore we should help each other in every possible way. I am always proud to be known as a native of the Province of Ontario, which is, so to speak, the oasis of this grand Dominion; and, if its people continue to develop its resources in the future with the same energy and enterprise which they have displayed in the past, I have no fear of its ever falling behind in the race. I thank you, Mr. President. (Applause.)

THE COMMERCIAL FRUIT GROWER'S OUTLOOK.

Mr. D. W. Beadle (St. Catharines), spoke on this subject as follows: It occurred to me that it might not be unprofitable to deal with a question which is often asked of me, as I have no doubt it is of you, namely, are we going to have a sufficient market in the future for all the fruits this country is likely to produce? Sometimes we have a full crop of fruit, and there appears to be a glut in the market, and then our people, because they do not obtain the prices they expected, become somewhat discouraged. Looking forward, they say to themselves, "These nurserymen are turning out immense quantities of trees, thousands upon thousands, which are being planted somewhere, and if they produce fruit, as probably a large proportion of them will, what is the outlook for us by-and-by?" Now, I propose to submit to you a few thoughts on this question by way of solution. In the first place, a great many of these trees sold by the nurserymen never affect the fruit market one cent. Many a man sees that his neighbor has succeeded in raising a fine crop of fruit of some particular variety, aad thinks he can do the same, so he buys a lot of trees and plants them out, but he never gets any fruit from them, they come to nothing. Last summer I was riding through that portion of the Niagara

district which lies on the borders of the Niagara river and lake Ontario, which is supposed to be, and doubtless is, the finest peach belt in the province. But I saw there many thousands of peach trees which had been planted in the last year or two, but which I know will never yield a crop. Why? Just for the reason that the people who planted them did not avail themselves of the knowledge they might have had, because if they had made a little enquiry, they would have learned that the soil was wholly unsuited to the growth of peach trees. It was flat, low, wet and cold, and the money and patience spent upon it would be wholly lost, and the crop which those gentlemen would reap from it would be a bitter crop of disappointment. I mention this as an illustration. Not only peach trees, but apple trees, pear trees and plum trees are planted by men who have neither the judgment, the skill nor the taste needed for success, and thousands of fruit trees of all kinds planted by them, will never produce a crop for the market. That is one of the negative sides. Then, many men turn to planting fruit trees as a speculation, because they hear that money is made in growing fruit. I submit that anyone who wishes to succeed as a fruit grower must give to the work his head, his hand and his heart; as Reynolds said of the rose grower, to be a successful rose grower he must have roses in his heart, so I say the fruit grower, to be successful, must have fruit in his heart. To quote words applied to another subject, a man who hopeth all things, endureth all things, a man who can be patient and wait, a man who will give his time and study to every branch of this business, not only to the growing of his trees and the production of fruit, but to the selection and manuring of his soil, a man who will devote to it his whole heart and soul, that man is going to succeed; but no man who fails to bring such a spirit to his work is going to hurt your market. Now, I wish to turn to the positive side for a few moments. The demand for fruit in this country has increased enormously within my knowledge and the knowledge of all of you, and it is upon this principle that the increase has taken place: you have put fruit on the market, handsome fruit of good quality, and the very fact of your putting it there has created the demand, and this is certainly going to continue. You have not yet fully developed the fruit eating capacity of this country. Here is a little item that proves my position. In 1879 there was imported into this country for consumption dried fruits to the value of $2,830, and green fruits to the value of $8,221, making a total of $11,051. In 1889 the imports of dried fruits increased to $7,487, and of green fruits to $623,080, making a total increase of $619,519 in those ten years. In other words, during the last decade the increase of the importation of fruit into Canada for home consumption has been fifty-seven fold, and we may reasonably expect that this movement will continue in the years to come. I should state that these figures include oranges, lemons and other tropical fruits; yet they serve to show the growing fruit tastes of our people. I have just one other point to make, and it is this. I find that during the last few years the population of our cities has been increasing a great deal more rapidly than our country population. Now, an increase of the population of our towns and cities means an increase of consumers, while an increase of the rural population, we may say, is an increase of producers. If that be true, if our consumers are increasing many times faster than the producers, is not our outlook as fruit growers good? Are not we going to have a good market here at home? I think so. I think the prospect is such that we need not be discouraged. I do not know what the increase of the urban and rural population of the whole Dominion is, but in the United States I find that the urban population is increasing nearly twice as fast as the rural, so that, supposing our urban population increased only twice as fast, instead of as fast as the increase of Ontario would indicate, we should have even then an increase of consumers that ought to be highly satisfactory to us as producers. I have said nothing about our export trade, but if our producers are careful to send away nothing but first-class fruit, put up in first-class style, with first-class honesty, we need have no fear of not increasing our export trade, whatever may have been the deficiencies in the past. The trouble is that we do not know how much of our Ontario fruit is exported. It goes down to Montreal or Quebec, and is there credited to the Quebec province. But the export fruit trade of the Dominion in 1879, amounted to $157,618, whereas in 1889, it amounted to $1,617,818, or an increase of tenfold in the decade. Gentlemen, I believe the outlook of fruit growers in this country in not

bad. We need not be discouraged. What we want to do, is to educate ourselves to the adoption of the best kinds of fruit and the best methods of producing and shipping it, to search the best markets, and to do all we can to meet and develop the tastes of those markets.

ADDRESS BY MR. NICHOLAS AWREY, M. P. P.

Mr. NICHOLAS AWREY, M. P P., the President of the Central Ontario Farmer's Institute, being present, was invited to address the Association. He said: Mr. President and gentleman, I came here to-day more with the desire to listen to your discussions and to gain information on questions with which you are much more familiar than I am, than with the expectation of giving you any instruction. At the hotel this morning, talking to a gentleman there, and seeing a large number of strangers about, I asked him, "Are these fruit growers?" He said, "Yes, they are members of the Fruit Growers' Association." I remarked, "They are a remarkably intelligent looking lot of men," at which he swelled out to suitable proportions in acknowledging the compliment, for it happened that without knowing it I was talking to one of them. "You know," he said, "As fruit growers we always put the best side out." I suppose he referred to putting the best apples or peaches on the top. (Laughter). But it is not a bad motto for fruit growers, if they will interpret it as meaning that they should produce only the very best article, and send to the market only the very best article. There can be no success in life or in any kind of business unless men strive for superiority. Fruit growers as well as other farmers, in their desire to make money, sometimes make the mistake of bringing to the market an article of inferior quality because it comes early. I think this is especially the case with grapes. There are certain grapes of rather poor flavor which are sent into the market early, and people fill up their jars with them before those of better quality arrive. But this is not cultivating the best tastes of the people. You can reach the human family as quickly by way of their palate as any other way, and if you want to increase your market you must send to it such fruit as will create in the people a liking for it. In addition to what Mr. Beadle has said, I would point out as a strong reason why the fruit growers of this province need not be discouraged, that in the next ten or fifteen or twenty years there will be a large fruit market in the North-West. I think the climate there is such, that fruit cannot be produced there with much success, so that the North-West will furnish an almost unlimited market for all kinds of fruit. Another point that is worthy of our attention is that of putting up our fruit in such a way as to make it neat and pleasing to the eye. For instance, I noticed that the fruit growers in this part of the country put up considerable of their fruit in neat looking baskets, covered with nice rosy-tinted gauze, which has fooled me often—(laughter)—for on removing the gauze I, found that the color was not all in the fruit. (Laughter). There is a great deal, however, in putting up our fruit in a tasteful manner. For instance, apples sent to the Old Country will not improve the market there if they do not reach it in good condition. It is not sufficient that we can sell what we send: we must only sell the best. There is only one reason why Canada to-day is selling from eight to ten million dollars worth of cheese in the Old Country; it is because we manufacture the best cheese in the world. The trade marks of one or two exporters on the boxes is a sufficient indication of the character of the cheese, and when people see them they buy it without making any further enquiry. If our butter is not as good as it might be, it is just because the dealers buy every kind from the farmers, and put altogether, good, bad and indifferent, into the firkin and send it to the Old Country. The result is, that the people in the Old Country only want to know that it is Canadian butter in order to avoid it. Now, you need to send only good fruit to the Old Country. Do not, for the sake of a few dollars of immediate profit, send a single barrel of inferior apples there, because it will injure the market tenfold in the future. The great object is to make the market permanent. Though a farmer, I cannot claim to be a fruit grower, for I think I buy more fruit than I produce; but yours is a very important branch of agricultural industry, and I think we should induce the farmers of the province to at least have enough fruit for their own

use. Our friend Mr. Beadle never made a truer remark than when he said that a man to be a successful fruit grower must like his calling. No man has been successful as an agriculturist, a lawyer, a physician or any other position in life unless he had a sincere admiration for his calling. I am glad as the President of the Central Farmers' Institute to meet this Association, which we look upon as one with ourselves. It has been the aim and endeavor of that institute to secure the valuable assistance of the Fruit Growers' Association, and I believe Professor Mills and myself have arranged to obtain the services of delegates from this Association to attend the different Farmers' Institutes of the province, for the discussion of questions connected with your branch of agriculture I wish this Association and its members individually the greatest possible success. I hope that when the time comes for the holding of the World's Exhibition at Chicago, the Province of Ontario will carry off the prizes for producing the best fruit on the American continent. It is your privilege to do so if you only exhibit the energy necessary to send there an exhibit worthy of the province. (Applause).

FRUIT GROWING IN NEW YORK STATE.

Mr. S. D. Willard, Geneva, N. Y., read a paper on "Fruit Growing of 1889 and 1890 in western New York," as follows :

In response to an invitation from your Secretary to say a few words at this gathering, it occurred to me that the observation and experience of 1889 and 1890 in fruit growing, with some reference to varieties old and new that seem particularly promising to the orchardist, might be quite appropriate and of interest to all. To the fruit grower, the past two seasons have been quite phenomenal and brought with them experiences heretofore unknown.

Without doubt the excess of rainfall, which has prevailed since the fall of 1888, coupled with two open winters which caused the swelling of fruit buds at a season when they should have remained dormant, have been important factors in the results that have followed ; but how will you account for the failure of the apple crop in 1890, which was preceded by a fine bloom and a good setting of fruit, and which hung well to the trees until nearly as large as walnuts? This is a question worthy of consideration by all interested in apple growing. One who has had a valuable experience and long observation tells us he is satisfied it was the result of a fungus developed by the falling of the spores upon the fruit and foliage, in an atmosphere moist, and so free from wind that it adhered to fruit and foliage alike, resulting in the ill effects that followed, namely : The most total failure to the apple crop within the recollection of any one living in western New York. The crop in 1889 was quite moderate, and, as a rule, inferior in quality. This was true in a greater or less degree with most other fruits, including the pear, peach, plum, apricot, cherry and many of the small fruits ; the exceptions resulting from difference in location, hardiness in varieties and causes unknown. The result in the end may be a good lesson to the fruit grower, teaching him that success in his line will be due, in a measure at least, to a careful regard for hardiness not only in wood but in the fruit bud itself, and a thorough adaptability of soil and situation, to the nature of the fruit planted on it.

With the remarkable increase of the orchard interests during the last quarter of a century, in the States and Dominion, have come also a corresponding increase of insect life and fungoid diseases destructive to vegetation, until the successful fruit grower must avail himself of all means at his command ; enriching his mind from the investigation of scientists, carefully putting to a practical use and best test of his own observation and experience, and showing his faith by most intelligent and thorough work throughout. Such is the lesson of the hour.

The quince was an exception to some others, and, as a whole, the crop was of better quality in 1890 than in the preceding year.

While the apricot, which was a fair crop in 1889, was an absolute failure in 1890. In this no reference is made to the Russian varieties, which so far have shown no characteristics that should merit a favorable mention, but we have a seedling that has been

grown many years by its originator, with great success in a quiet way, that is now attracting attention because of its hardiness, productiveness and early ripening, coupled with excellent quality; it is known as the Harris apricot and is being planted and fruited with great success and enormous profit on the shores of Seneca Lake. It ripens July 20th.

The gooseberry and currant each gave superior crops of fine fruit in 1889, while in 1890 the product was about one-half an average.

Strawberries did not exceed one-quarter the usual crop and were of inferior quality.

The crop of grapes was a grand success, probably the largest ever produced in western New York, and, with a favorable autumn, might have been of superior quality which was true of the early ripening sorts, like the Worden and Concord; but the continued rains worked much injury to those varieties wanted for winter use, which are poor in quality.

As before intimated, the observation and experience of past seasons have induced the inquiring mind to carefully consider the value of old as well as new varieties with special reference to their hardiness and adaptability to withstand the changes incident to this trying climate, not forgetting that productiveness, quality and good marketing properties are factors never to be disregarded.

The Yellow Transparent (apple) is affording more general satisfaction than any early variety. The Stump apple is an early autumn sort, has no superior as a producer, of a quality and style of fruit that will command the market of any city on the continent; the fruit in the fall of 1889, packed in peck baskets, sold in Philadelphia at 80c. per basket.

The McIntosh Red, having its origin in your own province, is becoming a great favorite and sells in our city markets as a fancy fruit stand apple, in 1889 bringing $2.25 per keg holding one and a half bushels.

Sutton's Beauty, a winter sort, keeping better than Baldwin, for productiveness, great beauty and excellence of quality, is unsurpassed and will be wanted in every market orchard when generally known.

The old Hubbardston Nonsuch is but just beginning to be appreciated. It has given a crop in the past two seasons where others have failed. One crop of this variety known to the writer, in the fall of 1889, sold at $3.50 per barrel in the orchard.

Many other sorts are being watched and tested with special reference to the wants of the orchardist from which, in due time, we shall hear.

To cover the ground desired, we must pass rapidly on, taking up other fruits, all of which may have points of interest. The peach crop is one of great profit to the producer, notwithstanding the failures that are sure to be met with now and then in this latitude. We say to avoid this, in planting seek only hardy sorts and especially those that are hardy in the fruit bud itself, and you will avoid much of the disappointment experienced by your less cautious neighbors. Such varieties can be obtained if care is observed. The old Hill's Chili is one of these, a peach of no value to eat from the hand, but yet of superior quality when properly canned, and so highly prized for this purpose, in some sections, that no other peach can be sold in its stead. The Morris White is another of the same class, perhaps more highly prized than any other of the white flesh sorts for canning and yet of great hardiness. Then, the good red cheek Melicoton, introduced years ago and to-day rarely known, will give you a crop frequently when others of its class will fail. And then, as we come to those of more recent introduction, the Early Rivers will endure cold that would destroy others, while its child, the Horton Rivers, partaking of the parent's nature in hardiness and excellence of quality has the advantage in being a perfect free-stone and with flesh of more firmness, in other respects being similar. The Hyne's Surprise, ripening at the close of the season of Early Rivers, is also a free-stone and extremely hardy, and prolonging the season of early peaches, while the Yellow St. John follows as the earliest of yellow peaches. All of these sorts seem well adapted to western New York, and we have never failed of a partial crop of these varieties in the most adverse seasons. The Garfield or Brigdon is a new yellow flesh peach of excellent quality, large size, and promises to become a standard orchard sort of great merit.

The varieties of pears adapted to orchard culture are so well known that little need be said regarding them. During the past two seasons the best paying crops have been produced

from Bartlett, Duchess and Kieffer; the latter excelling all others as a profitable orchard sort; one orchardist has 214 trees on a little more than an acre of ground, which on three consecutive crops was given net returns aggregating a little more than $3,000, the crop of 1890 giving him $1,313.50 of this amount; no pear is growing into favor more rapidly throughout the United States than this variety, as a profitable orchard sort.

The culture of the plum is perhaps assuming a degree of importance among all orchard men beyond that of any other fruit, while twenty-five years since the large orchards were confined mainly to the country adjacent to the Hudson River. The fruit itself finds its market through the country from Maine on the east, to Minnesota on the west.

The wants of the trade demand varieties both very early and very late in ripening, as well as those from their style adapted for sale from the fruit stands of the cities, and also those especially adapted for canning purposes. It will readily be seen that a large line of varieties is demanded to meet such requirements, which must be hardy, productive and fitted for long distance shipments, and to this end new sorts have been brought together, grown in this country, and many varieties have been imported from England and the continent, from all of which very valuable orchard sorts are sure to come that will meet the wants of this most progressive age.

In England, Mr. Thomas Rivers has sent out more very valuable orchard varieties of plums than any other living man, many of which are finding their way into collections in this country, affording the greatest satisfaction and profit to the grower. Among those that promise the best are the Czar, Prince of Wales, Monarch, Arch Duke and Grand Duke; while of those of more recent introduction from this country may be found the Field, Gueii, Hudson River Purple Egg, Stanton and Middleburg, all of them fruits of great promise. Would time admit, much more could be said on this topic of interest, but I fear I have already trespassed upon your good natures, and with a good word only for the cherry, blackberry and mulberry, I am done. There is money in a crop of cherries, provided they are wanted in your markets; but you should plant hardy and productive varieties, such as Montmorency, English Morello and Louis Phillippe, for sour sorts; and for sweet sorts Gov. Wood, Rockport and Windsor. The latter had its origin in your own province and is the best dark colored cherry we have ever marketed. The fruit has been sold in Philadelphia at wholesale, at 25c per pound.

There seems to be an increasing demand for the cultivated blackberries, and as a plantation will continue good for several years and the product is heavy, they are a profitable crop. The Snyder and Early Barnard are among the most profitable with us; the latter is the best berry, and equally as hardy as the former.

Much has been said in favor of the Russian mulberry, but with us it is of no value; while we regard the "New American" as a choice productive fruit and more hardy than "The Downing," from which it is a seedling, whoever plants a good mulberry should plant one of this sort.

We should add that the very find setting of the crop of grapes in 1890 is ascribed to the very fine weather existing at the time of blooming.

If any parties present desire information touching the character of any of the fruits named, beyond what this brief paper would permit me to give, it will afford me pleasure to answer any questions on such points.

Mr. A. M. SMITH—I would like to ask Mr. Willard whether he considers the Niagara and Bradshaw plum the same variety or not?

Mr. WILLARD—When the Niagara was first introduced it went under the name of the Mooney. I have never been able to discover any difference in the ripening or in the quality of the fruits mentioned, and I think they are practically the same.

Mr. WARREN HOLTON (Hamilton)—I would like to enquire wherein the value of the Kieffer pear consists?

Mr. WILLARD—More especially I think for canning. I do not think it is regarded as a fine table fruit; yet its general appearance is so good that it will sell in city markets most marvellously.

Mr. N. J. CLINTON (Windsor)—Is it an early bearer?

Mr. WILLARD—Very early. It is hardy with us and I have never seen any blight on it

Mr. F. G. H. PATTISON (Grimsby)—Have you had any experience in your section with the Weaver?

Mr. WILLARD:—I do not think it is any good. It is well enough where nothing better can be raised. My experience of all these varieties of wild plums is that they are not profitable.

Mr. MORRIS (Fonthill)—I have noticed a marked difference in the wood between the Mooney or Niagara, and the Bradshaw. The former is much more spreading and hardy

SWEET VERSUS SOUR CHERRIES.

The next question was, "Which pays better, sweet or sour cherries? What varieties of the Morello class are to be most commended?"

Mr. WILLARD.—Sour cherries pay the better, because birds will not touch them, they are less rarely attacked by insects, and they are more hardy. I prefer the English Morello and the Montmorency. The English Morello ripens just when the Montmorency has gone and when the city markets are very much in want of cherries. It is perfectly hardy and healthy. The Louis Philippe comes in with them and is an enormous bearer.

Mr. A. M. SMITH.—What about the Early Richmond?

Mr. WILLARD.—It is not successful with us because it ripens at the time when strawberries are beginning to market, and people always prefer strawberries.

Mr. MORRIS (Fonthill).—I differ with Mr. Willard as to the desirability of the English Morello. It is not successful with us.

Mr. WILLARD.—It cannot be the true English Morello Mr. Morris refers to. We have no trouble ripening it.

THE CARRYING OF OUR DOMESTIC FRUITS.

Mr. E. D. SMITH (Winona), introduced this subject with the following remarks, "A great deal has been said here to-day of the importance of cultivating the public taste for fruit and enlarging the market, and it has been urged with much force and truth that we can only hope to do that by producing a good article. That, as well as many other things is certainly important; but something, which is just now of far more practical importance to us as fruit growers, and which requires action rather than talking, is the problem, how we shall get our fruits carried to market in such a way that we shall get the full value of them. I think every commercial fruit grower who has shipped domestic fruits, will acknowledge that, taking the whole season through, our fruit is depreciated in value at least fifteen per cent, needlessly and uselessly, by the carelessness of the express companies, and it seems to me that a body of men so numerous, strong and influential as the Ontario Fruit Growers have come to be, ought to be able to take hold of this matter and get such legislation passed as will compel the express companies to deliver the fruit in the condition in which it is shipped. We take a great deal of care and pains to put up our fruit in good condition, and to get it put on the cars without injury; yet by the time it reaches its destination it is damaged ten, fifteen, and sometimes twenty per cent. I have had whole consignments of Worden grapes utterly and entirely destroyed, and quite unnecessarily, simply by the rough handling of the express companies; every berry was broken. We may talk as much as we like about this matter, but until we take action to secure legislation, it will never be remedied. We have done everything we could do to induce the express companies to carry our fruit more carefully, but they have never improved matters a bit. As the fruit product of the country is growing greater every year, and there is more at stake, it behoves us to take some decided action

in the direction of urging upon the Government to pass some stringent measures to compel these companies to do their duty. If we brought a suit at law against them, I do not know whether we would win it; but that is such a costly course that few fruit growers would be prepared to undertake it. If our fruit reached the market in as good condition as it leaves our doors, the consumption would soon double. I believe that, in ten years, forty baskets of fruit would be sold where one is sold now; but at present, owing to the careless handling of the express companies, it arrives at its destination in such a shape that it is often a wonder that people will take it at all.

Mr. A. H. PETTIT.—I would suggest that the question just raised be referred to a special committee consisting of Messrs. E. D. Smith, Allan, Clinton, McMichael and Caston, and that they report this evening what action they think ought to be taken.

Mr. A. McD. ALLAN.—I do not see that anything can be gained by deferring the discussion till this evening. There is no doubt of the truth of every word Mr. Smith has uttered. We have reason to complain, not only of the wretched way in which these companies handle our fruit, but of the way their agents steal it in transit. These express agents may be very good judges of fruit, but I think the fruit growers of this country object entirely to their examining it at that particular time; I do not think they have any right to do so, So much fruit is pilfered in this way that shippers have come to the conclusion that fruit sent by freight is really safer than that which goes by express. Such of our fruit as is soft is generally pounded to a jelly by the time it reaches the market. At Toronto, Hamilton, Harrisburg and other transfer stations I have watched the express men handling the fruit, and it is perfectly scandalous the way they handle it. As Mr. Smith well says, we may talk about actions, but the only privilege we have is to take abuse for our pains. Until we go to the legislature and procure an enactment, which will secure the protection of our fruit from damage, we may talk till doomsday and nothing will be done.

Mr. P. C. DEMPSEY.—We have adopted the practice of not using the express if it is possible to avoid it. I would rather risk a delay of a couple of days in sending fruit by freight than risk our express company. Some two years ago I shipped a lot of honey to be delivered at Toronto, where I was afterwards told it arrived in very bad order. This entailed on me the expense of a trip to Toronto, where I found that the honey had been badly broken, and when I spoke to the company about the matter, they told me to go to the d—— for satisfaction. However, I did not go to law; I simply settled with the parties to whom I shipped, by deducting fifty dollars and my expenses to Toronto. We afterwards made a contract for a further quantity, which we sent by freight. We even send strawberries by freight, and they arrive almost invariably in perfect order; but during the past five years I have not had one parcel arrive in perfect order which was sent by express. I think the best way to deal with these express companies is just to boycott them.

Mr. A. H. PETTIT.—We are not all situated so close to the eastern markets as Mr. Dempsey, so that we are obliged to ship many of our fruits by express. In the case of grapes and other hardy fruits shipment by freight works admirably.

Mr. E. D. SMITH.—We cannot send by freight to small towns and villages. We could certainly bring the express companies to time if we could boycott them; but when our fruit is ripe we must send it by express; only a small portion of it can be sent by freight. The only remedy I can see is legislation.

Mr. James GOLDIE (Guelph).—If you approach the railway companies in good time, I think they will be willing to attach a freight car to a passenger train for the carriage of fruit.

Mr. ALLAN.—I think probably it would be well to have a special committee, as suggested, draw up a resolution for this Association to endorse; and I would suggest the addition of Mr. Pettit and Mr. Carpenter to the committee.

Mr. G. C. GASTON.—I can corroborate what Mr. Dempsey says about the preference of shipping by freight. The Collingwood and Owen Sound district is a great plum district, and the express men will boast that they put on so many baskets on the car in a certain time; they simply throw them on. I have never yet had a shipment without the baskets being broken into. I do not think we can accomplish much by legisla-

tion ; it must be Dominion legislation, and there are only two railway companies in this country and they are all-powerful. The best way is to try to get competition where you have two lines. In our part of the country we are in the hands of one company.

Mr. A. M. SMITH.—Perhaps Mr. Willard could tell us how they managed these matters on the other side.

Mr. WILLARD.—I do not think we have the same reason to complain as you have. The express companies, while maintaining their rates, do not manifest the carelessness in handling that they seem to do in this country, because they have come to the conclusion that the fruit carrying trade is the most profitable traffic they have got.

Mr. ALLAN.—In case of a loss, have you any remedy against the express companies —any Government protection in that respect?

Mr. WILLARD.—We have no Government protection, but I have been asked two or three times to present my bill, on account of fruit being injured or lost by delays, and these bills have always been paid.

The Committee suggested for the purpose of preparing a resolution on this subject was then appointed. At a later stage in the proceedings Mr. E. D. Smith, on behalf of the Committee, reported the following resolution :

Resolved,—That the Ontario Fruit Growers Association, on behalf of the fruit growers and shippers of this province hereby condemn the action of our express companies in their system of handling, stowing and transferring their fruits from the points of loading to the markets.

That through their unnecessarily rough handling and delays in transferring the fruit, growers are constantly sustaining heavy damage for which, at present, there appears to be no reasonable remedy.

We therefore hereby memorialise the Dominion Government to enact such legislation in the premises as will relieve the fruit growers and shippers by providing an enactment that will enable them to recover substantial damages from such express companies, and that said express companies be compelled to carry such fruits to points of destination upon express train scheduled time.

Mr. E. D. SMITH.—At present the only law affecting the carrying of fruits is the common law of the land, and the companies use printed agreements which we are expected to sign when making a shipment. These agreements bind them to nothing, but they bind us to everything, and leave us no chance of obtaining any redress under any circumstances. The companies could leave the fruit at a side station for a week until it rotted, and we could get no redress. Such a state of things does not exist in any other civilised country. In England there is a Common Carriers' Act, under which the shippers can easily obtain redress, and I believe there is a similar act in the United States. I move the adoption of this resolution.

Mr. M. PETTIT (Winona), seconded the resolution, which was carried unanimously.

THE SIZE AND SHAPE OF FRUIT PACKAGES.

The next question announced for discussion was the following : "Would it be wise to seek legislation seeking uniformity in the size and shape of fruit packages? Ought not grape baskets, *e. g*, to hold out the full weight of five or ten pounds, as the case may be, and the peach basket be kept to the full number of quarts for which it is sold? Should not all fruit be sold by the pound, and every package marked with the number of pounds it contains?"

President MORTON.—With regard to the middle section of the question, I think there should certainly be uniformity. Grape baskets and peach baskets should hold the full quantity for which they are sold ; I do not think any other course would be an honest one.

Mr. W. E. WELLINGTON (Toronto).—With regard to the advisability of seeking legislation for uniformity in the size and shape of fruit packages, my opinion is that it would not be wise. There is a disposition on the part of some people to legislate for everything. Some want to make us perfectly good men by legislation. So far as fruit packages are concerned, I think supply and demand will regulate the size and shape. If the fruit grower finds that a certain package pays the best, he is going to adopt that package without coercion on the part of the legislature. There is no need of legislation for that.

If packages are sent to the market which do not contain the weight marked on them, you can trust the merchant or the purchaser to find it out. It is in the interest of the fruit grower that the packages should be marked with the weight and variety of the fruit they contain, and also that the fruit should be graded according to the brand upon it. All evasions of the truth bring their own penalty, so that there is no need of the legislature being asked to enact a penalty.

Mr. JAMES GOLDIE.—Do you not think the barrels ought to be the same size?

President MORTON.—The Weights and Measures Act distinctly provides what shall be the size of an apple barrel. I think it is twenty-seven inches between the heads, and not less than sixteen and a half inches diameter.

Mr. M. PETTIT.—I think it would be a most insane thing for commercial fruit growers to tie themselves up, or to ask to be tied up by legislation regarding the packages in which they ship their fruit. Let us have all the freedom we can. If we can make more money by using fancy packages, by all means let us use them. I think the grower is the last man who should ask for anything of this kind.

Mr. G. C CASTON.—I think it would be a mistake to ask for any regulations, especially with regard to small fruits. The size of the package would regulate itself. For small fruits there are pint baskets and quart baskets. Of course we know that the so called quart basket does not hold a quart, but so long as the buyer and seller are both satisfied, I do not see that we should make any change. We would not get a cent more if the baskets contained a full Imperial quart.

Mr. E D. SMITH.—How would it do to make the boxes a little smaller

Mr. CASTON.—I would not object to that.

Mr. WELLINGTON.—I am of opinion that the correct way to sell fruit is by weight. When in England two years ago I observed that strawberries, cherries and all other small fruits were sold there by the pound, and it struck me as being in every respect the most satisfactory method. Mr. Willard tells me that on the other side of the line they are adopting the same system to a great extent. They sell currants by the pound, throwing in the basket, so that they get paid for the basket as well as for the fruit.

Mr. WILLARD.—There are decided advantages in selling fruits in baskets by the pound. To illustrate: This year we got not less than ten cents a pound for our currants; the basket cost five cents, and by selling it by the pound we received about ten cents for it.

Mr. PATTISON.—I bought a lot of baskets for twelve quart baskets, but the inspector on measuring them found that they did not contain twelve quarts, and I had hard work escaping seizure in getting them through. I went to the maker and told him that he must supply me with twelve quart baskets in future, and he agreed to do so, although he said the fruit growers preferred the kind I got. I think it would be better to sell our fruits by the pound.

Mr. ALLAN.—It seems to me that it would be difficult to determine the size of the basket if you are going to sell fruit by the pound, for a grape that will weigh nine or ten pounds in the early part of the season will go to eleven or twelve pounds towards the end of the season.

Mr. E. D. SMITH.—That difficulty could be obviated by selling entirely by weight. At present we get the same price for one basket as for the other, although they may differ greatly in weight.

Mr. WELLINGTON.—If selling by the pound were the rule, a great many small fruits would be sent to the market in small trays; or in such a shape that they could be handled with a scoop and put into a scale, so that the purchaser would get the exact weight he wanted, and pay for it.

Mr. A. M. SMITH.—In my opinion selling by weight would be the fairest, both for the producer and the consumer; it certainly would for the consumer. As has been already pointed out, a great many of our so-called twelve-quart baskets hold probably a quart less than they are supposed to hold, and the ten-pound baskets in which we ship our grapes, if weighed, would frequently fall below that weight.

Mr. CLINE.—In the case of strawberries and raspberries, one basket sometimes weighs a third more than another, and that difficulty would not easily be overcome; but so far as all other fruits are concerned, I think selling by the pound would be the proper way to do justice to all.

Mr. CASTON.—I do not think such a change should be made in regard to strawberries and raspberries. If you put them on trays, I do not see how you could send them to market at all, and as for weighing those little quart baskets, that seems to me impracticable.

Mr. A. M. SMITH.—The dealers could weigh them out when selling them. In shipping, the producer could weigh them in large quantities.

Mr. WELLINGTON.—Smaller fruits shipped in this method would reach the market in much better condition than they do now. The trays are from two feet to two and a half feet in length, and an inch or an inch and a half in depth, and the berries being thinly spread over a large surface in this way, those on the top will not crush those on the bottom.

Mr. E. SUMMEY (New York).—Last summer I tried the proposed method of selling fruit in a comparatively small way. I live about twenty-one miles from Buffalo on the line of the New York Central Railway, and I grow the Bubach strawberry. When I was ready to market the fruit, I went to a grocer and got some of those small wooden trays which are used for butter, and put a pound of berries in each. I took the berries to the leading grocer in Buffalo, and told him I wanted twenty-five cents a pound or package for them. He was exceedingly doubtful about my getting that price; but it turned out that I had not nearly enough fruit to supply the demand. I was very careful, however, to send the best berries I had in that shape, and the very last package I sold held just twenty-eight berries. Besides the Bubach, I sold the Wilson in the same way, and I got for the culls within a cent a pound of what my neighbors got for their entire crop by the quart, while those which I selected I sold at twenty cents a pound, which is equivalent to about thirty cents a quart.

Mr. A. H. PETTIT.—Every year our growers are bringing forward new styles of packages. We may not have yet decided on the best form of package, but, as long as no complaint comes from the consumer, I do not see why the grower should find it necessary to change the system. Those engaged in the production of fruit know that the time of shipment of peaches and berries is a very busy season, when they require all the force they can obtain to handle their products, and it will be a very serious matter to add to their difficulties by requiring all the packages to be weighed and marked. In this country we buy our tea by the pound, whereas in the old country I have heard they buy it by the pennyworth. Since both the consumer and the producer are satisfied with our present methods of selling fruit, I do not think we should change them.

Mr. DEMPSEY.—If we should change the size of the basket now used for a larger one, it occurs to me that we might injure ourselves as growers and shippers. I have seen, for example, large quantities of grapes sold in the market, and the purchaser would say, "How are they put up?" The answer would be: "In ten-pound baskets." "Are there ten pounds of grapes in each basket?" "No, there are not." They do not expect ten pounds in them; the wholesale men in these cases are simply selling them by the measure. In other cases there are twenty-pound baskets, which perhaps over-run a little. The are sure to be tested when they arrive in the market. If they over-run, we do not get credit for that, but if they are lacking, the dealer does not generally deduct anything on that account.

A REGISTER FOR NEW FRUITS.

Would it be well to ask the Department of Agriculture to make some provision for a register of all new fruits which receive the commendation of this Association, with drawings of the same, accompanied by a full and accurate description?

In connection with this register, would it not be wise to ask the Department to provide for the granting of a certificate of ownership to the introducer of such commended

fruit or fruits for a certain length of time, on payment of a registration fee of say $10? All such details, including the engravings and description to aid in identifying the plant, and the names of persons to whom any such certificates are granted during the year, to be entered as an appendix to our annual report.

The SECRETARY.—I placed this question on the programme because it is one which is now receiving a good deal of attention in the United States. Prominent horticulturists there have made some proposals in this direction, with reference to both plants and fruits. I do not suppose we are prepared at present to carry out such a project in all its details. That would mean the employment of competent artists to portray new fruits, so that they would afterwards be identified, the writing of careful descriptions of them, and the collection and cultivation of living samples of such fruits. The idea, however, is, I think, worth considering, and as soon as the time arrives when it can be put into practice, something in this direction ought to be done.

Mr. A. M. SMITH.—I entirely agree with the Secretary in this matter. I could never see why a man who goes to the labor of hybridising should not have control of his production as well as the man who invents some valuable new machinery. I think something such as is proposed should be done for the protection of the producer of new fruits, and I hope some action will be taken by this Association on the subject.

Mr. DEMPSEY.—If some protection were afforded by the laws of the country to the producers of new fruits or new vegetables, it would have a tendency to do away with a great deal of humbug. Take, for example, the Worden grape. When it was first sent out to the fairs, it was represented as resembling the Concord; what was the result? Mr. Worden, who originated it, had very little stock, and the Concord was sent out in a great many instances as the Worden. Now, if the producer of a new fruit were protected for a certain period, say five years, or even two years, in the exclusive sale of it, I fancy a great deal of this humbug would be done away with. Then the producer could send his new variety to the nurserymen and others to be tested, reserving to himself the exclusive right of sale for the prescribed period. If this were done, I am satisfied that it would be of great advantage to the purchaser as well as the producer.

Mr. A. M. SMITH.—Perhaps Mr. Willard could enlighten us with regard to what is done on the other side in this matter.

Mr. WILLARD.—I think the only protection afforded at present is that of a copyright on the name, or the trade mark. But that can be evaded by changing the name, so that in my opinion the copyright is not worth a cent.

The SECRETARY.—I hold in my hand a copy of an Act which has been proposed in the United States Congress on this subject. It is entitled as follows: "An Act to secure to the originators and introducers of new and valuable varieties of plants a proper share of the benefits resulting from their labors and expenses in connection with such new varieties, and to protect the public from fraud in the purchase and sale of plants." I notice that the fee proposed is much higher than that suggested in the question before us; there it is proposed to be twenty-five dollars, whereas we suggest ten dollars. If the question should be referred to the Legislative Committee, that point could of course be considered.

The PRESIDENT.—It appears to me that there are only two possible ways of affording protection. One, which would involve great expense, would be to establish, under the control of the Government, stations where all patented articles of horticulture could be kept for identification. Another, but less complete way, would be to keep specimens of new fruits preserved in jars in such a state as to admit of identification. With flowers there would be no difficulty, because they could be identified in the dry state, in the same way as botanists at present identify wild flowers. This change could only be brought about by an amendment of the Patent Act. If I remember rightly there was an agitation ten or twelve years ago for an amendment of the Copyright Act to meet this difficulty; but the copyright scheme was abandoned, because it was regarded as affording no protection whatever, because a person wants to be protected in his fruit, not merely in the name. The only way that can be done is by preventing others than the inventor, if I may call him such, from enjoying the fruits of his labors for a certain number of years, by placing him on practically the same basis as the patentee of a mechanical instrument. I think the

objection urged at that time by the Department was the great difficulty of identifying fruits. They thought such a law would not afford the protection fruit growers anticipated, because there were new varieties between which there was so little difference that it would be pleaded that the variety attacked was really of different origin from the one protected, although the two resembled each other so much as to be hardly distinguishable. I would suggest that if the Association think there is need for such a provision at the present time, they should pass a resolution to that effect, and then interview the Department of Agriculture at Ottawa in order to ascertain whether such a thing would be practicable, or whether there are any difficulties in the way.

On the motion of the Secretary, seconded by Mr A. M. Smith, the subject was referred to the Legislative Committee, with instructions to lay it before the Government.

METHODS OF PROPAGATING FRUIT TREES.

Mr. JOHN CRAIG, horticulturist of the Experimental Farm, Ottawa, read the following paper on this subject:

While every fruit culturist is constantly looking for new varieties, how many are trying to improve on the old methods of propagating the varieties we have or are studying the effect of the various modes, on the health and longevity of the subject operated upon. It is not by any means sufficient that a tree makes vigorous growth while it is in the nursery, and fulfils the requisites of size and healthfulness in the nurseryman's opinion at three years of age; and the ills that sometimes follow should not all be charged to incongeniality of soil, unadaptability to climate, or other inherited peculiarities. It is wise to enquire into the methods by which the plants was first brought into existence. Are the root and stock on good terms? Are all the requirements for a vigorous and happy union fulfilled? In other words has the scion married into a congenial family. Now, it is not my intention to lead you into a discussion on the influence of stock and scion or *vice versa*. And from want of experience I will say here that my own opinions are by no means clear on this point, though there is no lack of literature on the subject—and I might add no lack of diversity of opinion. Examples of a reciprocal influence between stock and scion are not wanting, but the reasons deduced leave the impression that there is here an open field for investigation. With your permission, Mr. Chairman, I will briefly review the different methods of propagating the apple, pear, and our different stone fruits. Taking the apple first, we have two principal methods in common practice, viz., budding and grafting, this last may be sub-divided into top grafting, common stock grafting, and piece root grafting, or root grafting proper.

The practice of budding is so well known and universal that I will not refer to it except in a comparative way. The practice of grafting on pieces of roots originated in 1811 with Thomas Andrew Knight. Its use has become widespread in the United States for the propagation of various fruits, particularly the apple. The practice has, however, been the means of introducing many knotty problems into our pomology, which have been long discussed and which appear still far from solution. At the last meeting of the Association of American Nurserymen, Prof. Bailey, of Ithaca, N.Y., who has given considerable time and research to the subject, submitted his conclusions somewhat as follows. The advantage of budding over the grafting of *whole roots*, lies chiefly in the ease and cheapness with which the operation is performed; the disadvantages are chiefly two,—budding does not allow of deep setting in order to induce the emission of roots from the scion itself, and sometimes makes a crook in the base of the tree. In the old apple growing regions of Ontario the first disadvantage is hardly appreciable, but in the colder fruit growing sections it is essential to procure trees on their own roots by setting the scion deep. The advantages of whole rooted trees, whether budded or grafted, lie in the production of a deeper, finer, and more symmetrical root system at first, than is usually produced by piece-roots. Again, these trees make a more rapid growth the first two or three years, owing to their possessing better developed roots. The disadvantages of this

method are two, the cost of the roots; and that they cannot be set deep enough to strike roots from the scion. In regard to the advantages of piece-rooted trees they are principally these. They cheapen propagation by making two or more trees from one root, and, second, allow of deep setting in order that roots may be sent out from the scion. The last is by far the strongest argument in favor of this kind of propagation.

To sum up the disadvantages of piece-roots, we find that the first year's growth is comparatively weak; and, second, the roots may be few and ill-balanced. It would therefore seem that for the milder portions of Ontario, where root killing is unknown, budded trees, especially as we have no reliable data bearing on the relative longevity of budded and grafted stock, will give the most satisfactory results. But for the colder portions of our country the piece root would seem to serve an almost indispensable purpose where extreme hardiness is desired, by allowing the use of a long scion which is set deep for the emission of roots. In this manner, trees on their own roots are secured. As has been said, the piece-root serves only as a temporary root for a cutting. The scion represents a variety of known hardiness, while seedling stocks are exceedingly variable, with probably only an occasional one which is hardy enough to withstand very severe climates. It is my experience that good trees for all purposes can be obtained by using only the first and second cuts from the root, which should not be less than 3½ inches in length, and the scion between 5 and 6 inches; this when properly made will, under ordinary conditions, make a growth which, if not equal to a bud, will be quite satisfactory.

The *Pear* is almost entirely propagated by budding. There are a few nursery firms in the eastern States who are making a specialty of crown grafting on whole roots. By shortening the main root somewhat and using a 4½ inch scion, a root graft, about 12 inches in length, is made, which, when planted, approaches the principle of the apple root graft. Specimen trees of Russian varieties grafted in this way and planted eight years ago on the farm of the late Charles Gibb, at Abbotsford, Quebec, are healthy up to the present time, and making vigorous growth. Till we acquire a hardier pear stock than we now have, it will be prudent to adopt this method for the colder sections.

Cherries till quite recently have been almost entirely propagated by budding, latterly a few specialists are arguing in favor of grafting,—the same method as adopted with the pear—as a means of producing increased hardiness and longevity. As to the success of this mode of which I made mention in a paper read before the Dominion convention last winter, in practice I find that an average stand of about 60 per cent. is the usual return. Of a few hundred crown grafted last spring on Mahaleb stocks which had been planted a year previous, 80 per cent grew, making a very stocky growth,—averaging three feet in height. I have met with equal success in working on Mazzard roots which I consider the more satisfactory of the two. Were it not for the bad sprouting habits of the Morello varieties, these would probably make our best available propagating stocks. Prof. Budd, in a late bulletin, discusses the best stocks for cherries, and among them mentions the Wild Red stock (Prunus Pennsylvanica), and Sand cherry (Prunus pumila), as two of the most promising. Of the first he says, "In practice it has been found that it unites perfectly with all varieties tried, the Morellos, Dukes and Heart cherries, by either grafting or budding. It sprouts, but when topworked or crown-grafted with vigorous growing sorts it does not appear to have any reserve material to waste in sprouts." Of the Sand cherry he says, "As yet its use is somewhat experimental, but we can say positively, that it unites well with our hardy sorts in budding, and it does not dwarf the sorts worked upon it to a greater extent, during the first five years of growth, than does the Mahaleb." Thus far I have tried both of these stocks in a small way but my results have not been sufficiently pronounced to strongly advocate their use. In propagating the plum the same objections to the Myrobolan stock can be urged as in the case of the tenderer stocks for the pear, apple and cherry. Our native plum of the east can hardly be recommended as a promising stock, chiefly on account of its liability to be affected with black-knot and its slow growing habits. The western form of the same species has not these defects and unites well either budded or grafted, with the plum, peach, and apricot. It grows readily from pits, making plants large enough for budding in August of the same year. The smaller ones can be taken up and grafted during winter.

Propagating from Root Cuttings.

While the art of grafting and budding is of immense service in quickly multiplying new and desirable varieties, I have very little doubt that our trees would be less liable to disease and be longer lived if they were all on their own roots.

With plums and cherries and the stone fruits in general when once we get them established in this manner it is not much more difficult to multiply them and do so rapidly from root cuttings, than with raspberries and blackberries. The roots, forming the system nearest the surface, are preferable to the lower and deeper feeding ones. They are taken up in the fall, cut into three inch lengths and packed in boxes, with alternate layers of moist sand or earth; the boxes should be stored in a frost proof cellar. As soon as spring conditions will permit, the cuttings which will be found well calloused by this time, may be planted in beds quite thickly or in nursery rows, they should be stuck in a slanting position, with the top end $\frac{3}{4}$ of an inch below the surface. Being so near the surface care must be taken that they do not become too dry. In this way a fine lot of plants can be obtained in a comparatively short time.

Mr. James Goldie.—I suppose you are aware that there has been a controversy in England condemnatory of grafting?

Mr. Craig.—I know there has been some discussion, but in France and other parts of Europe the practice of growing apples from layers has been carried on for some time. I was not aware there was any present controversy on the subject.

Mr. Morris.—Mr. Craig's paper brings out a point of great interest to horticulturists. I do not think it is so important to have the scion long as he thinks. The scion has such an influence on the root that it will change the character of the root and the character of the tree, both as to its hardiness and the shape that it grows.

Mr. Craig.—I am perfectly aware that there is a reciprocal influence between the scion and the stock, but I do not think we can put it all on one side of the house, and I do not think we can be sure where to draw the line.

Mr. Dempsey.—I learned to bud and graft when I was a little boy, and I have always experimented in that direction. I never carried on a nursery, but I have always been an observer. I had a sweet apple tree, the fruit of which was so astringent that few would care to eat it. I grafted it with a sweet bough, and the apples I got were so bitter that we could not eat them. In that case the stock had certainly a most marked influence over the graft. Some people have two or three varieties of snow apples and I believe the difference is entirely due to the influence the stock has over the graft. This influence is observable more particularly in summer or fall apples than in winter apples, from the fact that they mature at a time when the tree is full of sap.

Mr. Morris.—You are speaking of top grafted trees?

Mr. Dempsey.—Yes. In our part of the country the Souvenir de Congres is very tender; but last fall I saw a basket of pears of that variety taken from a branch that was top grafted on a hardy seedling pear grown in that part of the country, and I am satisfied that I can grow many other tender varieties by top grafting them on hardy varieties in the same way. I have found, on the other hand, that where we used the stock of a tender variety, though we might top graft a hardy variety upon it, that hardy variety seemed to partake of the nature of the stock and become tender and freeze to death.

Mr. Morris.—I think these remarks are hardly to the point. Mr. Craig's paper referred to the propagation of the stock from the root.

Mr. Willard.—I think the preponderance of power is with the stock itself, and that is why it shows itself over the root.

Mr. Caston.—I can corroborate from my own experience what Mr. Dempsey said. In my part of the country we can only grow some of the tender varieties by top grafting, in the way he mentions, on hardy stock. This is true of the King of Tompkins County, several of the pippins, and the Rhode Island Greening. As a general rule, where you can get a good, sappy, vigorous stock, you can produce a larger apple, with better quality, by top grafting than by planting as an original tree. The same rule holds good in the case of plums and pears.

WILD FLOWERS, THEIR PRESERVATION AND DISSEMINATION.

President MORTON read the following paper on this subject: "Even the casual observer cannot fail to notice in our public and private lawns and gardens, the great number of foreigners there to the exclusion of the Canadian, strangers whose only recommendation for preference seems to be that they are not natives. This preference is so unpatriotic, so opposed and detrimental to the cultivation and expansion of the taste for the beautiful, that our solemn protest must be added to the condemnations already uttered by the few who have pronounced on the subject

"Canada for Canadians" has been used with great effect as a rallying cry in the political world, and the sentiment contained in these words appeals to every patriotic heart, however we may differ in its application. Nowhere more than in the flowery kingdom is this sentiment neglected.

While we do not belittle the beauty and elegance of many of our imported flora, we do however charge against the people of Canada that they have passed by unheeded, unacknowledged and unloved, as fair and dainty members of the floral realm as ever bloomed in distant clime, and it is at the door of our florists, seedsmen and those who affect taste and culture that we lay the blame of this neglect, a disregard arising from no other objection, for no other offence than that of being "only Canadian wild flowers."

We anticipate the objection urged by the florist and seedsman that there is no demand for such things, that their trade is controlled by the popular taste. We admit it largely true, but they can and do control and direct the popular taste by their unexcelled opportunities for bringing before the attention of the public new and desirable objects of culture. There is not a candidate for modern popular favor which does not owe its success to the persistent advertising and extensive notice given it by these gentlemen's publications, and were as much attention directed, in their lists and catalogues, to many of our wild flowers now consigned to obscurity, as is devoted to the illustration and laudation of tropical and sub-tropical species, which never succeed with the ordinary grower, the public would not be slow in recognising the merit of our beautiful native species. The lack of interest on the part of the general public is due less to want of taste or appreciation than to the ignorance which prevails as to the existence of the more beautiful of our wild flowers. But for you, gentle people of culture and taste, no excuse can be found; no palliation accorded your offence in permitting the finest members of our indigenous ornamental flora to remain in obscurity, and, from lack of appreciation, to approach so near extinction that they are fast becoming a tradition.

In the settled portions of Ontario, the prodigal lavishment of beauty with which Nature once adorned the country side has sadly vanished. The innocuous loveliness, that once brightened the landscape and cheered the heart of the pioneer with its beauty and fragrance, has been succeeded by the intrusive Ox-eye daisy, the pertinaceous thistle (misnamed Canadian), the too affectionate burdock, hound's tongue and sheep-bur, and a host of other mendacious immigrants. Now, it is only in out of the way places, deep ravines, boggy marshes and mountain dells that we can hope to obtain a glimpse of the wonderful wealth of splendor which once was found in pristine beauty in every grove and ravine, on every plain and hillside and in every copse and marsh.

We do not expect to preserve the face of nature unchanged as when discovered, but we protest against the vandalism which has characterised the destruction of our flora in the march of progress. Land must be cleared for tillage, marshes drained for cultivation and, perchance, where now repose the violet and the primrose will to-morrow be covered with piles of brick and sand. With the consequent despoilment of such locations we ask that every lover of nature will assist in the preservation from extinction and in the perpetuation of what is beautiful in our indigenous flora. Even in their present haunts this is only possible to a very limited extent. Money greed will cause the pillage and removal of every desirable or marketable flower, fern and shrub, and the axe, the spade and the

hoe never rest satisfied until the whole face of nature has been subdued and every foot of ground has felt their power. Our hope of averting the ultimate extirpation of every worthy plant lies in its perpetuation under cultivation. It must be removed to a place where we can guard its safety and help it escape the hazards which, in its native situation, threaten it with certain extinction.

But have we native plants deserving our interest and attention? Assuredly we have. The limitation of time desirable in a paper precludes me from doing more than make a passing mention of a few of the many desirable plants we have. Among the earliest to respond to the genial warmth of the vernal sun in evidencing their existence will be found the violets, of which *Viola palmata* and its variety *cucullata* succeed well in the border, *Viola pedata* is also worthy of a place. The Blood-root accommodates itself to ordinary culture and is beautiful while it lasts. Its white petals are fugaceous, but its broad leaves form a fine contrast to the finely dissected foliage of the two Dicentras which are so generally distributed. *Jeffersonia diphylla* forms a compact bushy plant of peculiarly shaped leafage from which it derives its popular name, Twin-leaf. The trailing Arbutus *Epigœa repens*, redolent with most delicious fragrance, is one of our earliest bloomers and a very desirable plant. Then, among the anemones, we have several deserving notice: those known as Hepaticas are among the first to gladden the heart in spring, and we have the stately, beautifully white, tall *Anemone dichotoma* blooming later in the season, and whose foliage is in keeping with the splendor of the bloom. Still keeping among the crowfoot family, the Actæas, while not so showy in flower as some, are objects of beauty in fruit with their clusters of red or white berries. The Marsh Marigold in all its wealth of golden lustre is an object of delight to our children who never tire of gathering in raptures of enjoyment its yellow cups. This plant is suitable for streams and marshy ground. The purple and the fall Meadow-rues, whose decompound foliage and tall panicles of pendulous flowers are very ornamental, and the Rue-anemone, with its pretty umbel, have but to be known to be admired. The Virgin's bower, with its exuberance of white blossom, the pistillate flowers succeeded by fruit like wooly balls, is not so overshadowed by its showy sisters as to be considered unworthy of cultivation. The rhomboid-leafed Crowfoot is also of sufficient merit to find room in our gardens. Nor must I pass over our Columbines, *Aquilegia Canadensis*, the one most common in Ontario, more graceful than any other native or foreign, and *A. Formosa*, which I have not yet had the pleasure of seeing but am assured is a most beautiful species.

The Trilliums, so common in our woods, bear well transplanting to the garden and deserve mention, and among the other members of the Lily family may be specified *Clintonia borealis*, which desires a cool shaded nook, the Dog-tooth violet, the Lilies *L. Philadelphicum* and *Canadense*, both of which can compare very favorably with many of our foreign lilies, *Zygadenus elegans* and *Uvularia*.

Among the orchids mention will be made only of the Cypripediums, not but others are deserving. Some of our Lady's Slippers are prettier by far than many of the much extolled and carefully nurtured exotic species: the yellow one, the purple one, *C. Acaule*, and the showy Lady's Slipper, *C. Spectabile*, with its large, round, white sac-like lip splashed with delicate rose purple, are all deserving of more than passing attention.

Passing on to other orders, the Gentians in cerulean hue are very beautiful; the scarlet Pointed-cup with its unequalled depth of tint; the Blazing-star, the Monardas and *Asclepias tuberosa*, the orange colored milk weed, sometimes called Pleurisy-root, have all sufficient merit to attract and hold attention. The Phlox, common in our woodlands; the Spider-flower, *Cleome integrifolia*, found on the great plains of the west; the Climbing Fumitory, the Harebell and at least two of the Lobelias, should be saved from extinction; while some of our wild sunflowers, the Sneeze-weed, several of the Asters, the Flowering Dog-wood, the High-bush Cranberry, the great St. Johns Wort and the Ox-eye, (I do not mean the Ox-eye Daisy,) are not devoid of merit for ornamentation; and, where suitable accommodation is provided, we must not neglect the waterlilies or the Calmia, with its remarkable adaptation for cross fertilisation.

But I must pause in the enumeration of beautiful species, not because the list is at all exhausted but because the completion of the list would consume time which can well be employed otherwise, and the mention of those that have been spoken of has been in

the hope that the attention, of those who know it not, may be called to the immense wealth of floral beauty, which, from lack of appreciation, wastes its sweetness on the desert air.

Now, a word or two as to location, soil and treatment. Study the station or natural situation of the plant, and in its enforced home endeavor to make its environments as nearly like the conditions of its former habitation as you can. Follow nature's plan in situation and soil as nearly as possible at the outset, as, whatever variation from original environment the plant may eventually adapt itself to, any very marked difference at first in shade, soil or humidity, coupled with the shock of transplanting, is apt to so discourage the plant that failure results. Provided the change is not too sudden, it is wonderful under what varied circumstances and changed conditions life will exist and flourish, and this principle is true in both sections of the biological world. Sun-loving plants, generally speaking, are much readier at adapting themselves to the changed circumstances of cultivation than those of woodland origin, but with a little care hardly any of our wild flowers or shrubs may not be rescued from the abandon of savagery to the protection of civilization.

Of you, ladies, whose perception of the pure and beautiful has never been entirely obscured, though perhaps warped by the conventionalism of custom and modern taste; of you, men, if within your heart there yet remains unextinguished (albeit crowded and crushed in the eager race for fame honor, and power, or perhaps trampled and suppressed in the fatuous endeavor after sordid pelf) a scintilla of that love for the beautiful in nature which the great first principle implants in every human breast,—and of you, men and women of Canada, in whose veins courses responsively any of that patriotic feeling which is essential as life blood to every true citizen, of you we ask and beseech in the name of the fair goddess Flora, and by all that is beautiful in nature, in the name of the genius of home and country, and by all that is noble in nationality, that you help rescue from the obscurity into which, for the nonce, it has been relegated, the beautiful flora of Canada, and see that it is accorded that place in your gardens, lawns and parks which it is entitled to merit.

Mr. James Goldie.—I wish to express my gratification with the paper which has just been read. It is very pleasant to me to find that our President is such a lover of the native plants of our country. For a number of years I have taken a great deal of interest in the cultivation of our native plants, which offers a large field to the lovers of flowers. By commencing with the early spring flowers, one can have a very interesting show the whole summer through. I hope this feeling for our native plants may grow. The great difficulty is that the woods are gradually becoming cleared and the swamps drained, so that specimens are constantly getting rarer.

Mr. A. Alexander (Hamilton)—I feel personally very much obliged to the President for introducing this subject. His paper has a patriotic ring, and it deals with a matter which this Association might very properly take hold of. I have noticed from reading weekly the old country horticultural papers, that the natural history and horticultural societies of Britain have been for many years lamenting the neglect of the very duty the President has been urging in his paper, namely, the taking of active measures to secure specimens of the rarer and more beautiful native plants of the country. Some of them have entirely disappeared, and are to be found only among the dried specimens preserved by naturalists. With regard to the question of soil and location, any person who feels the least interest in this matter must not be at all deterred by not having the exact conditions of environment. Plant life is very elastic. My first experiment opened my eyes to this fact. Walking in a wood by the side of a stream with a high clay embankment, I came upon forty or fifty yards of the common British primrose; but there I found what I never saw before except by the side of the River Tay in Scotland—both the dark maroon and the light pink varieties, as well as the yellow. The place was covered with them, to the exclusion of common weeds. I was so astonished that I transferred some of them to my father's garden, and in order to give them every chance to succeed, I thought it was necessary to carry thither some of the clay in which they were growing, but my mother interfered with that operation, and I had to be content with planting a row fifty or sixty feet long in a very gravelly soil. The consequence was that, in three

years, a width of eighteen inches, all that I could reserve, was covered with a mass of these primroses growing to a height of six or seven inches, and carrying a mass of flowers from the middle of May to the first of July. Those primroses continued to grow and seed for years, and so far as I know they are flourishing to this day. Three years ago one of the gentlemen who collect for Kew Gardens discovered a plant which came from the Andes in Peru. It was planted where he directed, and it failed. Last spring it was planted outside the greenhouse door, and it is growing there and flourishing as a weed. So let us all take courage that we may succeed if we try to save some of the beautiful flora of Canada. Had we a few more gentlemen as enthusiastic as Mr. Goldie, there would be no doubt of our success, for he is extremely liberal in distributing plants. Last spring he sent me no less than seventy-five varieties.

The SECRETARY.—I have been exceedingly interested by the paper which has just been read. I think there is danger in our Association of our being too much carried away by the purely commercial aspect of our pursuit, and overlooking its æsthetic aspects. I notice present to-night a gentleman who was one of the originators of this Association, I believe one of its first officers. I refer to Mr. Bruce of Hamilton; and I am sure we should all be glad to hear from him.

Mr. BRUCE, at the request of the President, made a few remarks, as follows: I believe I was one of the original members of this Association. The first President was the late Judge Campbell, and he was succeeded by the late Judge Logie. That was, I think, as far back as 1858 or 1859. I do not see present any of the old members whose faces were familiar then; but I am glad to see the good work the Association is now doing. Its beginnings were very small, and it had a great deal of up-hill work for a long time; but, by patience and perseverance, we interested the Government in the work, and persuaded them to give us a grant. I am glad that all those early trials are now over, and I wish you every success.

THE ROSE GARDEN.

Mr. WEBSTER (Hamilton) read the following paper on this subject:

Is not the name suggestive of a degree of innocent pleasure, only attainable by the lovers of the beautiful in nature? Does it not impart an indescribable sense of delight and rest from the harassing cares which beset us daily? Does not the care involved, the labor and watchfulness required to protect and perfect our roses, the health-giving exercise received and the pure enjoyment afforded our every sense while contemplating the developing beauty and fragrance of each flower, afford a truer healthier and more elevating pleasure than is to be derived from any of the more artificial forms of recreation of the present time? Not in rose culture alone, but in the wide range of floriculture, whether in the modest window or garden or in the costly conservatory, is to be found that particularly restful amusement, which above all others, leads us to look in expectancy and faith for better things to come. In connection with the subject of rose culture I will endeavor as briefly as possible, to give some of the results of my experience, with this, the well-named Queen of Flowers, confining my remarks to the culture of hardy roses in the open air. The location and planting of the bed is the first matter to consider, and here I would suggest that it will prove more satisfactory to plant roses in a bed by themselves than to intersperse them throughout the garden, for reasons to which I will refer again.

THE SOIL.

Roses succeed best in a somewhat heavy soil, provided that it is well drained, either naturally or otherwise. It being cooler during the summer months, if the soil is of a sandy nature or a sandy loam, the surface of the bed may be covered with a mulch of rotted manure to the depth of two or three inches, long manure will answer, but it is more unsightly. In the month of June or as soon as the hot weather sets in is the time

to apply the mulching, allowing it to remain throughout the season and digging it under in the fall or following spring, with a further liberal addition of well rotted barnyard manure, that from the cow stable being preferable for light soils. If possible the rose-bed should be sheltered from high winds, but at the same time entirely clear of overhanging branches. Roses delight in the morning sun and as our prevailing winds are from the west and south-west it is preferable to have both the shade and the wind-break in that direction. The bed may be of any form. If upon a grass lawn perhaps a round or oval is the most desirable. The months of April or early May is in this locality the best time to plant all hybrid perpetual, hybrid tea and moss roses. If two year plants they may be set thirty inches apart. If but one year plants, of which there are by far the most planted, they may be set fifteen to twenty inches apart, in which case it will be necessary to dig up and re-plant further apart in two or at the longest three years. The month of October is the best time to re-plant. Roses of any considerable size, as if carefully moved at this season it will not interfere with their blooming the following season. Should the plant be two year budded on the manetti stock, the purchaser should be made aware of the fact when obtaining them. And in setting be careful to plant so that the bud or point of union is two and a half or three inches below the surface, keeping a look-out from time to time during the growing season for shoots from stock, which, when found, should be cut off close. With a little observation these are easily distinguished from the growth of the real roses, the most marked difference being that the leaf stems of the manetti are furnished with seven leaflets, while nearly all the hybrid perpetuals have but five. The plant will then soon throw out roots from above the bud or point of union, and then, there being no further use for the manetti root, they very frequently die out of the way.

Protection in Winter and Pruning.

After many experiments I have found that a simple mounding up of the earth about each plant, to the height of eight or ten inches, to be the very best protection for all roses that require to be closely pruned. When in the spring all danger of frosts and cold biting winds has passed, remove the earth protection and level neatly, using a short piece of stick to remove it from among the canes. The pruning may then be attended to. I seldom leave more than six or eight inches of wood, measuring from the ground, on even the strongest growing varieties, those of a weaker growth being pruned even closer. Remove all weakly shoots entirely as this stimulates the plant to produce strong blooming canes. When the operation of pruning is finished gather up all clippings and burn at once, as by so doing that troublesome pest, the "Rose Thrip," is overcome to a great extent. The larvæ having been deposited in the canes toward the close of the previous season, what few survive can be easily kept in check by timely applications of soapy water from the wash tubs; a few drops of carbolic acid mixed in each pailful will make the application more effectual. Where tobacco stem refuse is to be had an infusion of these is perhaps as good as anything. When using insecticides of any kind, the advantage of grouping, over indiscriminate planting, will be at once apparent. This also applies to all operations in connection with the rose. If the best results are expected, it will be at the price of constant viligance, for the rose grower has many insect enemies; but the reward will compensate for all the care expended upon them. And in case I have not dwelt sufficiently on all the important points in connection with rose culture, I would now say, don't spare the manure if you would hope to see the best that your rose bushes are capable of.

Regarding Varieties.

I would say that the rose possessing all the good points combined has not yet appeared, neither do we need to seek among the lists of novelties for the most desirable. Many of the best varieties of to-day have stood the test of a quarter of a century, and will, I believe, remain supreme favorites for years to come.

Those who have had experience with the grape vine, may bring it to bear in their cultivation with the rose, as in several ways they resemble each other. Alike they will

bear or bloom under indifferent treatment but are equally ready to respond to high cultivation. Both are disposed to over-produce, and thinning the buds of the rose is followed by equally good results as is thinning the bunches of the grape vine.

Many contend that our Canadian climate is not congenial to the rose. I would say that wherever the same intelligent observation and skill has been brought to bear on the rose, that has brought our Canadian fruits to their pitch of perfection, the results have been equally satisfactory. I believe that the time is not very far distant when roses will be found growing in perfection and profusion in every garden throughout our fair Dominion. I have not alluded to the so called tender roses, the Teas, Noisettes, Bourbons, etc., some of which I have found to be as hardy as many of the hybrid perpetuals. A bed of these selected as to hardiness, forms an object of beauty which endures throughout the season. Upon this subject, however, it may be my privilege to address you upon some future occasion.

Mr. GOLDIE.—Do you advocate budding or planting on their own roots?

Mr. WEBSTER.—I prefer planting on their own roots. Sometimes the bushes make but a slow growth at first, but after two or three years they seem to go ahead fast enough.

Mr. GOLDIE.—Are you troubled with the thrip?

Mr. WEBSTER.—Very much; but by cutting back, we get rid of a great many of them. We do that as soon as the fine days come, though I would prefer to do it on the late side than the early. We have had very little trouble keeping them in subjection, with tobacco water mixed with a little soap and water.

Mr. GOLDIE.—The greatest obstacles I find to rose growing are, first, the thrips, and then the hot sun, which will destroy the flowers sometimes in one day. Sometimes the bud will not open out, owing to its having been scalded by the sun. I think a little shading will save them.

Mr. WEBSTER.—All my experience has been close to the lake, which I presume mollifies the influence of the heat.

Mr. GOLDIE.—I have thought that some of the roses might be protected somewhat by a net covering.

Mr. WEBSTER.—I have occasionally stretched a web of cotton over them when growing them for exhibition. With regard to budding, I have budded H. P. roses upon the Manetti, but my experience is that in a few years the Manetti dies. The plant throws out a mat of roots above the point of union, and makes the Manetti root unnecessary.

Mr. G. C. CASTON.—The Dahlia is my favorite flower, and I would like to ask about a little bug which destroys the bud, so that the plant does not blossom. It is a little grey beetle, about a quarter of an inch long, and very active. It both jumps and flies.

Mr. WEBSTER.—The greatest pest our dahlias suffer from is green in color, and when frightened always moves sideways. This summer, owing to the intense heat, we got the complete mastery of it. The bug Mr. Caston speaks of we have seen, but it has never given us any trouble.

Mr. ANGUS SUTHERLAND.—I am very glad that these subjects of roses and our native flowers have come up for discussion. Last summer I was in the Algoma district, and there, in the townships of Grant, Meredith, Macdonald and Torbold, I saw the most beautiful wild roses I have ever seen in Canada. A man belonging to the county of Huron, I think, named Mr. Murray, gathered a great many varieties there. As soon as the trees are cut down the roses spring up, and not only roses, but immense quantities of other flowers, the most beautiful I ever saw in Canada. I think all Canadians should make selections of our Canadian flora in the Algoma and Parry Sound Districts, which are there wasting their sweetness on the desert air. I think the reason the roses flourish so well in the four townships I have named is owing to the heavy dews which prevail there.

Mr. MORRIS.—There was one little point in Mr. Webster's paper with which I do not agree. I understood him to suggest that fine manure should be put on the bed in the spring and left there. My plan is to manure the bed in the fall, and, after

spreading it, to cover it with a layer of dead leaves, which I think is the best possible protection for the plant. Then, in the spring, I cover this with fine soil, principally sand, just enough to conceal the leaves. This acts as a mulch and keeps the soil moist.

Mr. MITCHELL (Innerkip).—As most of the gentlemen present know, I have been for many years an enthusiast in rose culture, but I am narrowing down my attention to four varieties particularly. I think we are inclined to run to too many varieties. Among the dark varieties, Prince Camille de Rohan is perhaps the most desirable. Among the red roses I place the General Washington first, for all that it is a scentless rose. In pink roses Paul Neyron is the best we have. In white we have none that are perfect. Some, such as Merveille de Lyons and the Baroness de Rothschild, are very fine, but we have to depend on roses of a more rugged type. Many of our best roses, we must confess, are not quite hardy in our climate. The best protection we can give them is, I think, evergreen boughs. If we use straw manure, or such protection as we ordinarily have at hand, a winter of deep snows will bring mildew, of which there is no danger with evergreen boughs.

SECOND DAY'S PROCEEDINGS.

THE NIAGARA GRAPE VERSUS THE CONCORD.

QUESTION.—Is the Niagara grape more productive than the Concord?

Mr. WILLARD.—I should say it is. I believe the strongest point of the Niagara is its great productiveness, although I do not care for its quality.

PRUNING OF PLUM TREES.

QUESTION.—Should bearing plum trees be pruned? If so, how and when?

Mr. CLINE.—In my growing of plums I have never pruned the treees except to get at dead branches, and I never trim a branch unless it gets bent over and in the way. I find that age will stop the growth soon enough.

The PRESIDENT.—Mr. Willard, what is the practice in your section of country?

Mr. WILLARD.—Some twenty years ago, when I first began growing plums, I let the trees grow, simply observing the rule advanced by Mr. Cline. But, taking my cue from the Hudson River people, to whom the people of western New York look for instruction in plum culture, I found them cutting their plum trees in the winter, going over them, and taking off more or less of each tree's growth. I asked the reason of this, and one old grower said to me: "Don't you know that a plum tree is apt to get exceedingly full, and as its limbs are brittle, if a wind comes on when it is heavily loaded with fruit, the tree is in danger of being broken. Careful trimming forces buds into the branches and gives a greater fruiting surface." Since that time I have adopted that style of dealing with our trees in winter. I do not like to cut a tree when it is too full of frost. Having regard to the varieties which make considerable growth, our rule is to cut off from one-fourth to one-half of the previous year's growth. I would not do this, however, except during the period of the year when the tree is dormant. I would not do it in May or June, for fear of forcing out, in the latter part of the season, buds that ought to have lain dormant.

THE BEST PAYING RED GRAPE.

QUESTION.—Which red grape has paid the grower best during the season of 1890?

Mr. C. P. CARPENTER (Winona).—Rogers' No. 9 (the Lindley), has paid me the best.

President MORTON.—How many reds would it be in competition with?

Mr. CARPENTER.—I have one other variety of the Rogers, the name of which I do not know ; it is a very thin-skinned grape.

The SECRETARY.—Have you the "Brighton?"

Mr. CARPENTER.—I have two vines, and I would not care to have any more.

Mr. CASTON.— How does the Brighton compare with the Lindley?

Mr. CARPENTER.—It usually mildews with me, and, for my taste, I prefer the Lindley.

Mr. ORR (Stony Creek).—The Delaware has been the best paying red grape I have ever known. I have six or seven varieties.

Mr. A. M. SMITH.—What about the Moyer?

Mr. ORR.—I have only fruited the Moyer this year. It ripens very well about the 26th of August. I think it is about ten days ahead of the Delaware, but its quality, though fair, is not so good.

Mr. CASTON.—If we could get a good grape as early as the Champion, it would be a great advantage.

Mr. ORR.—There is no comparison between the Moyer and the Champion. The former is greatly superior.

EXPORT OF GRAPES, PEACHES, PEARS AND QUINCES.

QUESTION.—Can grapes, peaches, pears or quinces be exported with profit? How should they be packed?

Mr. A. McD. ALLAN.—The exportation of these fruits is as yet only in the experimental stage, and it is unsafe to venture an opinion. What is meant by exporting refers, I suppose, to Great Britain or other European countries. There may be times when such fruits could be exported profitably, but it is first of all necessary to consider the market you wish to export to. In the case of the British market, for instance, you must ascertain what countries supply that market at present, and what are the varieties and qualities of the fruits they send. If it should happen, as it frequently does, that there should be a failure of the crop in those countries in a particular year, that would be our opportunity, if we had a surplus, for testing the British market. But, in the first place, we have not yet the carrying accommodation. We can manage so far as the railways are concerned, but the steamship accommodation is not yet at all what we want it, and in this respect Canada is very much worse off than other countries, and I am unable to understand why it is our large steamship lines allow this to be the case. For instance, large quantities of apples, of wretched quality, are shipped annually from Tasmania to Great Britain in rough boxes, and they are landed in good condition, simply because the steamship lines give them good accommodation. They have a hot and long passage, whereas ours is a cool one and very much shorter. There is something altogether wrong when we cannot land our fruit in the British markets in better condition than we do at present, and the fault is entirely with the steamship companies. The fan system is good so far as it goes, but it is not sufficient. It is necessary not only to supply an abundance of cool air, but the fruit should be carried in a close compartment specially prepared for it, and the air must be not only cool but dry. The atmospheric draft sent to the fruit in the shipment across is very damp, and is likely to taint it with fungus. We could certainly build up a splendid market for our fruits in Great Britain, if we had the accommodation for carrying them. I believe thoroughly that there is more money to this country in the British market for our summer and fall apples than there is for our winter apples, because they would arrive there at the time when apples are most wanted, and we have varieties of late summer and fall apples which would carry that market by storm. At present the British people get nothing to equal ours, in color, quality, or any other respect. I do not know any matter in which the fruit growers of this country should take more interest than in pushing strongly for the kind of steamship accommodation we require for the carrying of our soft fruits into foreign markets.

Mr. DEMPSEY.—With respect to shipping plums to England, I think it will be a long day before it pays I have seen plums in England, which we cannot hope to equal, sold at a shilling a bushel. The plum is a fruit which I never cared much for myself, but I must confess that I liked the plum I saw in England. But their apples and pears will not compare for a moment with ours, either in flavor or color. Their best apples and pears are grown on walls, but it does not pay commercially to grow them in this way. Mr. Allan and I had some pears of the Duchess d' Angoulême variety, which were grown on a wall, and we did not care to eat them. The climate of England is not adapted to the growth of pears or apples. Some experts there admitted that cider made from our apples could bear twenty per cent. more water and yet be better than theirs.

WOOD ASHES AS A FERTILISER.

The next question was: Does it pay the fruit grower to make his own commercial fertiliser, providing he can buy wood ashes at ten cents a bushel, delivered? What other fertiliser should be mixed with wood ashes to make a complete fertiliser? Are wood ashes suitable to all kinds of soil?

Prof. C. C. JAMES, of the Ontario Agricultural College, Guelph, in reply, said: The question of the relationship of ashes to the orchard must be considered from the point of view of what the orchard requires. There are three demands made upon the soil; first, for the wood; second, for the leaves; and third, for the fruit. The demand made on the soil for the wood, though greatest perhaps in the younger days of the tree, never ceases. Now, hard-wood ashes, such as are available, have been obtained simply by the burning of wood quite similar in composition to the wood of our fruit trees, so that if you return to the soil those ashes, you are returning just what the trees require and in about the proper proportions; so that, for the growth of wood, the application of hard wood ashes is the most practical and the most economical. In regard to the leaves, they vary greatly during the season. At the time the leaves fall, their most valuable constituents return to the sap; yet there still remains in the skeleton leaf a considerable quantity of constituents which are valuable. Whether these be lost to the orchard or not, depends on its location and its protection from winds; those orchards best protected will suffer the least, while those less protected will suffer most in the long run. In the case of fruit there is of course no return to the soil; that is a loss which is certainly irremediable. I find that material along this line is widely scattered and somewhat difficult to obtain. Nevertheless, I have been able to obtain and summarise the constituents removed from the orchard in the fruits of apples, pears, plums, peaches, grapes and berries. I may say that hardwood ashes are being shipped in large quantities from Ontario, not only to fruit growers in the Northern States, but to the orange plantations of Florida; and, while the fruit growers of this country have been neglecting this great source of profit, the fruit growers of the United States have been paying as much as thirty-five cents a bushel for Canadian ashes by the carload. If American fruit growers have been finding it profitable to purchase our ashes at that rate, I think the question is settled that it will pay you to retain them here if you can get them as low as ten cents a bushel. In the chart which I have prepared I have first put down the percentages of the constituents removed by the fruit per hundred pounds. Then in a second table I have set down an average crop of these various fruits to show the proportion of constituents removed from the soil. For instance, taking a crop of apples at fifteen thousand pounds, there is drawn from the soil for it about twelve pounds of nitrogen, one and one-half pounds of phosphoric acid, nineteen and one-half pounds of potash, and four and one-third pounds of lime. If you analyse the various fruits, you will find in the ash from 50 to 75 per cent. of potash, which certainly proves that potash is the principal ingredient taken from the soil by your various fruit crops. Second in importance is lime; but it is not so important from a commercial point of view, for the reason that nearly all our soils are well supplied with lime. Besides every phosphate contains a large quantity of lime, whether superphosphates, or ashes, or bones, so that when applying either of these you will be applying lime at the same time. Next comes phosphoric acid, and lastly, nitrogen. The question, then, resolves itself simply into this, how will wood ashes meet these four or five demands which

are created by the removal of the fruit from the soil? In my chart I have shown the constituents of hardwood ashes. In the first place they contain from 6 to 8 per cent. of potash. If you take a bushel of hard wood ashes weighing 48 or 50 pounds, every bushel you put on your orchard will contain at least 3 pounds of potash. That will be worth 4 or 5 cents a pound at least, so that your bushel of ashes contains potash which is worth at least 12 or 13 cents, probably a little more in some cases. A fair average would be 7 per cent. of potash. Next, phosphoric acid amounts to about 2 per cent., which in 50 pounds of ashes will give about 1 pound of phosphoric acid, worth from 2 to 5 cents; a fair valuation would probably be 4 cents. If we add this to our valuation of 14 cents for potash, we have 18 cents as the lowest valuation to be put on a bushel of ashes, irrespective of the lime, magnesia, iron and other constituents which are present in it. You can easily see how these eastern and southern fruit growers are getting an article worth to them 25 or 30 cents a bushel compared with other fertilisers. A bushel of ashes is worth to you from 20 to 25 cents, and if you can purchase them at 10 cents, they are the most economical fertiliser you can obtain for your orchards. Now, in what respect are our ashes deficient? The only constituent in which they are deficient is nitrogen, and your fruits do not require much of that, unless, perhaps, plums, which are richer than other fruits in nitrogen. If you want a mixture which would be almost absolutely perfect, I would advise, for an acre of ground, 40 bushels of ashes, to which I would add about 100 pounds of crushed bones and about 100 pounds of sulphate of ammonia. This will give you a complete mixture, which will foot up to about $8.50, and which, put on your land every two or three years, will give you a magnificent return. How will that compare with a general mixture put on the market by the dealers in fertilisers, which would meet the same requirement? Such a mixture would cost you about $12.50. If you have not the bones, the ashes mixed with ammonia will do. With regard to leached ashes, in the process of leaching nothing is removed but the potash, and even of that from 1½ to 2 per cent. is left. Perhaps you are acquainted with some experiments which were carried on a few years ago by the eastern experimental stations in connection with the yellows in peaches. It has been proven that such destructive pests more readily attack fruit trees which are deficient in mineral matter, and the different phosphates, salts of lime and phosphoric acid, enable the trees to make a more vigorous growth and withstand those attacks. It is the same principle which is observable in the case of man: disease will strike the man who has the least vitality. It has been invariably found that trees, affected with these diseases, are deficient in potash more than anything else, and by adding potash to the soil you enable the trees to resist such attacks. If you can buy ashes at 10 cents a bushel, I would strongly advise you to buy all you can. I feel so strongly on this question that I wish the Dominion Government would put such a large export duty on ashes as to make it impossible to export them at all. The export of wood ashes shows perhaps the greatest loss, so far as fertilisers are concerned, that the farmers of the country are experiencing at the present time. We are simply enriching the eastern and southern fruit growers at the expense of the farmers of this country.

I.—Analysis of Ash of Fruits, Etc.

	Ash per cent.	Composition of ash.		
		Potash per cent.	Lime per cent.	Phosphoric acid per cent.
Apples	0.40	55 to 65	16	21
Pears	0.35	55	.....	16
Plums	0.30	60	15	15
Peaches	0.35	70 to 75	3	16
Grapes	0.88	50 to 65	15	18
Strawberries	0.50	55	14	18
Raspberries	0.35	50	20	20
Currants	0.50	55	18	20
Average	0.45	58	14.4	18

II.—Quantities of Fertilising Constituents Removed by the Fruits Alone.

—	Nitrogen.	Phosphoric acid.	Potash.	Lime.
Apples ..... per cent.	0.08	0.01	0.13	0.03
" ..... 15,000 lb.	12.0	1.50	19.50	4.50
Pears ..... per cent.	0.06	0.05	0.18	
" ..... 15,000 lb.	9.00	7.50	27.0	
Plums ..... per cent.	0.40	0.04	0.20	0.04
" ..... 3,200 lb.	12.80	1.28	6.40	1.28
Peaches ..... per cent.	.....	0.055	0.25	0.01
" ..... 3,200 lb.	.....	1.76	8.00	0.32
Grapes ..... per cent.	0.16	0.15	0.50	0.12
" ..... 8,000 lb.	12.80	12.00	40.00	9.60
Berries ..... per cent.	.....	0.08	0.25	0.07
" ..... 2,500 lb.	.....	2.00	6.25	1.75

III.—Quantities Withdrawn by Various Fruit Crops per 100 lbs. and per Crop

Averages of Analysis.

—	Nitrogen.	Phosphoric acid.	Potash.	Lime.
Apples ..... per 100 lb.	0.08	0.04	0.13	0.03
" ..... " 15,000 "	12.0	6.00	19.5	4.50
Pears ..... " 100 "	0.06	0.05	0.18	
" ..... " 15,000 "	9.00	7.50	27.0	
Plums ..... " 100 "	0.40	0.04	0.20	0.04
" ..... " 3,200 "	12.8	1.28	6.40	1.28
Peaches ..... " 100 "	.....	0.055	0.25	0.01
" ..... " 3,200 "	.....	1.76	8.00	0.32
Grapes ..... " 100 "	0.16	0.15	0.50	0.12
" ..... " 8,000 "	12.80	12.00	40.00	9.6
Oranges ..... " 100 "	0.25	0.07	0.28	0.09
" ..... " 15,000 "	37.50	10.50	42.0	13.5
Strawberries ..... " 100 "	.....	0.09	0.30	0.07
" ..... " 2,500 "	.....	2.25	7.50	1.75
Raspberries ..... " 100 "	.....	0.07	0.20	0.07
" ..... " 2,500 "	.....	1.75	1.75	1.75

Mr. F. G. H. Pattison (Grimsby).—What value would you attach to soft-wood ashes? In our neighborhood we can obtain the ashes of such woods as white oak, red oak, elm and ash, in considerable quantities at cheap rates. What value would you attach to these per bushel? Also, what value would you attach to the application of superphosphates and nitrate of soda, and what quantities would you recommend for application.

Prof. JAMES.—There is a mistaken idea in the minds of many people that soft-wood ashes are not so valuable as hard-wood. The difference between them is not so much in the value as in the quantity produced. Analysis shows that soft-wood ashes are worth nearly as much as hard-wood; they are worth at least four-fifths as much. Nitrate of soda contains a little less nitrogen than sulphate of ammonia, but it could be used to replace sulphate of ammonia very well. About a hundred pounds of either to the acre should be used.

Mr. ORR.—How often should the orchard have a dressing?

Prof. JAMES.—The best plan is to dress often and in smaller quantities. If you put on an application of say 30 bushels of ashes to 75 or 100 lbs. of sulphate of ammonia or nitrate of soda, I would put it on pretty often. It is so soluble that if your orchard is well drained you are in danger of losing it. I would put it on every year if possible, but at any rate every other year. The mixture I recommend will give the best return in the case of open soils rather than in heavier soils. Superphosphates alone are not likely to give as good a return as a mixture of them with potash. Potash is the first thing demanded. The bones supply the phosphoric acid, though superphosphates will of course supply it also. Superphosphates are of greater value for cereal crops than for fruits, because phosphoric acid is required principally in the formation of seed, and in grain crops the seed is everything, whereas in fruits it is a small proportion.

Mr. MORRIS.—I have been very much interested in Prof. James' address on the value of ashes, being myself a great believer in them as a food for the growth of wood. In fact I do not believe anyone else in the country has spent as much money for wood ashes as I have done in my business. We keep two or three teams constantly engaged gathering ashes, and we find them most valuable for land which is deficient in lime. A tree grown from a mixture of barnyard manure and wood ashes—they answer better together, I think, than either one alone—will weigh perhaps twice as much as a tree grown from manure alone; it will resist diseases better, be stronger, and make in every way a very much better tree.

President MORTON.—Is not nitrate of soda apt to leach away light soils more than sulphate of ammonia?

Prof. JAMES.—They are both liable to leach away. Perhaps it would be best to make the application in two or three doses during the year. Then it is readily taken up by the plants and is not likely to be washed away. Apply it in a dry time during the growing season. If you have your ground well mulched the loss will be still less.

Mr. D. NICHOL (Cataraqui).—Would you not consider it inadvisable to apply it in the fall of the year? It has always seemed to me folly to put on a fertiliser of any kind after the ground has become frozen hard, because it is liable to be washed away before the spring comes in.

Prof. JAMES.—That depends entirely on the slope of your land. If it is on a good level there is no danger of loss whatever. The safest period, of course, is the vigorous growing period of spring. Certainly if you put it on in the fall and there is much of a slope you are liable to have it washed away.

Mr. NICHOL.—Even on the level the snow is carried away by the surface drains.

Prof. JAMES.—There is a great difference of opinion on that question, and I would not make a general statement one way or the other. No doubt there is a great deal of loss in some cases, but in others I think the loss is exceedingly small.

Mr. MORRIS.—I have had some experience in this matter. I remember throwing some ashes on the land on the first of November, expecting that there would be a thaw, and I am satisfied that the whole strength of those ashes went away with the spring freshets. The whole thing went off like soap suds.

Mr. SPRINGER (Wellington).—What do you think of plowing under a green crop for fertilising?

Prof. JAMES.—The principal value of turning under a green crop is of course what you gain from the atmosphere. You are simply putting back into the soil what has been taken from it. That will not add anything in the nature of lime or phosphoric acid, but simply vegetable matter.

Mr. SPRINGER.—Will it give you nitrogen?

Prof. JAMES.—That is a much disputed point. It is believed by some that the plants take up a little nitrogen from the soil.

Mr. PATTISON.—Would you put unleached ashes on a heavy soil?

Prof. JAMES.—On a heavy soil I would first try coal ashes. Their effect is principally mechanical or physical. They contain lime, and you are not likely to get too much lime in the land. The quantity you would add from coal ashes would not seriously affect it.

Mr. PATTISON.—Do the unmixed hardwood ashes tend to make the soil more cohesive?

Prof. JAMES.—No; rather the opposite.

PROPOSED LOCAL EXPERIMENT STATION.

The next question was—Would it be wise for the Department of Agriculture for Ontario to establish a local experiment station, under the charge of the Ontario Fruit Growers' Association with the especial object of testing new fruits originating in Ontario, and the keeping of living samples to aid in identification of them in connection with the proposed plant register?

Mr. A. M. SMITH.—This is not a question of my asking, but it is one in which I feel a deep interest. I think the time has arrived when something of this kind is needed. Of course we have the experimental farms at Guelph and at Ottawa, which are able to do good work in the way of testing grains and many other food products, but they are both so far out of the fruit belt that our tender varieties of fruits cannot be properly tested at either of these points, and we all know that we have to spend a good deal of our hard earned money in testing new fruits for ourselves. We often have varieties introduced to us by interested parties which turn out to be valueless. Therefore I think it is important that we should have a fruit station in southern Ontario where proper tests can be made of all tender varieties of fruits, so that in making our selections we can have something of value to rely upon. Some of us who visited the Experimental Farm at Ottawa last year were astonished to see the results of the experiments there made in the production of raspberries. I am confident that new varieties have been produced there which will supersede most of our raspberries now grown. Other countries are adopting this plan of establishing branch experimental stations where special tests can be carried on, and I do not see why we should not have something of that kind here in southern Ontario.

Mr. JAMES GOLDIE.—If this Association takes up this question I think we should agitate it until something is accomplished. If it is to be an experimental station I think it should not be confined exclusively to fruit. I would advocate testing also a few varieties of vegetables, as is done across the line.

Mr. P. C. DEMPSEY.—There is not the slightest question in my mind that an experimental station, situated somewhere on this southern peninsula, would pay the country well. It is true experimenting with new fruits is carried on to a great extent at Ottawa and Guelph, but both of these places have very severe climates, whereas the climate of this southern belt is well adapted to fruit culture. I would like to see a small experimental station for the purpose of experimenting on horticultural products established near Niagara, and I believe the Government owns land in that neighborhood, so that would cost nothing. I would like to see it include fruits, flowers and vegetables. The expense would amount to little compared with the advantages our farmers would derive from it.

The subject was, on motion, referred to the legislation committee and in addition, to a special committee consisting of Messrs. A. H. Pettit, A. M. Smith, W. E. Wellington, L. Woolverton, and such other names as the committee chose to add.

WINTER APPLES.—STILL ONE OTHER VARIETY NEEDED.

Mr. D. Nichol (Cataraqui) read the following paper on the subject :

I would speak of the apple because of all fruits it is by far the most important. It is the best and most useful fruit that man has been blessed with by his Creator.

Of varieties we have now several thousands too many, and I am sure to most minds in this part of the province, the idea that we still need another must seem absurd. In this and some other favored localities all the choicest known varieties of good shipping apples can be successfully grown. Such a thing as tender varieties of apples is scarcely even thought of, and I dare say there is no particular desire for any more new varieties ; but as this Association is calculated to benefit the whole province I would remind its members that in by far the greater habitable part of Ontario, only a few of the popular sorts of apples can be grown with profit.

There is nowhere any lack of hardy summer varieties, and of fall sorts we have far more than enough, so in regard to them I have nothing to say on this occasion except that in my part of the country the markets at these seasons are generally glutted with apples. Yet we do not possess a long-keeping, hardy kind of first-class quality and good appearance, well suited for shipping to distant markets in the spring.

The Spy is everything that can be desired as regards the quality, but with us the tree is not enduring enough. Just about the time it begins to bear it begins to die, and moreover, the fruit is too subject to the spot disease. The Baldwin, King and R. I. Greening are more tender than the Spy. The Ribston Pippin, Hubbardston's Nonsuch and Wagener are superb apples of their class, but are not hardy enough for our northern climate. The Golden Russet endures our hard climate very well. No apple stands the hardships of shipping better, but the fruit is apt to be too small, and is hardly attractive enough for the British market. The Swazie Pomme Grise tree is hardy and the fruit is of good quality, but its smallness of size is an objection. The Pewaukee is hardy, the fruit is of good quality and of fine appearance, but does not keep long enough. The Ben. Davis is a hardy tree and a great bearer of handsome fruit, but its coarse quality is seriously injuring the character of Canadian apples in foreign markets. The Talman Sweet tree is one of the hardiest, a good bearer of long-keeping clean fruit, but the supply of it seems to have exceeded the demand. Sweet apples of any kind are hardly salable now in our eastern home markets.

I think, however, the time will soon come when they will be much more valuable for canning purposes, both at home and abroad.

At present, however, one great need is a generally good shipping apple. The markets of the world offer great inducements for such. The tree should be hardy as the Duchess of Oldenburg, and somewhat of the habit of the Talman, because, be it observed, the Talman seldom splits at the crotches ; it branches out at nearly right angles with the trunk, in contra-distinction from the Spy and the Mann of upright growth which necessitates a deal of thinning out, to prevent a too dense foliage ; and much pruning of large trees generally shortens their life. The quality of the fruit should be nearly equal to that of the Spy,—it should also be nearly as hardy as the G. Russet, as free from spot, scab, and crookedness as the Ben Davis, and as independent of the codling moth as the Canada Red, and keep well until the month of July. Doubtless some will say this is an impossibility, but such a conclusion is without reason. I think by crossing the Golden Russet with the Duchess of Oldenburgh such a fruit may be obtained, and the individual who will take the trouble to produce it will be entitled to the praise and gratitude of all mankind as well as the certainty of ample pecuniary remuneration. Here a fine field of experiment is open to enterprising young men. The low price of some farm products, with the higher cost of labor, has rendered farming in Ontario somewhat less remunerative than it has formerly been, hence it behoves land-owners generally to look out for something which can be produced with profit. Such an apple as I have here described would be quite as staple an article of food as wheat or cheese, and for many generations there would be no danger of overstocking the market with it.

Mr ALLAN.—Of course we all feel that the number of varieties already grown in the country is too large, yet I would not by any means say that we do not want more, for we do. We want to improve; there is room for improvement, and consequently there is room for more varieties yet, for all the seasons. I do not think Mr. Nichol meant to say that the Pewaukee does not come in a proper season for shipping; for its season, there is no better apple. It is a fine grower and a good bearer, and can be well recommended for any section of Ontario. But we especially need, as Mr. Nichol says, an apple of high quality for a little longer keeping. The Roxbury Russet, of course, lasts long, but is not of sufficiently high quality to meet all the requirements, and would not be hardy enough for our northern districts. There is no doubt that if size, color, and quality can be combined in a hardy, long-keeping apple, we should have an excellent fruit for the market. There is, for instance, the Ben Davis, which is a fine shipper, is of fine appearance and of good quality, if you cannot get anything else; but in that as in other varieties, you find variations according to the soil. It is a good cooker and arrives in a foreign market in good order and looks well. In the British market especially good looks go a long way, because there the people are not as well posted on apples as we are here. But for dessert I would brand the Ben Davis very low. The general demand is for an apple which has both qualities combined, cooking and eating.

Mr. G. C. CASTON.—I consider the Golden Russet one of the best long-keepers we have; and in the month of May, when it becomes mellow, I do not know that you could find a better eating apple, and as to size, in my part of the country I do not hear any complaint of it. It is a shy bearer, but it bears very well when it once starts. Then it is free from the codling moth. I consider it one of our best long-keepers.

Mr. NICHOL.—But it will not bring a good price in the British market.

Mr. CASTON.—It may be sent to the British market before it is in suitable condition. It should be sent very late.

Mr. P. C. DEMPSEY.—Out of some hundred seedlings I got one, the Trenton, which I think, is going to stand near to the Duchess of Oldenburgh. When some years ago I saw the Canadian Baldwin first I thought that was going to fill the bill, and the first samples pleased me very much. They suited my taste, the colors were brilliant, and the size was all we could desire. But in the last few years I have not been able to get one specimen worth picking up. There is another apple which I looked upon as very superior, and it has not gone back on me yet; that is the Winter St. Lawrence, which is a good thrifty grower, attains a large size, and keeps all winter. It does not yield so abundantly as the Pewaukee and some other varieties, but if the spot does not take possession of it I look upon it as a coming apple. The nearest variety we have, however, to filling the bill is the Ontario. In our section, and wherever I have been, the Ontario is turning out to be one of the most profitable winter apples we can cultivate. With respect to keeping apples for spring shipments, with a fruit cellar properly constructed with air chambers and good sawdust walls, and so arranged as to catch the cold air and bottle it in, as it were, there should be no difficulty in keeping even the Duchess of Oldenburgh till the spring. There is only one difficulty in the way that I can see. I have had some experience with refrigerators, and I have found that when the apples are taken out of the cold atmosphere in which they have remained all winter and shipped in the spring, they condense so much moisture that the water will drop right out of the barrel, and in five or six days they will rot; but if you leave them exposed to the air long enough to get used to the change of temperature before packing them, you can then ship them without difficulty. There is no danger in a temperature of 35 or 40 degrees, and this you can get by leaving the windows open at night, and closing them tightly in the morning.

Mr. W. E. WELLINGTON.—Mr. Dempsey's remarks regarding the Canada Baldwin only demonstrate how different fruits will be affected in different sections; where one will succeed perfectly another will fail. For three years I have had samples of Canada Baldwin sent to me from the Province of Quebec, where they were grown, and they have been entirely free from spot, their size has been uniform and their color high, and the report is that they crop well. They would certainly be a splendid apple for shipment to the English market, and I should judge from their appearance that they would keep easily

until the spring. I would advise Mr. Nichol to add that variety to his list. There is another apple, which is not a late keeper, and which, I should judge, in the neighborhood of Kingston, would be called an early winter or fall apple, that is the Red Bietigheimer, a German apple. There is no other apple which makes such a fine, showy appearance, and its quality is good. I have also had samples of the Winter St. Lawrence for three years. This season it disappointed me. The samples were quite ripe when they reached me about a week ago, and although the quality is very good it is not an apple I would recommend for a winter apple in the west. In Quebec it is an early winter apple, and I think it is valuable in cold sections.

Mr. JOHN CRAIG.—With regard to the Canada Baldwin, I happen to know the original trees very well. This variety originated at Abbotsford, Quebec, and the original trees are now twenty-five or thirty years of age. They have been failing recently, however. The trouble has been with the bark splitting; as soon as that takes place the fruit becomes spotted. Some years ago the Canada Baldwin was grown very largely there, and being a good winter apple was extensively propagated, but it will not be propagated there in future. With regard to the Winter St. Lawrence, so far as I know the tree is perfectly hardy and the fruit is of good quality. I have received specimens of the Renaud Seedling at Ottawa, and it has impressed me very favorably. It has been there two years, and after two winter's exposure it appears to be perfectly hardy in every respect. I think it is being tested in other locations.

HARDY ORNAMENTAL TREES AND SHRUBS FOR THE LAWN.

Mr. James GOLDIE (Guelph) read the following paper on this subject:

At the request of the Secretary I have prepared a short paper on some trees and shrubs suitable for the lawn and shrubbery, and that have proved hardy with me. During the past few years I have experimented with a large number of species, more particularly with the Coniferæ and other evergreens, and I must confess to having many failures, Still there are a good many varieties that are quite hardy and well worthy of cultivation. It is often a matter of surprise to me that so many people continue to plant their small lawns and front yards with very unsuitable things. Often Norway Spruces, Austrian or Scotch Pines are set in small yards, and as they grow too large, they have to be reduced by cutting at the expense of all their natural beauty. It would be much better, in the first place, to plant only such things as are suitable for small grounds and then to allow them to grow as nature intended they should, without disfiguring them by clipping.

There are several varieties of the common Arbor Vitæ, also dwarf varieties of the Norway Spruce, and other spruces and pines, as well as varieties of the Liiac, and various shrubs that are far better fitted for the ordinary lawn, or door yard, than the larger trees that are often planted. There is a great want in Canada of broad-leaved evergreens. We are absolutely without anything like the Laurel, the Bay, the Holly, the Rhododendron and many others which add so much to the beauty of the parks and lawns of Britain. The Canadian winters are too severe for any of these things to succeed here.

The Rhododendron, some varieties of them at least, would stand the winter's cold, but unfortunately they are a family of plants that will not grow on limestone soil. Wherever there is a limestone formation, neither the Rhododendron nor the fine Hybrid Azaleas will do any good. I have planted at least two thousand Rhododendrons during the past few years, and now have only about a dozen plants left and these are in a half-dying condition. The only shrub we have of the broad-leaved character, is the Mahonia Aquifolia, the Holly-leaved Barberry. This makes a very pretty bed, if planted in a shady place or under trees. It is badly browned in winter, where it is exposed to the sun, being a native of the Pacific side of the continent. It, like most natives of Oregon and British Columbia, thrives best in a moist climate, and a shady situation. One of the prettiest evergreens that I have for beds, or for planting singly, is the common native Yew, the

Taxus baccata var. Canadensis, commonly called by the country people "Ground Hemlock." This is a most useful shrub and very pretty. It thrives best in moist soil and in a shady situation. It does well planted in a rockery, and, if the soil is good, grows to quite a size. One of the finest lawn trees I have is the Colorado Blue Spruce. They vary in color a good deal. A well-grown specimen of good color is one of the finest of the Coniferæ for ornamental purposes. It is also one of the hardiest. *Picea concolor* is also a fine hardy species. The only fault it has is its early growth in spring, which sometimes gets cut off by late frosts.

Pinus Cembra is a compact growing ornamental species somewhat of the character of the common White Pine.

Pinus Mugho and Pinus Pumilio are of dwarf growth, only suitable for small grounds, or rockeries. The Norway Spruce, Austrian and Scotch Pine are too well known to need any description. They are only suitable for large places or where required for shelter. All are beautiful, but the Spruce and Austrian are much the finest. Some dwarf varieties of the Norway Spruce are very interesting, compact in growth and only a foot or two in height. The Juniper family has some very useful varieties. I have nothing in my grounds that pleases me better than some specimens of the Red Cedar, so called Juniperus Virginiana. When grown singly and branched to the ground they are very pretty. For a rock-work or small bed there is nothing prettier thaa Juniperus Squamata. This I believe is a Himalayan species, but, though a native of India, is quite hardy.

The common Savin, Juniperus Sabina, and its variety Tamariscifolia are both hardy and useful. The Retinosporas are another family of very ornamental small trees. There are many varieties of them but some are of doubtful hardiness here. They require a good deal of moisture in the growing season, and are all worthy of further trial. A very curious and ornamental tree is the Sciadopitys Verticillata, or Umbrella Pine of Japan. It stands the cold winter perfectly, but my plants of it were grafted ones, and like all the Coniferæ when grafted, seldom do any good. Too many of the rarer ornamentals, both deciduous and evergreen are propagated by grafting. Very few of them ever thrive as well as seedlings, the Coniferæ particularly. Some years ago I got a collection of all the finest varieties of Lilacs paying a high price for them. They proved to be grafted on the common Privet, and within two years they were all dead, killed by borers in the stock. Had they been on their own roots they would undoubtedly be living now. Wherever it is possible get trees on their own roots. A collection of Lilacs when in flower makes a grand show, nothing in the garden finer. Several varieties of Birch make good lawn trees. The well known cut-leaved weeping one is perhaps one of the finest trees we have. Very few Magnolias will stand our winters. The only ones I have are Acuminatæ and Hallii, both standing hardy. Among the failures I may mention all the varieties of the Beech, the Maiden Hair tree (*Salisburia adiantifolia*), Cornus Florida, Liquid Amber (or Sweet Gum), Japan Maples, and many other things of which I have not a record by me. Most of them will live but it is only a miserable kind of existence, our winters proving too hard for them. In speaking of these failures it must be remembered that the climate of the Guelph district is a very hard one on all tender vegetation. While all of these are unsuited to it, they will undoubtedly do well in the milder districts of Ontario.

I beg to say before closing that it is of great importance to prepare the ground well before planting. Have it well trenched, or ploughed, where the trees are to stand, so that their roots may have every chance to get well down into the ground. They will thereby stand the drought of summer and the cold of winter much better than by a slip-shod manner of planting. The more tender things should be well protected for several winters after planting. After the roots get well established there is little danger of their being injured. In the early days of the Agricultural College of Ontario, a good commencement was made in the testing of both native and foreign trees. It is to be hoped that the Government may see their way to continue the good work which has stood in abeyance so long. Prof. Saunders, at the head of the Dominion Experimental Farms, is doing well in this direction by testing fruit and forest trees and shrubs both useful and ornamental. As this paper is already too

long I will only add a list of such things as I have growing on my grounds, and such as are likely to succeed, even in the cold north of Ontario. Many more after trial I have discarded, being either too tender or not standing the extreme dry summers we have sometimes. The grounds being underlaid with limestone rock, moisture loving things are liable to suffer very much. Yet while they do not succeed with me, they might prove fairly satisfactory in a more suitable situation. It is a matter of regret that the severity of our climate prevents the growth of many things of great ornamental value, but it is to be hoped that more attention may be given in the future to the testing of the newer introductions by those having a taste for these matters and having suitable grounds for the purpose.

Abies Alcoquiana
" Canadensis
" Cilicia
" concolor
" Douglasii
" Englemanii or pungens
" Hudsonica
" Japonica
" Nordmaniana (tender)
" Orientalis
" Pichta or Siberica
" Polita
Pinus Cembra
" Austriaca
" montana or pumilio
" strobus
" sylvestris
Thuja Occidentalis varieties
" " Aurea
Thuja Occidentalis, Douglas Golden
" " Gem
" " Globosa
" " Lutea
" " Fern-leaved
" " Vervaneana
Cupressus Nutkaensis compacta
Juniperus Canadensis
" communis
" Chinensis
" hemisphericæ
" Sabina
" Suicica
" squamata
" procumbens
" Virginiana
Retinispora obtusa and plumosa
Taxus Canadensis
" adpressa (tender)

THE INSPECTION OF FRUIT.

Mr. A. H Pettit, from the committee appointed on the inspection of fruit, reported the following resolution :

Resolved, That we believe a system of inspection to be in the best interests of the fruit growers, shippers and consumers for such fruits as are shipped in barrels and closed packages into the cities and towns and for exportation to foreign countries, and that the Government be requested to appoint Inspectors for that purpose.

A. McD. ALLAN, Chairman.

Mr. PETTIT.—If this plan is carried out, it will enable the fruit grower to do business in a systematic way. It will enable him to enter into contracts with persons in this country or in a foreign country to supply them with fruits of a certain class, inspected and graded No. 1, No. 2 or No. 3, as the case may be. Then the purchaser will have something to depend upon, which he has not at present. Let a standard be fixed, in accordance with the quality of our fruit, and it will be the means of establishing a name for it in the British market that will add millions to the profits of Canadian fruit growers.

Mr. A. McD. ALLAN.—I second the report and what Mr. Pettit has said upon it. Something of this kind is absolutely necessary, because it is well known that fruits are being shipped to the old country market which should not appear there, and which are gaining for this country a very bad name. We have established the reputation of producing the best apples in the world, and we are able, if true to ourselves, to maintain that reputation fairly, squarely and honestly in any market we enter. But in order to do that, we should have our fruit so graded and so guaranteed that purchasers will have perfect assurance of the quality they are getting, and I can think of no other way of doing this properly than by a regular system of inspection ; and a government that appoints inspectors for grain, hides and other commodities, ought to be willing to appoint them for fruits.

Mr. E. D. SMITH (Winona).—I consider this a very important question. Suppose I sell to a man in Ottawa, a carload of apples as first-class. After they are shipped the price goes down, and when they arrive, the purchaser, wishing a reduction, asserts that they are not first class. It is very difficult for me to prove that they are; but if they were branded as first class at the station, I could sell them on that brand, and the purchaser would have no excuse.

CULLING FRUIT FROM THE TREE.

QUESTION:—Will it pay to cull fruit early in the season from the tree?

Mr. J. K. MCMICHAEL (Waterford).—I have had some experience in this matter, more particularly last season. I observed quite early in the spring that a fungus had attacked a good many of the pears, both the fruit and the foliage. About the first of July I took a step ladder and a pair of sheep shears, and went through the pear orchard, removing on an average half the fruit—all the culls and such fruit as was spotted. I went over the whole orchard very carefully, and the appearance of the trees and the growth of the fruit in a week or two afterwards was remarkable; and in the fall, at the time of picking, the fruit made a very fine show. If I had not culled it, at the time the fungus appeared on the tree, the fruit would have been nearly worthless. For my Bartletts, No. 1, I received $2.10 a bushel wholesale, and if I had not culled them, it is probable that I would not have received much over half that price. The expense of this operation is not great. It is astonishing how soon one can go over an orchard. My conviction is that it pays very well.

The SECRETARY.—I always make a practice of culling my pears on the trees, particularly Bartletts. I go over the orchard early in the season, while the fruit is still small, and remove all scabby and poorly grown fruit; and when the fruit is approaching ripeness, and attains such a size that it is possible to market it, I then go over the trees again, taking off everything that has worm holes or other imperfections, and ship it away as premature or second class fruit, and I often find that fruit will sell at that time, which would not sell when the principal crop is ready for market. The result is that I have a first class lot of pears left to ripen on the trees, fit to put up in baskets or to ship to order, and such as is a pleasure to handle, in every way. I believe it would pay well to practice this method of culling to a larger extent than we have ever done. At the same time it will not do away with the need of selecting our fruit when we are putting it up for sale.

Mr. A. MCD. ALLAN.—The Secretary's last remark suggests a point that is worthy of the attention of all fruit growers. A certain kind of culling can be done with very great advantage after the fruit has been picked. Those little half grown or quarter grown apples which are left on the trees should, I think, in all cases be picked off and destroyed. I fancy they are breeders of fungus diseases, and it would be well to have the trees stripped perfectly bare of everything of that sort.

Mr. F. G. H. PATTISON.—I should like to corroborate the statements of the Secretary and Mr. McMichael. I think the culling of fruit should, wherever possible, be carried on to a greater extent than it is. Indeed, if you spray your plums, this is absolutely necessary in the case of a certain kind. Last summer I had a few trees of Lombards which had been sprayed, and which were heavily laden with fruit; I culled the trees once or twice with great advantage to the fruit both as to size and appearance. So I can testify to the value of this system, not only for apples and pears, but for plums also; and I fancy the same can be said of peaches.

Mr. N. J. CLINTON.—I would like some gentleman present to inform me whether in his opinion, there is anything gained in making two pickings of Bartlett pears; that is, is it advisable to go over the orchard when the fruit is arriving at maturity and select the largest ones, and leave the others on the trees for a while longer.

The SECRETARY.—I always follow that practice, not only twice, but three or four times, gathering the pears as they ripen, just as we do in the case of peaches, and at the time when the fruit has its best color and is in the primest condition for market. By

this means it is possible to extend the season of shipping our Bartlett pears for several weeks, and we not only get the best prices for the early fruits, but for the green specimens which we leave on the trees until they can command the higher prices of the later market. In that way we get the large prices prevailing at both ends of the season. I think it is a great mistake to pick the whole crop of Bartlett pears at any one time. If they are gathered when they are quite green, they will ripen. You can ripen a Bartlett pear after it is half grown.

REPORT OF FRUIT COMMITTEE.

Mr. John CRAIG presented the following report of the Fruit Committee:

The Committee on Fruit beg to report as follows:

D. Nichol, Cataraqui, exhibits the following: A magnificent, highly coloured, large sized, conical specimen, somewhat resembling Red Canada in outward marking, but more conical in form, and more mellow and highly flavored. Somewhat lacking in sprightliness and juice; a fine keeper and evidently a good shipper, and if tree is hardy, altogether a valuable apple for the district from which exhibited.

SEEDLING APPLE, locally named MALLORY.—In color strongly resembling Louise, although in form more flat; cavity and basin fairly deep, the latter corrugated, close; color, yellow with bright carmine blush; flesh, white and in quality much resembling Fameuse, to which it would seem to be related. Attractive, about season of Fameuse, and would seem to be a good early market sort.

SEEDLING APPLE—GIBSON.—Said to be hardy; flat, large, strongly resembles Black Detroit in color and in flavor. In character of flesh, the Wine Sap. Rather too tender to make a good shipper, but might be profitable for near market. Mr. Nichol's apples give evidence of good cultivation and thrifty trees.

SEEDLING APPLE—PARROTT.—Medium, round conical, greenish, covered with red, on the sunny side with light red, cavity wide, basin deep, calyx open; evidently a good keeper and shipper. Unless the tree is extra hardy it could scarcely be commended for extensive propagation.

E. C. FEARNSIDE, Hamilton.—Plate of Talman Sweet, plate of Glout Morceau pear, plate of Easter Beurre and Lawrence, plate of Winter Nelis.

G. C. CASTON, Craighurst.—Exhibits fine specimens of Haas, fair specimens of Wealthy, extra fine specimens of Pewaukee.

P. C. DEMPSEY, Albury.—Exhibits magnificent specimen of Pewaukee.

P. C. DEMPSEY—SEEDLING.—Large, yellow, round, cavity deep, irregular, with the peculiar sutuse of Talman Sweet; flesh, greenish-white; flavor, juicy and aromatic, but lacks character.

S. D. WILLARD, Geneva, N.Y.—Exbibits fine specimens of that queen of winter pears, Josephine de Malines, and the thanks of the Society are due to Mr. Willard for the interest he shows in our meetings as shown by his presence and exhibit of fruit.

GEO. JOHNSON, 350 Jefferston Street.—Sends in three specimens of pears, which are Beurre d'Anjou.

Collection of apples grown in township of Morris, Huron county, exhibited by A. M. Smith. Specimens: King, Blenheim Orange, Northern Spy, Golden Russet, and one apple for a name, greenish-white, sweet, but would not seem worthy of cultivation unless as a keeper.

HENDERSON—SEEDLING—Medium size, early winter, but nothing striking in character.

GRAPES—Exhibited by M. PETTIT, Winona.—Vergennes, well presserved and magnificent bunches; Catawba, in finest condition as to ripening and preservation, and the attention of this Association is called to the fact of these grapes being so well ripened in the Niagara District. Rogers' 43, Barry; Rogers' 4, Wilder; Rogers' 44, Herbert; Rogers' 36, Aminia; Rogers' No. 1, Goethe; Lady Washington; Centennial, a grape of the Deleware type, not so valuable; Concord; Champion; Moyer, too small; Niagara; Iona, very fine; Rogers' 39; Isabella; Dracut Amber, very foxy; Prentiss; Rogers' 13, Agawam; Rogers' 15, Agawam; Pocklington; Jefferson; Rogers' 41, Essex; Rogers' 28; Empire State, small bunch.

HENRY KRONSTEIN, Hamilton.—Fine plate of Vergennes.

A sample of apples was exhibited to illustrate country packing and the facility with which the small and inferior apples find their way to the centre of the barrels.

ALEX. McD. ALLAN,
JOHN CRAIG.

On motion, the report was received and ordered to be printed in the proceedings.

OTTAWA EXPERIMENTAL FARM.

The Secretary presented the following report of the committee appointed by the Association to visit the Experimental Farm at Ottawa, in response to the request of the Director of that institution :

Your committee appointed to examine the fruits then in season at the Central Experimental Farm at Ottawa, beg leave to report that they visited it on the 22nd of July, 1890, the day appointed by Professor Saunders. We first examined a large plot of nearly all the standard varieties of raspberries in cultivation, and found many of them succeeding admirably. We then went to a plot adjoining, where there were several hundred varieties of new seedlings and hybrids ; we carefully compared them with the tested varieties and found many which we think in many points, such as earliness, hardiness, productiveness, render them superior to those now cultivated, and we have recommended them for further trial, propagation and dissemination. We also found many currants and gooseberries which we consider an improvement on the standard sorts from which they originated.

Committee. { A. M. Smith,
P. C. Dempsey,
P. E. Bucke,

On motion, the report was received and ordered to be printed in the proceedings.

HARDY APPLES.

Mr. G. C. Caston (Craighurst) gave the following address on the subject of hardy apples for the north and for export :

The question of obtaining hardy varieties of apples which are clear-skinned and altogether free from fungus scab, and at the same time of such a size and quality, as to be fit for export, is a very important one. I do not know why it is that the fungus scab has so severely attacked some of our old varieties. In our section, the Snow Apple used to be one of the finest apples we could grow, but it became so generally attacked by the fungus scab that other varieties have had to take its place. This fall the Snow Apple trees were the most heavily loaded, but it was almost impossible to find a specimen free from the scab. That destroys the market value of the apple. Some of the newer varieties, such as the Duchess, are entirely free from this defect ; I am not aware that our scientific men have told us the reason.

Now, in speaking of the varieties I recommend, I refer primarily to the county of Simcoe, though I think my remarks will apply to other counties as well, because there is no place where the climate varies so much as in this province, owing probably to its geographical position and the influence of the lakes. The counties bordering on the lakes are the most favored fruit districts, while in the north-western, or inland counties, it is difficult to grow anything but the most hardy varieties. To begin with summer apples, I would recommend only one variety, that is, the Yellow Transparent. I cannot speak from experience of it as yet, because it is just beginning to bear in our neighborhood, but I have great hopes of the trees, which have a healthy, dark-green foliage, which is an evidence that they are going to succeed. The only objection I have to it is its color ; I would prefer a red apple. The Early Harvest I would not recommend, nor would I plant the Astrachan any more. It is hardy with us, but it is a short-lived tree, and the fruit is subject to the fungus scab and is uneven in ripening ; on the same tree you will find apples very green, and others dead ripe, and, when ripe, they will not keep more than two or three days, and will not stand transportation. The Yellow Transparent is the only one I would recommend, and that for the home market. As an early fall apple, the Duchess is the very hardiest variety we have. It is not fully ripe till well on in September, although it is fit to market before then. Besides being hardy, it comes

into bearing about the earliest, and is the most productive of all, and, from recent events, I have reason to hope that good summer and fall apples, like the Duchess, will be the most profitable that we can grow. I believe the time will come soon when they can be placed on the British market in good shape, and, if so, a demand will be created for all we can grow. I know that this year the Duchess was sent to the British market, put up in fancy cases, and as the fruit reached there in good condition it realised fancy prices. Of course that was only an experiment, but if the steamship companies will supply the right kind of storage, I have every confidence that that trade will grow to large proportions. When a man asks me whether I think an orchard would succeed in a certain locality or not, I always tell him, "Try the Duchess, and if that does not succeed you need not try anything else." Another fall variety that succeeds very well with us, is the Alexander. Then, I think the Red Bietigheimer is going to be successful. It is a large, clear-skinned variety, and has a healthy foliage. I have been told that it has the fault of dropping from the tree before maturity, but I cannot speak as to that myself. The Haas, or Fall Queen, is a great bearer, and I think quite as hardy as the Duchess; it is quite free from scab, and although I do not call it a first class apple as to quality, yet I would recommend it as a good cooker, and for dessert ahead of the Ben Davis. I think it could be got to the British market in good condition. That completes the list of fall apples. I might mention the St. Lawrence, which is one of the finest dessert apples we have, but unfortunately the fungus scab makes deep cracks in it, and spoils it for market. Coming to the winter varieties, I would mention first the Wealthy. New beginners need not be afraid to plant plenty of this variety, whether they intend to grow for the home market or for export. The fruit is perfectly clean-skinned and of high quality, and is well fitted to take the place of our old favorite, the Snow, besides, it will keep longer than the Snow. I find that the farther north you can produce an apple, the longer it will keep. In some parts the Wealthy would be classed as a fall apple, but with us it is decidedly a winter apple. I am satisfied that it will take well with the Britishers; it has that fine, crisp flavor that they like. Mr. Shepherd reported at the Ottawa meeting that he shipped it extensively, in cases similar to egg cases, having little square compartments into which the apples fit separately, and they brought a price equivalent to $6 a barrel, net. This apple is equal to the Duchess in hardiness, is an early and prodigious bearer, and does not produce many culls. Next, I come to the Pewaukee, which originated somewhere in the North Western States, and is said to have been grown from the seed of the Duchess. It has all the hardy quality of the Duchess, is a good cooker and is very fair for dessert; it is free from the scab. With proper storage there should be no difficulty in keeping it till the latter part of March, or perhaps till April. I think it would meet with favor in the British market. The next variety I would mention is the Golden Russet. Mr. Nichol to-day spoke of it as being too small, and as not taking well in the Old Country. Well, if you try to eat a russet too soon, you will perhaps not care for it; it does not get its best flavor till spring, and as a long-keeping variety I do not think we have anything to beat it. The tree is comparatively hardy, and as it is a shy bearer at first, it needs to be considerably pruned; then, when it starts, it will produce very well. The apple is not subject to scab, and is free from the codling moth. We have another apple in our district, called the Scot's Winter, a kind of a green russet on one side and with a red cheek on the other; it is perfectly hardy, and keeps till the spring. We have another, a large red apple, known under three different names—Baxter, Larue and Red Pound. It grows very large; it is not of first class quality for dessert, but is a fine cooking apple, and one of our best varieties for the local market. It will keep in good condition till February. I think I obtained for it the best price of any I had, but this year it was badly spotted for the first time. I do not know what to say about the Ben Davis. In our district I would call it about half hardy. Up to the severe winter of 1884-5, there were several varieties which we considered perfectly hardy, but which we are unable to so regard now. That winter took all my Ben Davis trees, and left me nothing but some top grafts on seedlings. Those which were not killed outright were so damaged in the crotch that they died afterwards. Even a good many of the Golden Russets were killed, but the Duchess and some of the other hardy varieties I have mentioned were not injured at

all. The Ben Davis is a great producer, however, and if you graft it on a seedling, or a scab, you will get a great stock of fruit. I would advise anybody in that section of the country to plant a number of hardy stocks, and when they get large enough for grafting into the top limbs, you can grow on them almost any variety you wish. The King of Tompkins County was planted in our district a few years ago, but now I doubt if you could find one in the county of Simcoe; but it does very well grafted on a hardy tree. The same rule applies to plums; the best way to grow tender varieties in cold sections of the country is to graft them on hardy seedlings. With regard to nursery trees, the greater number of those offered for sale in our section of the country are brought from the other side of the line, and I think we ought to patronise our own nurserymen more than we do. I have a very friendly feeling towards the Americans, but at the same time I think we ought to patronise our own nurserymen. I have no interest in any nursery, directly or indirectly, I merely speak according to what I think would pay our people best.

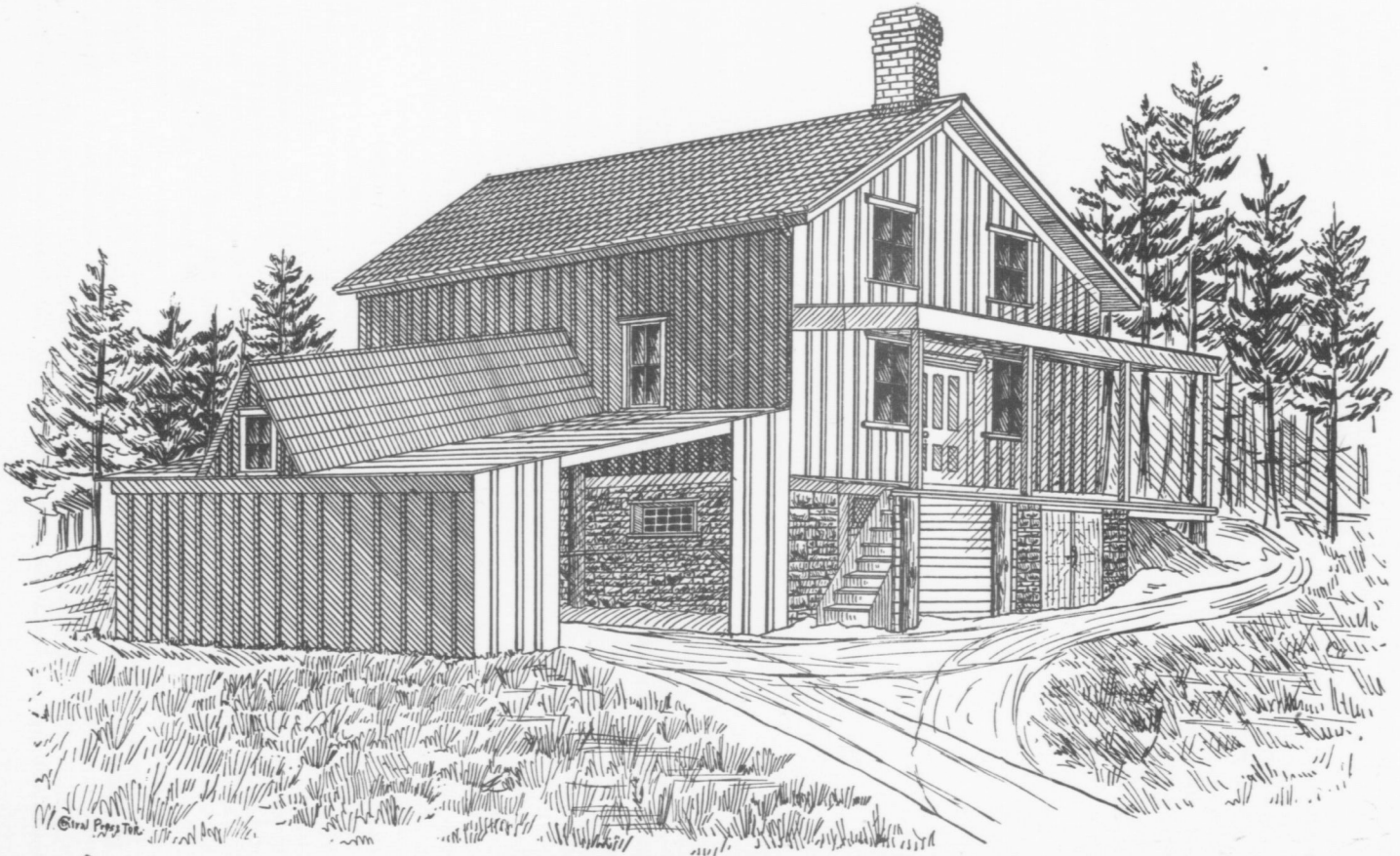
Mr. DEMPSEY.—Respecting the Pewaukee, the tree comes into bearing very early, and as it becomes of age the fruit becomes more certain and larger, attaining double the size it shows when it first begins to bear.

Mr. HOLTON.—Can any gentleman tell me about the McIntosh Red?

Mr. NICHOL.—It is as hardy as the Wealthy, and is an excellent dessert apple at this time of the year. But I do not recommend it, because it is slightly subject to the spot. It is not nearly so bad as the Fameuse, but I dread the disease getting worse, and for that reason I am not planting it extensively.

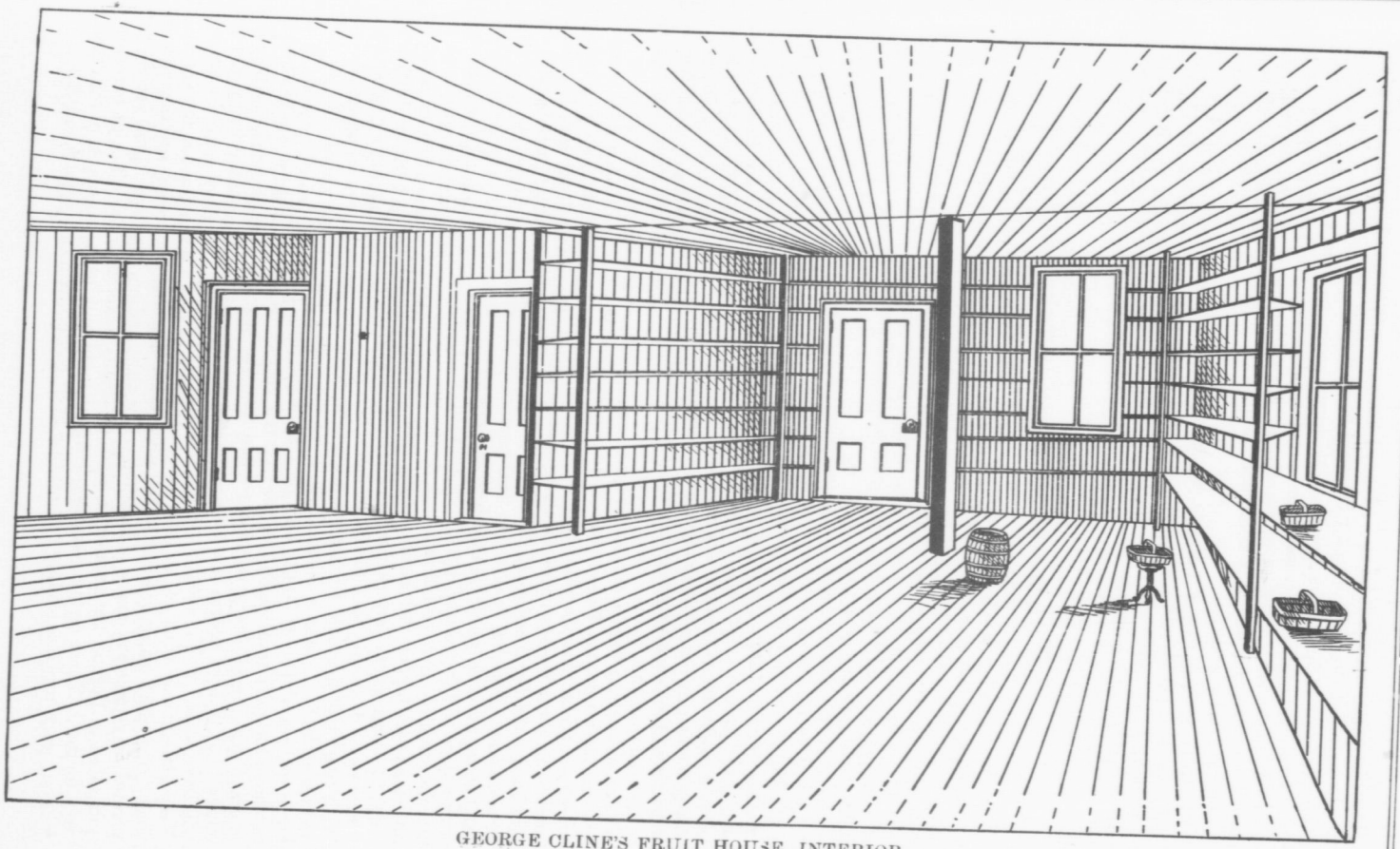
THE FRUIT GROWER'S PACKING HOUSE.

Mr. GEORGE CLINE (Winona) delivered the following address on this subject: I have been building a new packing house on the cold storage system, of which I have been requested to make a drawing and give an explanation. In the first place, I would locate the building on a gentle slope. The site of my packing house slopes to the north. The easterly side is a foot and a half in the ground, and the other side is about six and a half feet in the ground. The wall is eighteen inches thick, built of common limestone. The floor of the cellar has about eight inches of gravel, with two coats of cement to make a smooth, hard floor. The ceiling of the cellar is lined with inch boards, and is plastered with an inch of mortar on the top between the joists. On the top of that is a two-inch matched floor. The sides of the building are five inches thick, boarded up and down, with the cracks battened, and with two thicknesses of tar paper under the sidings. The inside is not finished yet, but my intention is to have two thicknesses of tar paper under a lining of matched stuff, and to have the ceiling lined in the same way. The upper floor is made of matched stuff with tar paper beneath, and the upper story will be lathed and plastered. With just one thickness of tar paper, we found the building very cool this fall, much cooler than I had anticipated, and our pears were kept there in very good condition. On the east side of the building I have provided a driving-shed, into which we drive our waggons, and deliver the fruit to the packing house by a door opening from the shed. This shed is eight feet by thirty-six feet, and the main building is twenty-four feet by thirty-six feet. The first story above the cellar or basement is eight feet high, and the second story five feet high to the roof. Inside the building I have a small office in the north-east corner, and the rest will be fitted up with shelves between the windows and doors, capable of holding six and a half tons of grapes around the sides of the building, leaving the main body of the floor free for the packing of barrels or storage. The shelves will be thirty-two inches wide, and will hold two ten-pound baskets end ways. I have no ventilation other than through the windows. In warm weather the fruit can be put in the cold storage chamber in the cool of the evening. The outside shed will be very cool.



GEORGE CLINE'S FRUIT HOUSE, EXTERIOR.

GEORGE CLINE'S FRUIT HOUSE, EXTERIOR.



GEORGE CLINE'S FRUIT HOUSE, INTERIOR.

The three floors are connected by stairways. I have not put in anything to carry off the gases. I should like to know whether it would be necessary.

Mr. PATTISON.—Mr. T. T. Lyon, of Michigan, will give you information on that point if you write to him. He read a paper on the subject to us at Windsor last year, in which he recommended a system of ventilation for cold storage. He said opening the windows had been tried, but it was not successful. He suggested something in the way of an underground passage.

Mr. E. D. SMITH.—Mr. Cline raised the question as to whether the temperature of the building would change. My experience is that, without ventilation in the building, the heat of the fruit itself will raise the temperature 10 degrees ; so that ventilation is a matter of the utmost importance.

GRAPE GROWING IN ONTARIO.

Mr. M. PETTIT.—When our Secretary asked me to contribute something towards the programme of this meeting I selected this subject. My reason for doing so was that I had sent out a list of questions to nearly all the grape growers of Ontario with the view of obtaining material for something like a history of grape growing in the province, but the returns were so imperfect from some of the counties that at the last moment I abandoned the project, and I have just written a brief paper on the general subject in order to fill my place on the programme.

Grape growing in Ontario is comparatively a new industry, but it has increased more rapidly and with more satisfactory results, than any other branch of fruit growing. It has also done more to bring the possibilities of Ontario prominently before the world than any other branch of fruit growing. When the fruit of the vine was exhibited at the Colonial and Indian exhibition, it was like the return of the spies of olden time from the promised land with the cluster of grapes, an emblem of prosperity betokening a genial climate, fertile soil and a sunny sky ; and it did more to dispel that erroneous idea from the minds of the people of Great Britain, that Canada was a country largely composed of snow, ice and Indians, than any single exhibit from our Dominion.

A similar thing was repeated this season, and similar surprise was expressed by the farm delegates, sent ont from Great Britain to *spy out our land*. We have in Ontario hundreds of thousands of acres, where the soil and climate are suitable for grape growing, commencing with the county of Lambton, down through Essex and Kent and the shore of Lake Erie to the Niagara River ; down the river, and up the shore of Lake Ontario, we have Welland, Lincoln, Wentworth and part of Halton, one continuous belt, besides many other parts of counties throughout the province. According to the returns of the enumerators of 1881, Ontario produced, that season, 1,848 tons of grapes. Of that amount Lincoln produced 387 tons, Wentworth 267½ tons. Nearly double that amount, or about 500 tons, was shipped the present season from Winona station, grown within a radius of about 2½ miles, in the latter county. Welland shipped 222½ tons and Essex 130½ tons. I have not a doubt but that the returns of 1891 will show a crop of over 20,000 tons. With this rapid increase the important question with the grape grower is, where shall we find an outlet? It is true the markets have developed very fast ; where 100 lbs. was taken ten years ago, 2,000 has been demanded the present season, still I question if we can hope for such development for the next ten years. When we inquire into the history of grape growing in older countries, we find that the manufacture of wine is the chief outlet ; but before Ontario can hope to become a wine producing country many changes will have to be brought about in the growing of grapes, and preconceived opinions removed. Very little, if any wine, of an established character is produced in Ontario at the present time. The chief reason is that too many varieties of grapes are grown, and these are not planted on a judicious choice of location. Notwithstanding, that over 1,500 varieties are cultivated in Europe, the number of kinds especially adapted to the different localities is very limited. Three or four varieties from the main bulk of the vineyards of the different sections, each province, county or township even having its own special favorites.

This question of adaptability to soil and local climate is one of greatest importance, and should be closely studied by the intelligent grape grower if he would make its cultivation a success. A wine produced, under these circumstances, from grapes that have attained the highest state of perfection, grown, gathered and made on the same principle year after year, must, in time become an established and reliable brand; while the cost of production would be even less than that made from grapes imperfectly grown, in an unsuitable section; while the wine would be many times increased in value. The preconceived opinion of a great many of our people is that Ontario cannot produce choice wine; the consequence is that hundreds of gallons of our best native wines are sold under foreign names and labels. These labels, I am credibly informed are manufactured in Montreal. As grape growing increases and good grapes become more plentiful and cheaper and better brands of wine manufactured, I believe the prejudice of our people will finally yield, and they will rather trust to their own palates than to foreign labels and high prices and the hundreds of thousands of dollars that are annually paid from our Dominion to support the grape growing industries in the south of Europe, will be kept within our own borders.

Mr. E. D. Smith.—I heartily agree with the greater part of Mr. Pettit's paper, but I do not think there is the danger he anticipates of overstocking the market, even if we do not have the outlet furnished by wine-making. No doubt that is an important industry which will be largely developed in the future, but we must not overlook the fact that the people of Canada do not consume one pound of grapes to ten pounds consumed in the United States, and the people of the United States do not consume one pound to ten pounds consumed in France. In addition, when we consider that we have in this Dominion a boundless territory to be peopled where grapes cannot be grown with success, I have not the least fear of our market becoming overstocked.

THR BEST MODE OF SELLING FRUIT.

Question.—Which is the better mode of selling fruit, through agents or direct to retailers? Is the commission business worked as it should be in order to give the grower a fair price for his goods, considering the high prices which are paid by consumers in our near city markets?

Mr. E. D. Smith (Winona).—So far as my experience goes, I am of opinion that under the system of selling fruit on commission the producer does not get the prices he ought to obtain. I do not like the system at all, and I pursue it as little as possible. I presume, however, that we cannot do away with commission houses in the large cities. We must have some outlet for those fruit growers who do not choose to work up a trade; but we can do something to prevent the sale of fruit on commission from town to town. Some fruit growers thoughtlessly encouraged the system, forgetting that the commission man has everything in his hands, and the grower has nothing. If any one wants to leave fruit growing or farming for another business I would advise him to go into the commission business, for it is safe and without risk. Our fruits should be sold as far as possible direct to the retailer or the dealer, with whom you could make a straight bargain, and you would know what you were getting for your fruit.

THE VALUE OF AN APPLE ORCHARD.

Question.—What is the value per acre of an apple orchard at the age of one, ten and twenty years, respectively, supposing the ground before planting to be worth $100 per acre? Could not this association appoint a committee to prepare a table of such values and to present it at our next meeting?

Mr. M. Pettit.—Does this question mean the commercial value at the present time of an orchard ten years old, or must you draw on the future for your profits?

Mr. Dempsey.—The value of an orchard depends very much on circumstances. I have in my mind an orchard of less than an acre, planted with Duchess of Oldenburgh, which this year produced two hundred barrels of apples, which were sold for more than

three dollars a barrel in the orchard, thus yielding an income of over $600 an acre. Last year the same orchard produced about 150 barrels, which were sold at $2 a barrel. I know of another orchard of about the same size planted with the King of Tompkins County, which last year produced about two barrels of apples, and this year a little less than a barrel. In the one case I would place a very high value on the orchard and in the other case a very low value. The value depends on the variety. If I had an orchard planted with the most desirable varieties, about 60 or 70 trees to the acre, and about ten years old, I would value it at the lowest calculation at $1,000 an acre. I have myself a little orchard of just one acre, planted with a large number of varieties, which I offered to sell a few years ago for $1,000, and which has never yielded me less than twenty per cent., and to-day that orchard would be cheap at $1,500.

Mr. A. M. SMITH.—I do not think it would be well for Mr. Dempsey's valuation to be taken as an index of the true valuation of orchards in the whole country. In many sections apple growing has not been so profitable as he has suggested for the last four or five years. I know some orchards in the Niagara district which were once very profitable, but which are now being cut down and planted with something else. I think we ought to be very careful not to place too high an estimate on apple orchards I question very much whether many orchards even in the highly favored Niagara district are worth one-fourth of the value stated by Mr. Dempsey.

Mr. DEMSPEY.—I am speaking for my own section of the country.

Mr. A. M. SMITH.—I do not think, even in the most favored sections for apple growing, that valuation should be anything like what we ought to place before the country. It might have the effect of inducing people to go into apple culture who know nothing about it and who have not suitable ground for the purpose. I am a nurseryman, and ought, I suppose, to be the last one to speak thus, but in doing so I think I am speaking in the best interests of the country.

Mr. ORR.—I quite agree with Mr. Smith that we ought to be very careful not to make exaggerated statements. That thought occurred to me when I heard our ex-president speak of eight or ten tons of grapes to the acre, my experience being that all we can reasonably expect is about three tons. I consider that an apple orchard, with the trees planted one year, would be worth $99 an acre, five years $80 and ten years $75, because the older the trees are the more trouble you would have in digging them out.

The SECRETARY.—I think that statement would convey as erroneous an impression as the statement that apple orchards are worth $1,000 an acre. I think it would be a great mistake if, because of two or three seasons discouragement a man should want to dig up his apple orchard. There are times when fungus attacks the trees, the leaves fall and the fruit falls; but it is not to be expected that this state of things will last forever, and it is quite possible that, when Mr. Orr and others have dug up their apple orchards, there may be room for us who have taken care of ours to grow apples with profit, and we may find after all that they are worth not much less than $1,000 an acre.

Mr. PATTISON.—Being an apple grower in the Niagara peninsula, I think the value of an orchard depends on its location, the varieties grown, and the treatment they receive. My own little orchard of four acres is paying me exceedingly well.

Mr. A. M. SMITH.—Do you value it at $1,000 an acre?

Mr. PATTISON.—Oh, no; but I think those gentlemen who are cutting down their trees because they do not grow fast enough to suit them are making a mistake. After a man has gone to the trouble and expense of buying his trees and setting them out and waiting sixteen years for a crop, I think he is foolish if he takes them out. Let him try some experiment of manuring or something else, and if he perseveres he will probably find that they will yield him an admirable return.

Mr. A. H. PETTIT.—I think Mr. Orr should have criticised our ex-president, and he would have furnished the proof of the large yields of grapes which he mentioned. I believe those yields have been made, and I have always had great confidence in Mr. Dempsey's wide experience, and I believe he is very near the mark.

Mr. A. M. SMITH.—When I made that statement regarding the yield of grapes, I was prepared to prove it, but I did not give it as a usual yield, or wish to convey the idea that grapes would always yield so largely. I think I made the statement that this year had been an extraordinary year, and many gentlemen can bear me out that many vineyards have yielded from five to six tons, and I know of some vineyards that have yielded from eight to ten tons.

Mr. M. PETTIT.—I think that is a very extreme estimate of an average crop of grapes. Among the list of questions I sent out throughout the province, one was, what is an average crop per acre in a fair season? The answer I got from the county of Essex, the great Concord producing county, was that the average was about three and a quarter tons an acre. I think Welland averaged a little over four tons. In my opinion Mr. Orr is more nearly right than any others who have spoken on this subject. If a man gets over four tons he gets a heavy crop.

CAUSE OF THE FAILURE OF THE APPLE CROP.

Mr. SPRINGER.—I have observed that this year the apple crop has been best in the counties of Huron, Grey, Bruce, and a part of Simcoe. My theory is this: During the month of February last we had a period of mild weather on the lake shore, and I suppose generally throughout the province, lasting about ten days. During that period there was no frost on the ground and the buds of the apple trees swelled. At the close of the ten days the weather turned suddenly very cold, and in my opinion it was the heavy frost succeeding the mild weather which caused the damage by killing the buds. I am strengthened in that theory by the fact that where the ground continued frozen we had crops of apples. Another circumstance I noticed was that the Northern Spy this year yielded more abundantly in my section than any other variety, simply because it is always later in starting in the spring, and therefore its fruit buds were not likely to be so much affected by the frost. I would like to ask if any gentleman can suggest a remedy for the apple-scab, which I find increasing in my orchard.

The SECRETARY.—I have been studying that matter somewhat, and I am very hopeful that a remedy has been proposed that will clear our trees of this evil. It is the application of carbonate of copper. I tried it last season to a certain extent, but I was rather late. It must be applied early in the season before the leaves are developed, because the scab lives through the winter on the buds. It grows on the leaves as well as on the fruit, and by spraying our trees with a fungicide, which is death to the scab, we may hope to accomplish the object. The recipe is 3 oz. carb. cop. dissolved in 1 quart of ammonia. Dilute with 32 gals. of water.

Mr. SPRINGER.—Would you spray it at the same time as we spray Paris green?

The SECRETARY.—Not this mixture, for the ammonia would render the Paris green soluble and so injure the foliage. Hyposulphite of soda was at one time tried with Paris green but it did not entirely accomplish the object. Better results have been obtained with carbonate of copper. It can be applied in suspension in water with Paris green without the ammonia. Mr. John Craig is perfectly satisfied that the carbonate of copper, in suspension in water, is even more successful than when dissolved in ammonia and then put in the water. He says he has applied it both ways. If this is true it is highly satisfactory, for the ammonia largely increases the expense of applying the carbonate of copper.

Mr. A. M. SMITH.—What would be the necessity of using Paris green in the first application if the pest is there before the leaves come out?

The SECRETARY.—It requires to be applied three times in the season. First, before the buds have formed, to kill the spores of the fungus which have remained during the winter when no Paris green is needed, then after the fruit has formed in order to destroy the fungi that have survived. You can get the carbonate of copper generally from druggists.

Feb'93. Mr. McMICHAEL.—I have had fair success with hyposulphite of soda. One year I commenced the application before the buds swelled, and continued them seven times until the fruit was formed, and that year I had almost perfect fruit. But the years that I applied it only three or four times I had only partial success.

THE COMMERCIAL FRUIT GROWER'S OUTLOOK.

This subject was introduced by Mr. D. W. Beadle of St. Catharines, with the following address :

The question, what is the prospect of a remunerative market in the near future, is frequently present to the thoughtful fruit grower. Appalled by the quantity of fruit bearing trees and plants yearly sent out from the nurseries, and certainly planted somewhere by somebody, he asks will not the market soon become glutted and fruit growing cease to be a profitable industry. The following considerations are offered towards a solution of the problem.

We notice that many of the plantings that have been made, and in all probability many that will be made, have been made so unwisely that they will not have any appreciable effect on the fruit market. Many trees are planted in uncongenial soil and in unsuitable localities by ignorant or inconsiderate planters where they cannot thrive, but nag out a short lived, wretched existence, bringing little or no fruit to perfection : unless we except the fruit of bitter disappointment and loss. Driving during the past summer through that part of the Niagara district bordering on the Niagara river and lake Ontario, we saw many acres planted with peach trees the soil of which was of such a character, low lying, flat and undrained, that it must of necessity be wet and cold, and so entirely unsuited to the peach that it may surely be counted a miracle if the planter gathers aught therefrom but vexation of spirit. Doubtless some neighbors possessed of suitable soil and sound judgment had planted and in due time gathered a remunerative crop ; therefore others concluding therefrom that peach-growing paid well, though lacking in both essentials, had hastened to plant without considering the difference. Hence it comes that from lack of knowledge of the conditions of success, much of that which is planted fails to produce enough fruit to appreciably affect the market.

Again, many go into fruit growing as a speculation. They have no love of fruit raising, no enthusiasm, none of that spirit which "never faileth," but beareth all things, hopeth all things, endureth all things." In a happy-go-lucky style they plant, cultivate, gather and market, if indeed, they get so far, with the inevitable result that much of the fruit is inferior, sells for an inferior price, and shortly they conclude that there is no money in fruit-growing and so go out of the business. It is the enthusiastic man, the man who gives to the work his hands, his head and his heart, who is satisfied with nothing short of perfect fruit, and that attractively presented, who commands commercial success. It may be said of him as of the true poet, "*nascitur non fit*" ; he is born, not made.

Further, the demand for good fruit has steadily increased, more fruit per head of population is consumed now than was used fifty years ago, and judging of the future by the past, this will continue to increase for at least some time to come. Just as increased facilities of travel has resulted in an increase of travellers, so that hundreds, yes, thousands travel now to one in the old stage coach days, so an increased offering of fruit on the market has increased the consumption, until where it was used sparingly as a luxury it has become to be regarded as a necessity. But besides this, the consumers of food are increasing much faster than the producers, and as fruit comes to be regarded as an essential part of daily food, the consumption of fruit shares with other food products in the constantly increasing demand. The urban population is increasing faster than the rural. This means that the consumers are increasing much faster than the producers in Ontario, and we may infer that in the sister provinces, if the increase be not as great as with us, that it is consderable, so that taking the Dominion as a whole, we may safely conclude that it is as great as in the U. S., where it is computed that the urban population is increasing twice as fast as the rural.

Once more. Not all the land brought under tillage and capable of sustaining a goodly population is suitable for profitable fruit-growing. Large portions of the country must ever be dependent for the bulk of the fruit consumed on those parts where fruit growing can be a commercial success. As the population of the non-fruit producing parts increases the increase of consumers will be augmented.

In this, no account has been taken of our increasing fruit export, yet if these considerations are well taken the commercial fruit grower who is true to himself and devoted to his business has no reason to be discouraged at the outlook.

INCREASE OF FRUIT CONSUMPTION.

Imported for home consumption :—

In 1879.	Dried fruit to value of		$2,830	
"	Green " "		8,221	
	Total		$11,051	
In 1889.	Dried fruit	$7,487		
"	Green "	623,083		
		$630,570	$619,419	increase.
			$630,470	

In the last decade the increase has been 57 fold.

EXPORTS OF CANADIAN FRUIT.

In 1879	Total, the produce of Canada		$157,618
In 1889.	" " "		1,617,818
	Increase during the decade (which is tenfold)		$1,460,200

PROTECTION OF TENDER PLANTS REQUIRING OUR CANADIAN SUMMER SUN TO RIPEN THEIR FRUIT.

This subject was introduced by the following paper, contributed by P. E. Bucke, Ottawa :

The severe winters of Canada, and the warm and genial summers represent two such opposite climatic conditions, that it becomes a necessity for the horticulturist to modify the former so as to bring it more into line, as regards the structure of those plants whose nature and properties require the summer heat to ripen their products, but whose roots and stems suffer from the chilling blasts of winter, or whose sap vessels are so constructed that they are not sufficiently elastic to contract and expand under the cold of night, and warmth of sunlight. In my eastern home, Ottawa, this is more the case than here, but in all parts of Ontario, the question of artifically modifying the cold of winter is one of vital importance, and has to be considered by every cultivator of the soil.

The two best agents as yet discovered for the protection of plants are found to be earth and snow, and these are found everywhere.

The plants most usually protected are the grape, the raspberry, blackberry, strawberry and the grasses. Lawns require quite as much protection as any object in nature, especially small ones near buildings, where wind eddies are formed.

Any pliant plant, such as the grape, may be protected by earth alone, after they have been pruned, leaving from two to four eyes of the present year's growth. The pruning should be done from four to six weeks after the leaves have fallen in the autumn, so as to give the young canes ample time to harden.

The process of covering is as follows : The plants are held down by means of a digging fork, which is thrust into the soil across the upright branches, the earth is taken from between the rows five or six feet from the base of the vines and placed over the

recumbent limbs and stems ; blackberries are similarly treated, where practicable, as they are grown further apart than raspberries. The latter are held down by placing a sod on as many " hills " (stools) as can be collected together that will reach or cross one another from two opposite rows ; the arched part, or bend, is further covered by long strawy manure ; this collects the snow and secures the necessary covering.

Grass and strawberries are protected from the sun's rays by means of branches of trees, grape-vine cuttings, prunings from apple trees, currants or any such material as will collect the snow and not smother the plants, as it is found that wet leaves, manure, corn-stalks, or whatever is liable to heat, is more destructive to the life of the strawberry than either the cold or the early spring sunshine.

I may say, however, if you wait until the soil is frozen hard and solid, you may apply any kind or any quantity of covering on strawberries or other plants without fear of smothering, but of course no manure must be put on in a heated condition, or that is liable to heat after it has been applied. In the spring before the ground thaws the covering must be separated so as to expose the crowns of the plants, but a thick covering will keep the soil from thawing as early as that which is exposed to the sun.

These few hints may be carried into the flower garden as well, for the protection of the clematis, the rose, violets and daisies, etc., and such other plants whose nature will stand a certain amount of frost, but will not resist the sudden rise and fall of temperature, which every twenty-four hours of the change of seasons brings, when " winter lingers in the lap of spring," or the fairy wand of Phoebus dissolves the shroud of snow and awakes again to new life from peaceful slumbers such of natures forces as have been held dormant by winter's cruel grasp.

Many people advocate shelter belts of native and foreign trees, both evergreen and deciduous—high walls, fences, etc. For my own part I believe that the ordinary forest trees, or any tree, that grows from twenty to fifty feet high, is not what is required for the protection of either small fruits, grape vines or the larger trees of apples, plums, pears, peaches, etc. It would perhaps be as well to call a halt before going too far in this direction, and enquire whether, for the protection of grain and fruits, the shade and roots of such trees which grow to an altitude of forty or sixty feet, or even trees of smaller growth are not more injurious than beneficial to the plants it is sought to protect.

Whether the arresting of the breezes and sunlight sent from heaven does not have the effect of assisting the harboring, hibernating, and incubation of those insect pests which are so injurious? Whether by arresting the currents of air and the light of the sun, plants are not rendered more liable to mildew and blight or other forms of parasitic animal and vegetable life? I think it would be well for this Association to consider whether it should not recommend the local protection of plants in the autumn with boughs, earth, straw or such other material as may be thought desirable for arresting the snow, said protection to be removed in the spring, rather than permanent rows of trees, whose limbs are high in air, which, like close fences make drifts at or near their base, but leave other places at a distance entirely unprotected.

I think I hear some one saying, " Oh, but we only intend planting trees on the north side of our farms or lots," that is all very well for you, but how about your neighbor whose land is on the south side of you ? He will get the shade and back currents from your wind-break, or his drains may be choked and destroyed by the roots of your trees. The roads may be drifted with snow, while the man who owns the wind-break, smiles complacently to himself and cares for none of these things. How often do we read passages like the following : " Close to trees growing in line fences, grass and crops do not thrive." " My wind-break is planted with poplar and has completely filled my orchard with roots and shoots." " Wind-breaks in any locality should not be crowded against the orchard, they are better at a reasonable distance." " The trees (maples) are about thirty feet high, planted on the west side of the field, there is a strip of twenty-five to thirty feet along them in which the crop will not grow." " Wind-breaks take about all the substance from the soil for two rods on each side." Many more such quotations could be made ; any one knows that in fields where large spreading elms, or in fact any forest trees are left, what with the roots and the shade no crops will be obtained within a circle of twenty or thirty feet.

I do not wish any one to infer from these remarks that I am opposed to tree planting ; far from it, as I believe that trees are one of the grandest forms of nature's productions. But I also believe they should be put in their proper places. There are thousands of acres of rough land, such as hill-sides, stony ground, ravines, ridges, etc., in Canada that might well be planted with forest trees, or have forests growing upon them which if looked after by a qualified forester, as are those in Germany, and other foreign countries, would be advancing in value instead of deteriorating. How many thousands of acres of wood lands are annually destroyed by fires? It would be well if every farmer would cultivate a wood lot of from five to ten acres on his own account, planting such trees as are most valuable for sale, or most useful for fuel or farm purposes. It is well, also, to plant trees in pasture lands for the shade of animals, but as cattle-runs become less and silos more plentiful, these trees may be gradually removed. Trees should be planted along the road-side six feet from the outside of the fences, and forty feet between the trees ; also on streets in towns ; but I would prohibit by law the planting of any rows of forest trees within thirty feet of each other, or within fifteen feet of any dwelling. In the various ways above suggested for the preservation of timber, the laws of nature would be equalized, rainfall, or what has much the same effect in assisting vegetation, the humidity of the air would be better regulated during the hottest months of summer, as by the retention of trees, evaporation takes place from the soil under them at a slower rate, and consequently continues for a longer period.

In England the traveller will notice in the sea-shore gardens or exposed situations, hedges of thorns or of clipped cedar, from four to five feet high, planted in rows from sixty to eighty feet apart, and these are a grand protection from the devastating winds that sweep the coasts, but you may travel the blooming little island from end to end, and you will see plenty of special plantations, avenues, etc., but no wind-breaks such as people talk about in this province where we are farther from oceanic storms and where they are less required.

Yes, we want trees but we want them in their proper places.

THE PROFITABLE MANAGEMENT OF A SMALL GARDEN.

The following paper on this subject was contributed by Mr. W. S. Turner, Cornwall, Ont. :

We will suppose the plot to be cultivated is an ordinary village lot, 50x100 feet, already broken up and a crop of potatoes grown from it. I would commence by getting old manure, if possible—and here it may be asked, "What kind of manure is best?" I should say horse manure for a clay soil, and cow manure for a sandy soil. For a soil that is a combination of the two, such as a sandy loam, clay loam, or gravelly soil, I should prefer a mixture of the two, but manure of some kind or other you *must* have, and in no limited quantity either. Don't heed the man who looks over your fence in the spring-time and says, "Why, you are putting on so much manure that your potatoes will all grow to vines." This kind of advice is "more honored in the breach than in the observance." Supply yourself with the following tools : a spade, shovel, rake, hoe, slide or Dutch hoe, digging fork handweeder, trowel, wheelbarrow, a couple of stout lines 50 or 75 feet long, and a dibble. The latter tool you can make out of an old spade or shovel handle, brought to a point, and you will find it very handy in transplanting. Draw out a plan, either on paper or in your mind's eye, where your main paths are to be. Here, I may say, you will not lose much ground in paths if you follow out the plan I am about to lay down. Make one path 7 or 8 feet from the fence all around your lot, one through the centre, and one to intersect that ; $2\frac{1}{2}$ feet is wide enough for *any* of your paths. It is well to have an eye to surface drainage when you lay out your plans for paths, as it is of *great* importance that your land be well drained. Now plant grapes on the north side of your lot, about one foot from the fence so that when the vines are large enough, you

can brace the trellis to the fence. In front of them and next to the walk plant strawberries, gooseberries, or anything of that kind that will not shade the vines too much. Plant your black currants on the west side, or *anywhere* where the sun will not shine on them all day, as they prefer partial shade. The red and white currants plant near the house, as the robins are particularly fond of them, but I would not wage war against any one of the gardeners' friends on that account, as it is a source of great satisfaction to see a robin pulling and hauling with all his little strength at a worm as large as himself, and when he has despatched it, look up at you with confiding boldness; or again to see him fly over your head with a cut-worm in his mouth for his family at home. Don't you think that pays for a whole plate of currants or strawberries? Plant your rhubarb near the back kitchen, so as to get all the slops from the house. Put in an early variety of potatoes for harvesting in July, such as Early Rose, Puritan, or Pearl of Savoy, plant in drills, three feet apart, and one foot apart in the drills. If you get this part of the garden planted early enough, you can sell potatoes at from $1.50 to $2 per bushel. As soon as they are out of the way prepare the same ground for celery or strawberries. You can get a good crop of celery, and if it is White Plume, you may sell it and put in turnips in a favorable season. I did this successfully the last fall. The turnips were not very large, but they were good and paid for the trouble. Though I have done this, yet I think two crops in a season will amply satisfy any Canadian gardener. I will not take up your time by going too much into details, but will proceed to speak of a very important crop, one which a great many people enter upon with dread and uncertainty, and that is strawberries. We all know the past season has been a very unfavorable one for that delicious fruit, but I have still a little of the faith of our late lamented friend, Mr. Croil, and do not despair because we have had *one* bad season. I would prepare the ground by making it as rich as I could afford, either by using a liberal supply of old manure, or a good sprinkling of superphosphate and nitrate of soda, supplemented by a little wood ashes, after the plants are well started. Have the rows 3 or 3½ feet apart, and the plants 12 or 14 inches apart in the row, plant them by the line, as neatness and regularity are as requisite in the garden as anywhere else. This done, string the line between the rows of strawberries, and sow early beets, carrots, turnips, radishes, or plant beans, peas, onion sets, shallots, or prick out celery plants, or you may even set out tomato plants, four or five feet apart. None of the vegetables I have named will shade or rob the strawberry plants too much (providing you have manured heavy enough) but nip off the runners as soon as they appear, and do not allow any blossoms to mature, and, take my word for it, you will have a fine bed of strawberries in the fall, besides having had a good crop of vegetables. I do not think it advisable to have many standard fruit trees in the garden, as in the size of the plot I have stated it will detract from the profits to grow both, as it is a well-known fact (or should be) that the roots of fruit trees planted 20 feet apart will intermingle in 7 or 8 years, according to the varieties; consequently, all the fertility in the ground (by that time) is needed for the trees. But this does not apply to the small fruits I have before mentioned, as the two branches (vegetables and small fruits) can be grown together with advantage and profit.

Now that we have the garden fairly on the way, we must not run away with the idea that our work is done. In gardening, as in all other things, "Eternal vigilance is the price of success," for now is the time for destructive insects and weeds to get in their work. To check the ravages of the former we most resort to insecticides in the form of Paris green, hellebore, slug shot, etc., and for the latter the best tools are the rake and slide hoe, and do not wait until you see the garden green and matted like sod, but out with the rake as soon as the weeds are less than an inch high, a single stir will turn the roots up to the sun, and the evil is overcome for the present, but do not let a single weed go to seed the whole season. Keep an eye on the corners and out-of-the-way places. A great many amateur gardeners get slovenly and careless about the time they begin to harvest the earliest crops, and, forgetting the gardener's old adage, that "one year's seeding makes ten years' weeding," they fondly think their work is nearly over. Not so, that is just the time when that loathsome and almost indestructible weed, purslane, appears. It is almost impossible to entirely eradicate it, for it is as tenacious of life as our domestic animal, the cat, whose nine lives would need to be multiplied by hundreds ere it reached the

tenacity of life possessed by this pest of the garden. Why, if you pull it up and leave it, its roots will turn down and take hold again the very first rain that comes. It will shed its seeds while yet green; if you should break off a single leaf it will also take root; you cannot dry and burn it, for it is too succulent; so the safest way is to handle it as carefully as you would eggs, and carry it out of the garden.

When you have harvested a crop of anything, or you have any vacant places through the ravages of the cut-worm, or any other vermin of that "ilk," just stop for a moment to think, and see if you cannot get in a cabbage, cauliflower, or celery plant, or any other thing that you think will have time to mature sufficiently to pay for the labor, and if it be too late for that, prepare your ground for the next season by digging in manure, and leaving the ground in as lumpy a state as possible, if it be at all inclined to clay, for the winter's frost will act upon it, making it quite mellow and friable, and better fitted for early spring work. It is to the advantage of the gardener, and *certainly* to his interests, to have the garden cleaned up in the fall, all rubbish put in the compost heap, all tools cleaned, greased, and put away under cover for the winter; he can then rest on his oars, or rather on his hoe, and feel that he has done his best to cultivate the soil God has given him.

I cannot close this effort on my part to interest you without referring to the loss the fruit growing community especially has sustained in the late Mr. John Croil. As a member and director (for thirteen years) of the Fruit Growers' Association we shall also miss him very much for he was an efficient worker, and by his genial and warmhearted manner he made many warm friend amongst those who came under his influence. I cannot do better than repeat a few lines from one of our Canadian poets, on "Loving Thoughts on Mr. Croil."

Ah, can it be, my friend is gone,
No more he'll sing the "Robin's song,"
And the glory of the rising sun
He'll hail no more; his journey's done!
Sing on "wee birdies," sing his requiem,
He's gone beyond our earthly ken:
Great was his soul (his soul's still great)—
Worthy was he on earth; he's worthy yet.
Who knew him longest loved him best;
Love follows to his blissful rest;
His life sublime, without a stain,
And resolute his racy brain.
No stranger to nature; or nature's end,
For nature's Ruler was his friend;
Sweetly may the lilies bloom
Around his sacred, dreamless tomb.

GRANDMA GOWAN.

After adopting votes of thanks to the City Council of Hamilton for the use of the council chamber, to Messrs. Webster Bros., florists, for their kindness in decorating the dais with plants from their greenhouse, and to the press for its reports of the meeting, the Association adjourned.

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THE WINTER MEETING, 1891.

The Association assembled in the City Hall, Hamilton, on Wednesday morning, the 16th December, at ten o'clock, when the President, Mr. A. H. Pettit, called the meeting to order.

FUNGOUS DISEASES IN FRUITS.

Mr. JOHN CRAIG, of the Dominion Experimental Farm, Ottawa, read the following paper on the subject of "Recent Advances in Dealing with Fungous Diseases of Fruits":

The progressive state of horticulture of the present day is strongly brought out by the marvellous rapidity with which theories and practices, new to lovers of the gardener's art, are disseminated by the fraternity and become the doctrines and remedies with the amateur as well as the professional. The treatment of fungus diseases affords an excellent example of this wide awake spirit of advancement. It is only a little more than ten years ago that the life history of many of these lows forms of plant life, so injurious to our fruit trees, was first investigated, and less than half that period since the copper salt remedies were discovered by accident.

We are heavily indebted to the Department of Agriculture at Washington for first testing and bringing before the public the efficacy of these remedies; and we may now be said to have within our reach the means of controlling a large number of the fungous diseases affecting our fruit-bearing plants, including the mildews and rots of the grapes and gooseberries, anthracnose of raspberry cane, black spot of the apple, leaf blight and cracking of the pear.

To gain an idea of the immense value of these remedies to the fruit grower we have but to consider that the estimated loss in the United States in 1890 from apple scab alone amounted to $16,000,000, and the annual loss to the different fruit crops amounted to not less than $50,000,000, although in 1890 it ran up to $90,000,000. What our loss in the Dominion is I am unable to estimate, but doubt not that in the case of apples and pears it is quite proportionate, if the ratio is not against us.

It is not my intention to go into the whole matter of the treatment of fungous diseases at length, but would rather point out some of the newer and more recent results bearing upon the work. It was my good fortune to visit last autumn a number of co-workers in the experiment stations across the border, and learn from them some, as yet unpublished, results of the season's work.

In treating "black rot" of the grape, a disease which I am thankful to say that we in Canada are not much injured by, Prof. Galloway found that the Bordeaux mixture half the usual strength was almost as effective as the full strength, saving between 86 and 90 per cent. of the fruit. This, as you will see, would mean 3lb. of sulphate of copper to 2lb. of lime and 22 gallons of water. A test between early and late treatment was also made. In the case of those receiving the late treatment the first application was made when the berrries were about the size of bird shot, or just formed. The results in all cases pointed emphatically to the early treatment as essential to satisfactory results, the gain being from 50 to 60 per cent.

In spraying fruit stalks to prevent powdery mildew and leaf blight, Bordeaux mixture and ammoniacal copper carbonate will cheaply give immunity.

In treating grape vines for downy mildew, the past season I was entirely successful with three applications of the ammoniacal copper carbonate, but I may add that the "bird's-eye rot" or anthracnose (Sphaceloma ampelinum) of the grape did not yield to

this remedy either in our vineyard on the farm or in the neighboring vineyards with which I was working. From recent experience it seems wisest to advise for the eradication of this disease that the vines be swabbed with a 10 per cent. solution of copper or sulphate of iron—1lb. to 10lb. of water. This disease has the past season been quite destructive and more pronounced among the Rogers' varieties than others with the exception of Creveling.

In the treatment of apple scab, before drawing attention to the results of my own work, I wish to bring to your notice a few lines of experiment from other workers.

Mr. W. J. Green, horticulturist to the Experimental Station of Ohio, used on Northern Spy for apple scab, the past season, Bordeaux mixture one quarter the usual strength and found it equally effective, as far as he was able to decide without actual count, as the full strength, thus saving 75 per cent. of the initial cost.

Again, Prof. Goff, of Wisconsin, acting on thesuggestion that the arsenite of copper in Paris green should be in a sufficiently available form to be effective both as a fungicide and insecticide, sprayed five times with the ordinary mixture of Paris green and water used for codling moth, and obtained astonishingly favourable results. These instances are merely given to show that the field for experiment is boundless and to keep such lines of work in our minds for next year.

I conducted a series of experiments last summer at Abbotsford, P.Q., with the cooperation of Messrs. Craig and Fisk of that place, in treating for apple scab. These experiments were designed to throw light on the following points :

1. The relative efficacy of carbonate of copper in suspension and solution.
2. The relative efficacy of copper carbonate unwashed in solution and in suspension.
3. The possibility and effect of using Paris green with these mixtures.

Three applications were made in each case. The first one on May 22nd, when the leaves were about half formed and the blossoms just beginning to open. The second application on June 8th, when Paris green was added to each mixture, but only used on half the number of trees in each lot, the other half being left as checks. The third application was made on the 22nd of June.

The results as shown on the chart are averages deduced from a number of trials made to ensure greater accuracy.

The trees selected were of the Fameuse variety, planted 14 years ago, and having made fair growth are now of good size. Six trees were set apart for each test at the time of the second application. As already stated, Paris green was added at the rate of 1lb. to 200 gal. to each mixture and applied to three trees in each lot. The wind-falls as well as hand-picked fruit were carefully graded, with the results as shown on the chart.

A.—Showing per cent. of fruit of first, second and third quality. also per cent. of sound and wormy fruit.

Copper carbonate.	Per cent., first quality.	Per cent., second quality.	Per cent., third quality.	Per cent. of wormy fruit with Paris green.	Per cent. of wormy fruit without Paris green.	Per cent. in favor of Paris green.
1. Solution	38.8	46.6	14.6	21.6	26.6	5.
2. Suspension	33.5	52.	14.5	16.9	25.9	9.
3. Unwashed suspension	33.	50.	17.	10.5	22.3	11.8
4. Unwashed solution	42.5	46.5	11.	8.5	15.	6.5
5. Unsprayed	18.	51.	31.	18.	27.	9.

B.—Comparative results.

	10	20	30	40	50	60	70	80	90	100
4. Unwashed solution.	First quality.				Second quality.				Third quality.	
1. Solution	First quality.				Second quality.				Third quality.	
2. Suspension	First quality.				Second quality.				Third quality.	
3. Unwashed suspension	First quality.				Second quality.				Third quality.	
5. Unsprayed	First quality.				Second quality.				Third quality.	
With Paris green	Sound fruit.								Wormy fruit.	
Without Paris green	Sound fruit.								Wormy fruit.	

In no case did the addition of Paris green seriously injure the foliage. I herewith append suggestions and directions for the preparation of the formulæ given in the chart.

FUNGICIDES RECOMMENDED.

1. Ammoniacal copper carbonate—

Carbonate of copper	8 oz.
Ammonia	1 gal.
Water	100 gals.

In an ordinary vessel capable of holding a gallon or more, put 2 ounces of carbonate of copper and 1 quart of ammonia (ask your druggist for *strong ammonia*); when the copper is completely dissolved, pour the mixture into a barrel and add 25 gallons of water. The solution is then ready for use.

Medium sized trees will take about 1 gallon each, and large trees from 1 to 2 gallons. A convenient method when using this formula is to prepare the carbonate of copper by dissolving it in the ammonia at once in the full quantity ordered above, and keeping it ready for use stored away in ordinary quart glass jars; these to be diluted with water as needed.

2. Carbonate of copper in suspension—

Carbonate of copper	2 oz.
Water	25 galls.

This is prepared for use in the same way as Paris green by mixing thoroughly with the water. A more evenly distributed mixture can be obtained by first stirring the carbonate of copper into one gallon of water, when well distributed, this is poured into the remaining 24 gallons, and the whole thoroughly agitated. This mixture requires more care in application than the ammoniacal solution; it should be constantly agitated, and laid on in a fine spray.

In view of the above results, I would therefore recommend for trial, mixtures as follows :

(*a.*) Carbonate of copper ..... 1½ oz.
Ammonia ..... 1½ pints.
Water ..... 25 galls.
Paris green ..... 1½ oz.

The carbonate of copper should be dissolved in the ammonia, according to the directions already given, mixed with the water, and the Paris green then added, care being taken to stir in well, and keep it from settling to the bottom.

(*b.*) Carbonate of copper ..... 1½ oz.
Paris green ..... 1¾ oz.
Water ..... 25 galls.

The experiments made with this mixture thus far, do not warrant me in speaking positively in regard to its efficacy, but they show that no injury to the foliage resulted from the application of a stronger mixture than the one here recommended for trial. If this proves an effective remedy for the codling moth as well as the "apple spot," it will no doubt supersede any other now in use, both on account of the ease with which it can be prepared, as well as its comparative cheapness. The Paris green can be omitted after the second application in mixtures (*a*) and (*b*), as two sprayings of Paris green is generally considered a sufficient remedy for the codling moth.

As the precipated form of carbonate of copper is not always obtainable from druggists, directions are herewith appended for the easy preparation of this material at a cost much less than the usual wholesale price.

In a vessel capable of holding two or three gallons, dissolve 1½ pounds of copper sulphate (blue vitriol) in two quarts of hot water. This will be entirely dissolved in fifteen or twenty minutes, using the crystalline form. In another vessel dissolve 1¾ pounds of sal soda (washing soda) also in two quarts of hot water. When completely dissolved, pour the second solution into the first, stirring briskly. When effervescence has ceased, fill the vessel with water and stir thoroughly ; then allow it to stand five or six hours, when the sediment will have settled to the bottom. Pour off the clear liquid without disturbing the precipitate, fill with water again and stir as before ; then allow it to stand until the sediment has settled again, which will take place in a few hours. Pour the clear liquid off carefully as before, and the residue is *carbonate of copper*. Using the above quantities of copper sulphate and sal soda, there will be formed 12 ounces of copper carbonate.

Instead of drying this, which is a tedious operation, add four quarts of strong ammonia, stirring in well, then add sufficient water to bring the whole quantity up to 6 quarts. This can be kept in an ordinary two gallon stone jar, which should be closely corked.

Each quart will contain 2 ounces of the carbonate of copper, which when added to 25 gallons of water, will furnish a solution for spraying of the same strength and character as that obtained by the use of the dried carbonate, and one which can be prepared with little labor, and kept ready for use throughout the season.

When the carbonate is to be used in suspension, instead of adding the ammonia to the sediment, add water until the whole quantity is made up to six quarts. Stir this thoroughly until the sediment is completely suspended (entirely mixed throughout) and pour the thick liquid into a suitable jar, when it will be ready for use.

Before using shake the contents thoroughly, so that all the sediment may be evenly distributed in the water. Pour out a quart of the thick fluid, and mix with 25 gallons of water.

The cost of the chemicals will vary with the amount purchased. Copper sulphate (blue vitriol) is usually retailed at from 10 to 12 cents per pound, and sal soda (washing soda) at about 3 cents per pound. The strong ammonia should be used which can be bought in half-gallon jars at from 20 to 25 cents per pint.

The importance of early treatment cannot be too strongly urged, as after the disease has gained foothold and is working within the tissues, remedies which can only be applied externally are of very little use. The first application should be made *before the blossoms open*; the second soon after they have fallen, the third and fourth following in periods of about ten days or two weeks apart. If the season is cool and wet, a fifth application will be necessary, but if moderately dry, four applications, if begun in good time, will in all probability be sufficiently effective.

How to Apply the Fungicide.

1. For orchard work use some form of a barrel pump.

2. Use nozzles which will distribute the liquid in a fine misty spray.

3. The trees do not need to be drenched, but must be completely moistened with the liquid.

A Member.—Is there any danger to bees from the use of this mixture.

Mr. Craig.—If Paris green or London purple is used at the time the blossoms are opening and the bees are actively engaged, there is danger of their being poisoned, but for the codling moth it need not be applied until the blossoms have fallen.

Mr. L. B. Rice (Port Huron, Mich.)—In our society last winter, this question was brought up, and cases were mentioned in which suits had been brought to recover the value of apiaries that had been destroyed. The society passed a resolution that the bee was the best friend of the fruit culturist, and that the owner of the orchard had no right to destroy apiaries in the way it was said these had been destroyed.

Mr. Caston (Craighurst.)—One point with regard to the codling moth. Entomologists tell us that the moth lays its eggs about as the blossoms are dropping from the tree. I am inclined to think that the moth lays its eggs at different times, and that to make a thoroughly effectual job of it, we would have to make more than one application of the Paris green.

Mr. P. C. Dempsey (Trenton.)—I have given a good deal of attention to the codling moth, and I am satisfied that there are two broods of it oftentimes, and that if we are successful in killing off the first, the second will be very small, and that is a great point gained. We cannot do much by spraying after the apple is formed, it is while the blossom end of the apple is turned upwards that the spraying is effective. The poisonous mixture runs down into the cavity where the egg has been laid. After the apples have turned with the blossom end downwards, there is no cup to receive the poison.

STRAWBERRIES AND THE WHITE GRUB.

The President announced the next question: "What is the best rotation in strawberries in order to escape the white grub?"

Mr. Craig.—The question was suggested to me by a strawberry grower who has a limited area of ground. He grows strawberries and market garden products, and is troubled with the white grub the second year.

Mr. Rice (Sodus, N.Y.)—Tell him not to have any second year.

Mr. Craig.—I told him that, but that does not answer the whole question, and I would like the experience of some of the growers here.

Mr. Caston.—I would try a good liberal application of hard-wood ashes to the soil. I think that would be an effectual remedy.

Mr. RACE.—I have experimented largely with hard-wood ashes on my strawberry beds. I find that using barnyard manure liberally you are pretty sure to have a liberal crop of grubs. The application of hard-wood ashes in the fall is pretty certain to keep the ground clear.

Mr. RICE (Port Huron).—I would like to know if the sowing of buckwheat and plowing it in would be any good. That is said to be a pretty effectual remedy for the cut-worm.

Mr. CRAIG.—I have tried Mr. Caston's remedy, or rather have had it tried by correspondents and have found it successful. Mr. Fletcher, the Dominion Entomologist, has given me a few notes on the life-history of the White Grub. It does not give remedies, but merely facts as to its life-history. If it is the desire of the Association I shall read it.

It being manifestly the desire of those present, the president desired him to read the paper. The paper was read as follows:

SOME NOTES ON WHITE GRUBS.

BY JAMES FLETCHER, OTTAWA.

The question on the programme, "What is the best rotation in Strawberries to escape the White Grub?" will, I feel sure, give rise to an i terestisg discussion and I regret exceedingly that I am unable to be present at the meeting and take part in it. I send you, however, a few notes on the life-history of the insect under discussion which I trust may be of service. These are drawn from my own observations and those of the best observers in the United States. I am led to do this from the fact that nearly all the available accounts of the transformations of White Grubs (larvæ of various species of *Lachnostrna*) contain inaccuracies which particularly affect the question of a remedial rotation to avoid serious injury from these insects.

The life-history of White Grubs is as follows: The eggs are laid by the females in June, the female burrowing a short distance beneath the surface of the ground for the purpose. These hatch after a few weeks and the young grubs grow very slowly and are only about ¼ of an inch in length when winter sets in. By the end of the next season they are about two-thirds their full size when winter sets in, and in the third season when spring opens they complete their growth, and about 1st July form a smooth cell in the earth and turn to pupæ. Before winter sets in they change to the perfect beetles; but remain in their cells until the following May or June. To recapitulate, they take three years to pass through their changes:

Egg and young Grub.

First year..... EGG. Summer. | YOUNG GRUB. Autumn.

Growing Grub.

Second year.... Spring | Summer. | Autumn.

Grub-chrysalis and perfect beetle.

Third year ..... FULL GROWN GRUB. Spring. | CHRYSALIS. Summer. | PERFECT BEETLE. Autumn. | PERFECT BEETLE. Spring.

In all three years from the summer of the first season to the summer of the fourth season. The difference between this life-history and that which is given in nearly all the published accounts is chiefly in the time of the year that the larvæ

reaches full growth and ceases feeding; but small as this difference may at first sight appear to be, as was pointed out by Prof. Forbes at the Annual Meeting of the Association of Economic Entomologists held last year at Champaign, Ill., it might lead to unfortunate practical mistakes.

It was thought that the grub or larva attained its full growth the third autumn, ceased feeding then; but remained in the ground as a grub until the following spring, when it changed at once to a chrysalis and then a little later emerged in the beetle form. Thus all large larva which were found feeding on roots in the spring, it was thought, had another year of destructive life before them, and, therefore, land found to be badly infested in the spring with active larvæ would for that year be useless for the cultivation of all such crops as are liable to their attacks. But this we now know is not the case, because if nearly full-grown grubs be found in the spring, by the end of June, they will finish their destructive larval life and turn to pupæ. Again, on the other hand, were it the case that all large grubs found in the land in autumn had reached the stage when they ceased feeding, such land could be planted without fear the following spring; now however, we know that this also is not the case, and grubs found in an active state late in autumn will also be active and injurious the following spring and well on into the summer. They will thus have time before reaching full-growth to injure or completely destroy any crops planted on the infested land. I am of the opinion that the greatest injury by white grubs is done to most crops during this last stage of their growth. Certainly, for the first year they are too small to do appreciable harm; in the second I judge that their injury is of small extent, unless they occur in very large numbers, and only then to such crops as, like strawberries, are of a perennial nature. And, finally, as a matter of experience, every instance in which the ravages of these insects have been complained to me, they have been in the final stage of their larval growth.

Mr. Morris.—If these grubs are in the ground at the time the strawberry plants are put in they will make their way to the plants about June. If the grubs are there you will see a plant here and there dead or wilting. You must find and remove the grub. By going over the beds two or three times that way you get rid of them pretty effectually. This plan involves work but it brings the desired result.

Mr. Willard.—That has been exactly my experience. The best work I ever did against the grub was when I paid some small boys ten cents a hundred for all the grubs they got. The boys would go for the grubs pretty effectually and twice in a season generally rooted them out. There is another way to get rid of them for good and all. It is well known that the beetle that deposits the egg has got to do it where there is cover; it cannot do it on clean land. If the land has been kept clean for a year or two before planting you will not be apt to get grubs in the strawberries.

Mr. Race.—I use wood ashes because I have them. I use larger quantities than is necessary, but I prefer to do that even though it sometimes injures my vines in order to be certain of being rid of the insect pests. But I would like to know if there is not danger in giving land too much ashes. Is it not possible that the texture of the soil will be destroyed? I would like to hear Prof. James on that quettion.

Mr. C. C. James (Toronto).—There is the possibility suggested, but not a probability. If you have an unlimited supply of ashes you might make your land too much of an ash heap. The greatest objection to the excessive use of ashes would be the danger to the plants from the strong alkali of the ashes, but if the ashes are a little weathered as they will be by exposure to the air there is not much danger.

Mr. Rice (Port Huron).—Mr. Garfield, president of our society, tried hard-wood ashes on his lawn. He made a line and on one side he scattered ashes liberally and on the other he did not apply ashes at all. He says that he has watched that lawn for years and his neighbors have watched it and they cannot see the slightest difference in the grass on the two sides of the line. They may be able to see it later, but I think you had better not pin your faith to wood ashes.

The Secretary.—My experience is totally different. I have used hard-wood ashes for years and the difference between the places where they are used and those where they are not used is very plain.

APPLES FOR THE SEVERAL DISTRICTS.

Mr. BEALL (Lindsay)—Presented the report of the Committee on Apples Suited for Cultivation in the various districts of Ontario. He said: "It is not necessary for me to read this report as the Secretary has distributed printed copies of it, but I think that I should state the means we have taken to find a basis for the opinions expressed in this report. I wish it distinctly understood that this report is not the opinion of an individual or even of the committee alone. This is the report of the committee embodying the opinions of a large number of persons throughout the province. In the first place every director was furnished with forty or fifty circulars giving the names of almost all known varieties grown in Ontario, with the request that they would send them to the principal growers with another circular asking the growers who were addressed to mark the 12 varieties best suited to their several districts. In many cases this was done, but not in every case. The report of the commttee was based in some cases altogether upon the reports sent in by the growers of a district. The committee had a meeting at the last winter meeting of the Association. Some of the directors stated these facts and also stated that in their opinion the report thus submitted could be very much improved. A resolution was passed referring the report back to the committee for the purpose of getting a report from each of the directors. This was obtained after a great deal of trouble. The reports thus brought together were sifted by the committee. The committee did not in every case adopt the reports brought in by these parties, but still they did adopt them to a very considerable extent. The committee desires a full discussion. They would like to hear any objections that can be made and would make any alterations that in the opinion of the Association may be necessary. There is one other remark: I would ask those who take part in the discussion to note the second line of the report. It will be observed that the committee was appointed for a special purpose—to select the apples which may be most successfully and profitably grown in each of the electoral divisions of this province." We were not appointed to choose the best apple or the one you or I might like the best as an eating or cooking apple, but those that can be most successfully and profitably grown in the district.

REPORT OF THE COMMITTEE ON THE DISTRICT FRUIT LIST.

To the Fruit Growers' Association of Ontario:

GENTLEMEN,—Your Committee appointed to name the varieties of apples which may be successfully and profitably grown in each of the electoral divisions of this province, the number of such varieties not to exceed twelve in all, viz., three summer, four autumn and five winter, for any district, beg to report the following lists:

(The lists as amended appear in Appendix II.)

In compiling these fruit lists we have consulted the directors as well as the leading fruit growers throughout the several districts. We have also tried to frame the lists so as to advise the planting of such varieties as bear the highest general points for each district for hardiness, growth, bearing, shipping quality of fruit and commercial values, both in local and foreign markets. In point of season, we have drawn a line for summer apples up to September 1st; autumn to December 1st; and after that date, winter; upon the understood principle that varieties arriving at maturity within the periods named belong to such seasons, although many, if not all, the varieties named are often kept and sold in market later in the season. We are also well aware that a few of the varieties named are placed in this list a little out of proper season so far as some sections are concerned; but, as it is necessary to draw a line, we have done so, taking the province into consideration and the area within which such varieties can be most successfully cultivated.

THOS. BEALL,
P. C. DEMPSEY,
ALEX. MCD. ALLAN,

Trenton, 5th August, 1891.

The first section of the report, that relating to District No. 1, was read.

Mr. BEALL.—I should state the Secretary or some other person has taken upon himself to change the name of an apple contrary to the desire of the committee. That apple has three different names—La Rue, Baxter, and another name that I do not exactly remember. The committee came to the conclusion that the Baxter was the legitimate name. They had good reasons for coming to that conclusion. Perhaps there may be an explanation forthcoming of the reasons for making the change.

The SECRETARY.—I took the responsibility of making the change, believing that the La Rue is the proper name of the apple, and I think I can give reasons for that belief. This may not be the time to discuss the question, but I think the Association should decide upon the matter. Of course, it is not a matter of any account to me, and, of course, the same is true of the committee; but so far as I am concerned I desire to see justice done to the originator of the apple. I see Mr. Nicol, of Cataraqui, present. As it is to him that we are indebted for bringing the apple to our attention, I think we ought to hear from him on the subject.

Mr. NICOL.—The original tree belongs to a family by the name of La Rue, at Young's Creek, eight miles west of Brockville. That tree is still standing. When the tree commenced to bear Mr. Baxter grafted some and peddled the fruit around Brockville, finding good sale for it. Some people, for that reason, call it the Baxter apple. I think the proper name would be that of the originator—La Rue.

Mr. BEALL asked for the opinion of Mr. Dempsey upon the matter.

Mr. DEMPSEY.—I have met the apple under three names. I was a good deal younger than I am now when I first saw it. Mr. J. P. Moore, of Bloomfield, was growing it. It is an upright, straight grower, but the objection to it is that the apples blow off prematurely. I believe the Baxter to be the proper name of the apple. The name La Rue is new to me. I have heard of it as the Red Pound. It seems to grow well in the east, and Mr. Caston has told me that the apples did not blow off the trees prematurely there.

Mr. MORRIS.—I believe that the originator should have the honor of naming a fruit, and I will therefore move that the apple known hitherto by the three names of Baxter, Red Pound, and La Rue, be hereafter known to this Society by the name of the La Rue.

Mr. SMITH.—I second that motion. I think it no more than right that a fruit should bear the name of the originator.

Mr. BEADLE.—It has been the rule of the American Pomological Society that the person who first published a description of the apple had the right to name it. I do not know that this apple has been ever described as the Baxter and I do not know that this Society has ever adopted the American rule. But I think all should have a rule on the subject to save further trouble.

Mr. HOLTON.—I have grown this apple for many years and have known it under different names. This apple came before this Association years ago, being introduced from Barrie. The Society then decided that it should be known as the Simcoe.

Mr. CASTON.—This apple was brought to our town by a nurseryman from Brockville. He called it the Red Pound. Since then it has been exhibited at meetings of this Association, and, as Mr. Dempsey says, it is shown to have been the same as the Baxter.

Mr. NICOL.—I may be in a sense responsible for giving the apple the name Baxter. I sent some scions to old Mr. Leslie the Toronto nurseryman, and told him that I had got them from Mr. Baxter's trees. I believe he called it the Baxter though he had no right to do so.

Mr. BEALL.—Our reason for taking the name Baxter was the principle mentioned by Mr. Beadle. There were two articles in the *Horticultural Journal* in which it was claimed that the apple was grown before Mr. La Rue came to the country. Mr. Baxter was the one who introduced it and disreminated it, and we believe that Baxter ought to be the name. Of course, it is for the Association to decide, and the members of the committee personally do not care what the decision is.

Mr. A. McD. ALLAN.—If our Society desires to follow the general rule it will name the apple after the originator. That is the rule of the American Pomological Society and the Horticultural Society of Britain. So far as I know this apple was originated by one Baxter.

The SECRETARY.—But Mr. Nicol, who knows the facts better than any of the rest of us, states that the apple was originated by La Rue and that Baxter only top-grafted it on one of his seedling trees.

Mr. ALLAN.—If that is so, it ought to be named the La Rue. We ought to know whether as a matter of fact it was originated by Baxter or by La Rue. In any case I will say this—it is an excellent apple, one that has value in it.

Mr. NICOL.—I assure you that La Rue originated the apple.

The resolution was carried.

Mr. TURNER.—I would like to call attention to the division of these varieties into fall and winter apples. In my district many people call the Fameuse and the Wealthy winter apples. It would be as well to have that settled.

Mr. CASTON.—A nice question arises as to an apple that will keep into December or say until New Year's. The La Rue was first called a fall apple, but it is now called a winter apple because it will keep in fair shape until February. The same with the Snow and the Wealthy. The further north you can grow the apple to maturity the longer it will keep. In District No. 13, I think the Ben Davis should be struck out and the Wealthy substituted, and I move that that be done.

The SECRETARY seconded the resolution.

Mr. BEALL.—An apple should be considered to belong to that season when it arrives at its best. Now, any time from 1st September to 1st December the Wealthy is at its best. It can be kept after that time, but after the beginning of December it commences to go back. Considering that and the differences in condition in different parts of the province, I think it would be best to class an apple as an autumn apple in one district and as a winter apple in another. The committee decided that an apple that was at its best between 1st September and 1st December should be considered a winter apple.

Mr. WILLARD.—With us I have seen the Wealthy keep with ordinary care until the latter part of January, and considered them then at their full flavor.

Mr. A. McD. ALLAN.—This report would furnish material for a week's discussion. In order to give a list of apples for each section that we could be reasonably sure of, of our own knowledge, we would need to know the climatic conditions of each district by sections. We know that those conditions vary greatly. The conditions even at points within a few miles of each other will vary greatly. I know of sections on the Lake of the Woods and Rainy River where the Northern Spy grows to perfection, but it is a small section. The Ben Davis is spoken of as not hardy. It may not be where it has come under the observation of the person forming that opinion of it. Yet half a mile away from there it may be perfectly hardy. We did not understand that we were drawing a hard and fast line as between the fruits of different seasons. That line will vary according to the local circumstances.

The PRESIDENT.—The committee were in consultation with the growers for two years before preparing this report, and I think we might allow it to stand for a year or two before tearing it to pieces.

Mr. Caston's motion was carried.

Mr. PETTIT moved that the report be adopted as a whole.

Mr. CRAIG seconded the motion.

Mr. MORTON.—I would like to point out what seem to me to be important inconsistencies as between this list and the catalogue of fruits prepared for use in exhibitions by this Society. I think some of those who prepared that catalogue are also members of

this committee. I know we spent enough time over the catalogue, and I believe no objection has been raised to the classification in it. In this catalogue the Wealthy is put down as a winter apple, but in the list prepared by the committee it is classed, in every district except Mr. Caston's, as an autumn apple. In this report on District No. 8, the Princess Louise is classed as an autumn apple, while in the catalogue it is classed as a winter apple. Whether right or wrong we ought at least to be consistent.

Mr. DEMPSEY.—One list is for the whole province and the other is for the province by districts.

Mr. ALLAN.—We fully recognised the difficulties arising out of the fact that owing to climatic differences an apple which is properly classed as belonging to a certain season in one district is quite as fairly classed as belonging to a different season in another district. We recognised these difficulties and wished to have them brought forward.

Mr. RICE (Sodus).—In Southern New Jersey the Rhode Island Greening is called an autumn apple. But when you pass to the matter of a central line it becomes a winter apple. Climatic differences account for that. We would classify Baldwins and Greenings as fall apples in one catalogue, and as winter apples in another. But that would not make any difference, for the buyers take the apples for what they are, rejecting them if they are not up to the mark.

The SECRETARY.—I wish to move an amendment respecting District No. 8. The Princess Louise is classed as an autumn apple for that district. You will see samples of it on exhibition in the other room. It is not in prime condition until this time of the year, and it keeps until February. The Ribston Pippin is classed among the winter apples, but without great care you cannot keep it. It must be shipped early in the fall to reach England in good condition. I would move that the places of the Princess Louise and the Ribston Pippin in the list for District No. 8 change places.

Mr. SMITH seconded the resolution, which was put and carried.

Mr. CASTON.—As to the Ben Davis I would not condemn it if anyone says it is worthy a place. I might ask that the Wealthy be added instead of being substituted for the Ben Davis. I find it as only half hardy and of poor flavor, but if anyone wishes to plant it I would not discourage him.

Mr. WOOLVERTON.—This is one of the cases in which we should be careful before amending the report. As to the Ribston Pippin, I would like to know if Mr. Race finds it a winter apple.

Mr. RACE.—It is one of the best keeping apples we have. There are apples I would change in preference to that if we were making changes at all. But I think enough time has been taken up.

Mr. ALLAN.—We are apt to cause a loss to the grower by making those changes. The buyers pay only seventy-five cents or thereabouts for fall apples, where they pay up to $1.50 for winter apples. The Ribston Pippin has always been sold as a winter apple, and there is the practical objection I mention to making any change.

Mr. HOWELL moved that the Early Harvest be struck off the list for District No. 9 and the Red Astrachan substituted.

The SECRETARY seconded the motion.

Mr. N. AWREY, M.P.P.—I want to impress upon the members the remarks already made by Mr. Allan with regard to this classification from fall to winter apples. After all we represent the great body of fruit growers in Ontario, and by radical changes in the way of taking from the list of winter apples and adding to the list of fall apples, we are apt to do injury to ordinary fruit growers. Winter apples are being bought at an advance of fifty cents a barrel over autumn fruit. As the growers classify the apples so will the buyers classify them, unless the buyers are fools, which they are not. If an apple will not ship as winter fruit and reach the Old Country in condition to do the Province of Ontario credit, it is well enough to make the change, but if whatever is classified as fall fruit will be bought as such, I think we should pause before making such changes.

Resolution submitted by Mr. Howell was carried.

A similar resolution as affecting District No. 7 moved by Mr. Holton and seconded by the Secretary, was carried.

The report was adopted.

Mr. MORTON called attention to the fact that Mr. F. L. Hamilton, Cromarty, elected at the meeting on Wednesday evening as director for District 11 was not a member of the Association. He moved that J. D. Stewart, of Russeldale, be elected director for that district.

The resolution was seconded by Mr. A. McD. Allan and carried.

CAN BLACK CAPS BE MADE PROFITABLE?

On resuming in the afternoon the Association took up the discussion of Question No. 3 on the programme, "Can Black Cap Raspberries be profitably grown in Ontario?"

Mr. A. M. SMITH.—I would answer the question briefly—Yes, if you have suitable soil and location.

The SECRETARY.—What sort of soil and location do they require; because I find they do not pay me very well?

Mr. SMITH.—A rich loam well drained.

The SECRETARY.—How many years will they continue to pay after you plant them out?

Mr. SMITH.—I have had them pay very well for four years after replanting. They ought to pay about as well as strawberries.

Mr. RICE (Port Huron).—Mr. John M. Huffman, of Port Huron, who is a large grower, was able to control the market. He built a Mason evaporator such as that mentioned in the last number of the *Horticulturist*. When he found the berries likely to be left on the hands of the grocerymen he took back the old and gave them fresh berries instead, and put the old ones through the evaporator. He kept the market from breaking, and next week when the price was higher he was the favored grower among the grocerymen, because he had stood by them.

Mr. RICE (Sodus).—Our people grow many raspberries for drying, and they sell them green to some extent. They sell them at 6 to 8 cents a quart, the buyers furnishing the crates. They can grow and dry them for 15 cents a pound. A year ago last fall they got from 25 to 30 cents, and from that down to 15 cents. Last year they were very low—from 14 to 16 cents. They consider it a good business at that price. The cost of drying is trifling. Many of them are dried in the sun, though they call them evaporated berries.

SELLING AND MARKETING FRUITS.

The next topic (No. 4), "How to sell and market our fruits so as to avoid glutting our markets," was then taken up.

Mr. E. D. SMITH (Winona), introduced the topic. He said: "I do not hope to solve this problem by any means, but I may be able to offer some suggestions which will be of use. It is difficult this year to prevent a glut, because there is too much fruit going forward. But I have seen times when the crop was light where there was still a glut, because the fruit ripened suddenly and a greater part of it at once. But people did not buy freely, not knowing that the bulk of the crop had come forward. In a few days the price was high and people could not get the fruit though they were

ready to buy. By some concerted action and informing the parties to whom the fruit was shipped that the crop was likely to be light and if some money was spent in sending out circulars stating the facts, a great deal could be done to prepare people, so that when the crop did come on the market they would be prepared to take it. Another point is not to plant a large quantity of any fruit for which there is not a large outlet. There is always a large market in Britain for fruit that can be sent there in good condition. The canning factories also afford a large market for some kinds of fruits. In planting peaches, for instance, I think it would be folly to plant a large number of early peaches, that are not goood canners. It is folly for a man to plant extensively of one kind of fruit because at the time of planting they happen to be high—Alexander peaches, for instance. In a few years there will be a glut in the market and those peaches will bring ruinously low prices. Then one ought, in planting, to consider his location. If I were at Georgian Bay and planting plums, I would not plant early varieties, because they would come in competition with the later varieties in the Niagara District. If we here were to plant the early varieties, and they in the north the later varieties, there would not be nearly so much probability of a glut in the plum market. I presume that the idea in the mind of the person who suggested the question was that there might be some such institution here as the Fruit Exchange in Delaware. I do not know much about that matter, but I presume something might be done by concerted action among the growers, but I have not so very much faith in it. We ourselves get reports from the different markets in the province and know just about where things are selling highest. But there are others posted as well as ourselves, and where the highest prices rule to-day you must not ship to-morrow or you will get low prices. I understand that the idea is to have an executive at whose direction we ship to this point or that. But I think I see the Niagara fruit-grower shipping to London if he knew prices were twenty-five per cent higher in Montreal. There would be a great deal of kicking and I don't think the scheme could be worked successfully. Another factor in preventing a glut in the market, and perhaps the most important of all is to put on the market nothing but sound fruit. Let it be known that whatever you send out is first-class. When apples were selling ordinarily at ruinously low rates some shippers made money, because they had a reputation and their fruit sold above the ordinary prices. This year some buyers predicted a crash because of the immense quantities of fruit thrown on the market. But the market for Canadian apples never broke, for the reason that the Canadian shippers have learned to pack so well and the fruit was put upon the market in first-class shape. The same reasons apply in shipping our local fruits. Put only your best peaches on the market, allowing the seconds to be used in the canning factories. Grapes to-day are selling at a loss. Many shippers last year held their grapes and made money. Last year there was a shortage. This year, as so many held, and as it was such a splendid fruit year, prices are low. That need not discourage us. I believe that grapes can be put on the market here in such shape as to drive the foreign grapes out and give us the market which is so large that if we get it we can extend our vineyards. What stands in our way, is not that our grapes in condition are not infinitely better than the California grapes, which are tough and tasteless, but for the last two months there has been one continual stream of trash put on the market. There was a frost early this year and frozen grapes have been going on the market ever since. Those who had good grapes held back until their fruit was spoiled and that also went upon the market in bad condition. This has so disgusted and discouraged the buyers in the cities that they have turned to the Spanish and California grapes because they look well and because, as we are told, people feed through their eyes.

A MEMBER.—What varieties of Canadian grapes would you plant for winter market?

Mr. SMITH.—Rogers and Vergennes. The Lindley was the first grape to ripen by four or five days. The Agawam will keep better, but it is not so good a grape, and in some parts it will not ripen. The Salem is an excellent keeper. I would recommend the Rogers, 4, 44, 9 and 43. Those that will not keep sell them at once, those that will keep, keep and so the price will be kept up.

The SECRETARY.—Could anything be done by a better distribution of fruit, seeing that the markets of our country are so small.

Mr. SMITH.—The greater distribution, of course, the fewer gluts there will be. There has always been and always will be means of distribution. I believe if the growers would ship direct to small towns and so do away with the commission man it would be a good thing. We cannot avoid having commission men in the large cities.

Mr. ALLAN.—Mr. Smith has struck the key-note in what he has said about quality. When people find the largest strawberries settling to the top of the box, or small and wormy apples in the middle of the barrel, that is what disgusts them and spoils the market. Another important point is, as to the distribution of growth. That is a work this Association must undertake sooner or later,—to arrange in some way the distribution of the growth of fruits over this province. It could then be arranged that growers in the various localities would produce those varieties which they could produce in perfection. If that is done the buyer desiring any particular article knows just where to go to get it at its best. We will get the benefit of increased consumption in the market we ship to, and there will be little danger of a g'ut.

Mr. PETITT.—I believe it is the demand that demoralizes the grower. For instance, this year, early wind-fall pears brought about $1 a basket, but when the fruit was ful'y ripe it would not bring more than half that. The same is often true of grapes. When a grower is in the business to make money he naturally tries to meet the market and so gets demoralized.

Mr. CASTON (Craighurst).—This is a matter of greater importance to the growers of the Niagara Peninsula, I believe, than to us. I was struck with what Mr. Smith said about the distribution of fruit. This fall I gave one of our grocers the card of a Niagara man and recommended him when buying to write direct to this grower. He said he dealt with a commission man and could make better terms in that way than dealing with the grower. It seemed to me there was something wrong there. If the growers would make better arrangements for shipping to the small places, I think it would be wise. There is a great region from Ottawa to the prairies of the North-west, where none of the fruit is grown and it has many towns that in the agggregate would take a large supply.

Mr. RICE (Port Huron).—It is not an easy matter to work up the reputation of a brand. One difficulty is that of shipping in old packages. Yet when some of our growers decided not to use the same package a second time, they found others selling inferior fruit under their brand. Referring to what Mr. Caston says, when the glut existed in the peach market with us I went to peach growers in the western part of the state and asked quotations. They quoted twice or three times what the goods were selling in Chicago for. I dealt with a commission man. And I want to say that the article you buy from the commission man is not always inferior.

Mr. F. G. H. PATTISON (Grimsby).—I think growers should try to extend their own private customers as much as possible, especially in the neighborhood of large cities. I am not sure but it would pay a grower to send a printed circular to the good business men and private families of the city to let them know that he can guarantee them a fine article in different lines and at reasonable prices. Many would be glad of the guarantee and would pay a little more for it. Of course the grower would have to carry out his contract and supply a really first-class article.

Mr. SMITH.—I have often avoided the glut by getting orders early in the season. Take plums for instance, I get orders in advance for plums to be furnished when they are the cheapest and at a reasonable price. Then when the glut comes I have no surplus to dispose of.

PEARS AT EXHIBITIONS.

Mr. Beadle reported for the committee which had been appointed to prepare a catalogue of pears for the guidance of judges in exhibitions. He said: We were supplied with a catalogue of apples and intimation was given that we might make that the groundwork and make our list of pears correspond as nearly as possible with the catalogue of

apples. We have gone over quite a list of pears and have taken those most generally grown and most likely to be exhibited. Our report is in a sense tentative. We submit it here in order to get all the information we can from gentlemen who are here to-day. This committee was composed of one gentleman from Prince Edward County, one from Hamilton, and myself who know more about the fruits in the neighborhood of St. Catharines. We three, of course, cannot be supposed to know all about the effects of climate and situation upon the quality and value of these different pears.

(This list as reported appears in Appendix II.)

Mr. ALLAN.—If we were to discuss that report for a month the subject would not be exhausted. So far as I am concerned, I would make some changes, but I cannot recollect the details of the report sufficiently to be able to say off-hand what those changes would be.

The SECRETARY.—I move that the report be referred back to the committee to consider changes that have been or may be suggested, and that Mr. A. McD. Allan be added to the committee.

Mr. BEADLE.—We have confidence in Mr. Allan's opinion, but after all it is the opinion of one man only. A good deal of the difference of opinion as to the quality of pears is based after all upon matters of taste. If you will add a member from each section of the province you will help the committee very much.

Mr. ALLAN suggested that the report should be printed and ready for discussion at the next meeting.

Mr. CASTON suggested that circulars should be sent to the different pear growers throughout the country in order to get their opinion based upon the modifying effect of location and climate.

The SECRETARY said this was hardly necessary as this was a list for the whole province, and for use in exhibition and not a list for different districts.

Mr. ALLAN moved that the report be printed so as to give the members opportunity to consider it during the time between now and the next meeting, and moved that the report be adopted on this understanding.

Mr. BEADLE.—You ought to enlarge the committee by appointing Mr. Allan and also somebody from Essex or Kent.

Mr. BEALL.—I do not believe in enlarging the committee, for even a very large committee will include but a small proportion of the growers. I would send invitations to every person interested in pear culture to send in suggestions. An enlarged committee means increased expense with little or no advantage.

Mr. BEADLE seconded Mr. Allan's resolution which was carried.

WANTS OF FRUIT-GROWERS.

Mr. A. M. SMITH, of St. Catharines, read the following paper on "The wants of fruit-growers:"

The subject that has been assigned me is a very fruitful one, and if I had the time and ability to portray all the wants of fruit-growers, it might, I fear, become a frightful one. But I have no intention of frightening you, but wish to enlist your sympathy in their behalf and ask you to assist in relieving some of the most pressing of these wants. Some of our old poets have sung

> "Man wants but little here below,
> Nor wants that little long."

I don't think the writer of that intended to apply it to fruit growers; if he did he didn't know much about their wants, for they do want a great many things, and how long they will want them depends a great deal upon their own individual efforts

First and foremost I think they want a greater appreciation and understanding of the importance of the work in which they are engaged, and a better knowledge of that work and of the adaptability of their country to produce fruits and a determination to improve and develop the vast resources at their command. How few of us, even fruit growers, realise the fact that there is not another province in the wide world that is so well adapted or has so much territory that is adapted to growing some of our best hardy fruits, particularly the apple, as the province of Ontario has. It is a well-known fact that the farther north you can ripen this fruit the better will be its quality and the better it will keep, and it is another well-known fact that it succeeds best along the shores of large lakes and rivers; and what other country is there where the climate is adapted to fruit that is so completely encircled by lakes and rivers, and has such an extent of shore as Ontario has, take it from her eastern boundary on the St. Lawrence around to Georgian Bay besides her lakes and rivers in the interior.

We all know, or ought to at least, that our apples take the lead in the markets of the world and that we have a vast industry in producing them and the other fruits, that thrive so well in this climate. But many of us want waking up to a knowledge of the fact that we have only just began to develop our vast resources, that the fruit business of Ontario is but just in its infancy and that, if we make it what we should make it, we want not only the combined influence of fruit growers but of fruit consumers and of every lover of his country, and particularly the influence of our legislators. It is true, we have made great advances in this business within the last twenty years, and overcome many obstacles that hindered its progress; but there are yet many more that exist and the *great want* of the present is *united efforts* of fruit growers in using the means we now have and in devising others to carry on this work.

Some of our most serious hindrances to our progress are the diseases that affect our trees and insects that destroy our fruit. We *want* a more united effort to arrest and exterminate these. We already have laws for the prevention of the spread of the Yellows among peach trees and the black-knot on plum and cherry trees, two diseases that have destroyed entire orchards of these, our most delicious fruits, in some parts of the country; and yet how seldom are these laws carried into effect, notwithstanding that, where they have been rigidly enforced, these fruits have been saved in a great measure from the ravages of these diseases; and the *want* of concerted and united action among growers, in the destruction of other fungus diseases and insects has served to perpetuate and keep in existence these pests. For what use is it for me to try to exterminate the codling moth or curculio, when my neighbor just over the fence allows them to remain and breed a new crop to come over and destroy my fruit next year. I may save my crop by perseverance and care the present year; but I shall have to renew the fight again next year: whereas, if my neighbors around me would all unite with me, we might in time get rid of them. Another want that has seriously impeded our progress in the past, has been the want of proper facilities for shipping and handling our fruits, particularly those of a perishable nature. Transportation companies have been slow to provide proper cars and rapid transit for these fruits and the consequence has been great loss from improper handling and piling fruit in bulk, in frail baskets one upon the other, and detention of trains, etc. But I am happy to say there has been a marked improvement in this respect within the last two years; railroad and express companies have shown a disposition to supply some of our wants, by putting on a few shelved cars and giving us a fast freight train, and we want to keep on agitating this subject and show them the vast proportions this traffic is assuming, and I doubt not but their own interest, if not ours, will induce them to comply with our reasonable demands and give us what we need. Another serious obstacle in the past has been the want of knowledge of what to plant, or what varieties were best adapted to the various sections of our country. This has been in a measure obviated by information gained and disseminated by this society, in sending out trees and plants to be tested in different localities and by information distributed through the *Horticulturist*, and the annual report concerning our society: yet there is still a great want in this respect. Every year there are large numbers of new varieties introduced by nurserymen and their agents, with marvellous accounts of their value and productive-

ness, claiming them to be far superior to the old sorts in cultivation, and progressive fruit growers who are anxious to have the best are often induced to pay exorbitant prices for them and spend several years in testing them, and at last find in a majority of cases that they are worthless or wholly unsuited to the climate, and in this way thousands of dollars are lost annually to the country. Now to remedy this evil we *want* an experimental station somewhere in the fruit belt of western Ontario, where all such fruits can be tested by a competent person, or persons appointed by the government, and an unbiased report given upon their merits by those who are not in any way interested in their sale, and, in connection with these fruits, there could also be tested various fertilisers, insect and fungus remedies, etc., and other experiments conducted, which would be of great value to the country at large, but which are too expensive for individuals to work out by themselves. This matter was brought before this Association at its last annual meeting and a committee appointed to interview the government and devise means for securing this object. This committee called upon the Minister of Agriculture, the Hon. John Dryden, and were cordially received, and their project seemed to meet with his approval; but, as it was near the close of the session, and there was so much other business claiming the attention of Parliament, he thought it would be useless to lay the matter before them, but advised agitating the subject and getting the country acquainted with our wants. It has been argued by some against this project that we already have stations for conducting these experiments at Ottawa and Guelph; but such persons forget that both of these places are quite out of the fruit growing section and that it would be useless to try to grow most of our finer fruits there; although there is being done a great work in this line at Ottawa, in testing and growing fruits that are adapted to the colder portions of our country. Many of the neighboring States have branch stations, outside these experimental farms, for this work, and why would it not be of as much value to us as to them? Would not an institution of this kind be of more value to the country at large than many of our railroads, which the government has subsidised. I can see another *want* looming up in the distance for which we shall have to ask government aid if we wish to maintain our credit as the best fruit producing province in the world—I mean the want of funds to enable us to make a creditable display of our fruits at the coming World's Fair in Chicago.

It is a well-known fact, that our fruit exhibit at the Centennial fair in 1876, did more to enlighten the world, in regard to the climate of Canada, and to disabuse the minds of the nations in regard to its being a land of perpetual snow and ice, than all other exhibits combined, and that exhibit and the Colonial exhibit in England, were the means of placing our apples in the front rank which they now occupy in the markets of the world, and I doubt not, has been the means of bringing a large tide of emigration to our country, and the money granted by the Government on that occasion could not have been better expended, and I doubt not, but they will be willing to give us a larger grant for this occasion, and we *want* to be looking ahead and forming our plans for a display that will keep up our reputation and do honor to our country.

Perhaps you think I have spread enough of our wants before you, but I cannot refrain from mentioning one other which I might term an individual want in some of our fruit growers, and that is, the want of common sense in placing green and diseased fruits upon the markets, particularly grapes and peaches. In their insane desire to be the first in the market and get the hightest price, they often flood it with trash that is unfit for the pigs to eat, which disgusts consumers and does more to injure the fruit trade than all other causes combined. We want a law to remedy this evil and we want inspectors appointed in all our markets to confiscate this stuff and fine those who offer it for sale. And now in conclusion, as before intimated, we want your help and influence in relieving these wants; talk with your neighbors about them, talk to your member in Parliament if you have one, and show them what we want is for the best interest of the country, and if you have not got a member, as some here have not, see to it when you do elect one that he know enough about fruit and fruit interests to attend

to these wants. Identify yourselves with our Association if you are not already members and help us to make this Ontario of ours what it should and is destined to be—the great fruit garden of America.

Mr. C. C. JAMES, Deputy-Minister of Agriculture was then called upon. He said: I am here to-day at the kind invitation of your secretary. Before going into my subject I would like to say on behalf of the Hon. Mr. Dryden and all the members of our department, that we wish your society the utmost success. Mr. Dryden is unable to be with you on account of engagements which take him to other parts of the province. Considering the relationship between the department and this Association I thought it might be profitable to speak upon the subject of co-operation between the two. There is no doubt that the horticultural department of agriculture has been making more progress than almost any other. In looking over the statistics I find that the area devoted to gardens and orchards has increased in more rapid proportion than the population, and more rapidily than the area devoted to other crops. I would like you to go into the figures of 1891 which will appear shortly and compare them with the previous years. From 1861 to 1871 according to the census, the growth was from 88,869 acres to 207,311 acres, I think, and in 1881 it had increased to 304,805 acres. I was looking over an old book that came into my hands, which some of you may have seen—"The Statistics of Canada," by Robert Gourlay, printed in London in 1822. In that book the author makes the remark that the province of Ontario bids fair to surpass the world in the production of apples. He must have been a shrewd observer indeed to foresee so clearly at that time the possibilities of this country. As to your relations with the Department I would speak first of your annual report. You have been for the past two years one year behind. The report of your meeting of last year with the papers and discussions has not yet been issued. This year, with the assistance of your officers, we propose if possible, to remedy that and to print under one cover the report of 1890 and that of 1891, and we hope you will assist us from this time forth in keeping up with the times in the publication of your report. We propose to publish at the same time with it report of the Entomological Society. The two subjects are so intimately related that the same persons usually require both reports, and so we propose to put them under one cover. The requests for these reports are becoming more and more numerons. The general public are looking more and more to you for information concerning the various kinds of horticulture. It is important, therefore, that you should not fall behind in publishing your proceedings, for in these reports the public have the latest and best information, instead of being obliged to refer to a text-book embodying the ideas of five or six or perhaps ten years ago. We have now in press and shortly to be issued a special bulletin devoted to the farmers' institutes. In that bulletin the general work of the institutes is outlined and a plan for the holding of the meetings in January will be given. You have materially assisted in the past by sending out a number of speakers for these institutes. I hope the Association will not limit itself in the assistance given to farmers' institutes simply to the few men sent out, The work done by the members of the Association in connection with the winter meetings of the farmers' institute has benefited not only the farmers, but also the members of your Association who have taken part and possibly the membership of the Association as a whole. There is just one point in that connection that I would like to mention, if you will allow it, and I base my statement simply upon criticisms that have come from all over the province. Every man, especially every fruit man, who is to address these meetings ought to study beforehand very carefully the climate, soil and other conditions of the locality into which he is going. We have had it pointed out, here again and again, that what is best for one county may not be best for another. By informing himself in advance of the conditions of the locality, one taking part in this work will carry greater weight and give more useful information. Accompanying the bulletin we publish a list of agricultural books numbering 100 to 125. We have given not only agricultural and allied journals in this country but also the leading foreign journals, and also some 125 books selected by the best men in the various departments, and dealing with agriculture, horticulture, dairying and other branches. We intend to send these bulletins broadcast, and if you can make use of them you can have them by applying to the Department. We issue from time to

time bulletins upon various subjects. We have published several bulletins from the college at Guelph, having a direct bearing upon horticulture and entomology. Our crop bulletins have particular reference to the cereal crop, the cheese crop and the live stock of the province, but so far we have but meagre information as to the fruit crop. This is a point we would like to remedy and would ask your assistance in the matter. There are four headings upon which we would like suggestions. First: Would such a bulletin be desirable? Is there a desire on the part of the public for special information in regard to horticulture as distinct from agriculture generally? Second: What scope should the bulletin have? Ought it to deal simply with statistics, or would it be better to go into the general conditions and methods of horticulture, showing how horticulture could be extended and improved? Then of course there are questions in regard to transportation and marketing. Third: At what time would it be well to issue the bulletin, if desirable to issue it at all? Fourth: What is the best means of collecting the information? As far as agriculture is concerned the statistics are collected in the following manner: We have a permanent list of correspondents which has been made up during the past six or seven years. As one man drops out we try to get another in his place, and if we get a good correspondent, we try to keep him. These correspondents reside in all parts of the province. We send out to these gentlemen circulars containing questions, the answers to which are filled in, giving us the information we desire, and these are all compared and the general conclusions drawn from them. But fruit growing as a special pursuit is confined particularly to a few sections and we would like your assistance in getting the information required to be put before the public. If we could publish a separate bulletin concerning the fruit industry, it would be the means of making known the merits and possibilites of this province in respect of fruit growing. If we could gather together the amount of apples, pears, peaches, grapes and other fruits produced in the various parts of the province the sum total would be sufficient to attract general attention. I hope you will take hold of this matter and discuss it and give us the benefit of your opinion, in order that I may take it back and submit it to the Minister. We trust that in this matter we will have your hearty co-operation.

The SECRETARY.—I am sure we are very much pleased to hear from the Deputy-Minister of Agriculture especially upon the last subject he dealt with. I think we shall respond very heartily to the suggestion he has thrown out. The matter has been discussed before, at any rate at our Directors' meetings, and it has been felt that in the report of the Bureau of Industries and other publications there was not sufficient attention given to the fruit growers of Ontario, and it was felt as a very serious drawback that information as to the general condition of the fruit industries, which was desired by so many people, could not be obtained. Now that the proposition has come from the Deputy-Minister to assist us in this matter, I feel certain that the Association will be glad to help the Department in this work. We ought to know by these statistics what extent of ground is devoted to the various fruits, not simply what is devoted to fruits generally, but how the area is divided among the various fruits; also, how much is used for purposes of vegetable gardening. Then we want to know what crops are grown in the various counties. Other items of information could be suggested which would be very useful.

Mr. A. M. SMITH.—I believe that in New York State they select a man for each county to make out a report as to the quantity of fruit grown in the county and the value of it. If something of that kind were done, it would assist in getting the information.

Mr. ALLAN.—This is too important a matter to be passed over lightly. I believe we should appoint a committee to take the questions placed before us by the Deputy-Minister and answer them one by one in the form of a report. There are many points in connection with the matter to be carefully discussed, and it is to the interest of all growers that a good plan should be formulated for collecting and publishing this information.

Mr. E. D. SMITH (Winona)—The paper by Mr. Smith and the speech by the Deputy-Minister are exceedingly important. I strongly believe that we need a fruit experimental station. With regard to obtaining the information, I think as Mr. Woolverton does,

that the matter has been poorly dealt with in the past. A bank manager recently asked me how many tons of grapes we produced. He wanted the information for transmission abroad. There were no statistics, but I gave him my estimate and he was astonished at the size of it. The Bureau of Industries could best collect this information.

Mr. BEALL.—I agree with Mr. Allan that a committee should be appointed. I have asked the Deputy-Minister if he will formulate these four questions so that they can be dealt with, and he says he will be glad to do so.

Mr. CASTON.—The difficulty will be in gathering the information, and this should be taken into consideration by the committee, and some good plan adopted.

Mr. CARPENTER.—The information can be got from the census of last year, which is soon to appear.

Mr. JAMES.—We do not propose to issue this bulletin for one year only. The statistical branch of our department represents a growth, and we have come to the point where we feel we ought to enlarge our field of operations. But we want to start right, along the lines that can be most profitably followed.

Mr. RICE (Port Huron.)—With us the supervisor of each township has a blank which he is supposed to fill up, giving statistics regarding the farmers and fruit-growers, but the system is found to be unsatisfactory because the supervisor has only so many days to make the assessment and this other part of the work cannot be properly done. At our last meeting we requested that a special man be appointed, not subject to party influences, to go round each year or twice a year, and take down the report from each producer of everything he raised.

The SECRETARY.—I move that the following be appointed members of the committee: N. Awrey, M.P.P., E. D. Smith, A. McD. Allan, G. E. Fisher (Burlington), and John Kernighan (Benmiller). Carried.

ADDRESS BY N. AWREY, M.P.P.

Mr. N. AWREY, M.P.P. was called upon to address the Association. He said: I wish to refer briefly to two subjects. The first is the steps that should be taken by the fruit-growers of Ontario to prepare an exhibit for the World's Fair in Chicago, and the second is co-operation on the part of the fruit-growers in holding a monster demonstration of those engaged in every branch of agriculture which we propose having in Grimsby Park next summer. Now, the Agriculture and Arts Association, of which I have the honor to be a member, are largely interested in the success of the exhibits which are to be sent from this province to Chicago. The Ontario Government have been in communication with the Association, and have asked us to prepare some plan, with estimates of cost, by which a good exhibit from Ontario may be secured. Of course, we have been rather liberal in our estimates. We are asking for a sum of money large enough to enable the agriculturists of this province to make a good display, and at the request of Mr. Carling, we are to formulate a scheme under which the assistance of the Dominion Government can be best rendered to those interested in agriculture and stock raising in making up an exhibit. The proposal is that the Ontario Government shall grant a sum large enough to pay the cost of selection of stock and all kinds of agricultural products, and also to supplement the prizes given by the Columbian exhibition as an inducement to intending exhibitors to take their stock and fruit to Chicago, and that the Dominion Government be asked to bear the cost of transportation, maintenance and care of the exhibits while in Chicago. There can be no two opinions that it is important to the province and to the fruit-growers and all engaged in agriculture that the exhibit should be worthy of the province. I think I need hardly say to you Canadians that you are expected to put forth every exertion to retain the laurels you won at the Centennial Exhibition in 876, and to uphold the prestige of the province, not only for the best stock upon the American continent, but for the best fruit as well. One great disadvantage

under which Canada suffers is that in Britain and throughout the continent there is a rooted belief that our country is one mass of ice and snow, a country whose main product is pine timber. In no way can we convince the people of the contrary more effectually than by a display of our products at the World's Fair, where people of all nations will attend. I would ask you to appoint a committee to confer with the World's Fair committee of the Agriculture and Arts Association with a view to arranging for the best exhibit of fruit from Ontario that can possibly be provided. Now, with regard to the picnic. There is a proposal to have a meeting of all the farmers that can be got together at Grimsby Park. We propose to have one of the most eminent agriculturists of the United States, who was at one time Governor of Wisconsin, to address the farmers of Ontario upon questions of interest to themselves. We desire also to secure the attendance of one of the leaders of the Liberal party and one of the leaders of the Conservative party to dicuss the trade question purely as an abstract question outside of politics. I think we shall be able to secure rates from the railways so low that it will be no hardship for any farmer to attend the meeting. The prosperity of the whole Dominion rests on the farmers, and, that being so, we desire to impress the Governments at Toronto and Ottawa with the importance of the agricultural interests, and to make it certain that when we present a reasonable demand, that demand will be satisfied. And, of course, we will never ask for anything unreasonable; farmers never do that. I commend these subjects to your consideration.

FRUIT HOUSES.

Mr. G. FISHER (Burlington) asked for information regarding houses for sorting and packing fruit so as to protect it from the weather, as he found difficulty in protecting his apples in wet weather.

Mr. CLINE being called upon to answer, said he had given a description of his fruit house last year. It might be more expensive than some would want; it cost him about $1,000. There were two hollow air chambers, the partitions being made of fine matched stock, with six thicknesses of tar paper.

Mr. DEMPSEY.—Of course, I am situated in one of the cold regions of Ontario, but we seem to have people down there who know how to keep fruit over the winter. In the county of Northumberland there are several fruit houses erected within the last few years. They have three or four thicknesses of tar paper placed between boardings. There is one firm that has shipped 23,000 barrels of apples to the Old Country, and have enough now in store to keep on sending out 3,000 barrels a month until March. One of the firm told me they would make nearly $100,000 profit this year, and that every house they had ever built had more than paid for itself the first year.

Mr. RICE (Sodus.)—Houses similar to those just described are common in the counties of western New York, but they are not used until late in the fall for storing apples. The owners prefer to keep them outside until after the first frost, even up to the 1st December almost.

Mr. FISHER.—How do they protect them from the frost until that time.

Mr. RICE (Sodus.)—The barrels protect them. We did not have frost to hurt the apples in the barrel, and we like to get them real cold.

Mr. DEMPSEY.—The cellar where I keep my apples is under a part of the house we do not use much, and as there is not often a fire there, the temperature is very low in winter. Water will freeze solid in it, and yet you never find an apple or a pear injured by frost. There is something about this that I cannot explain. You may fill a barrel of apples with water and let it freeze solid, then knock it to pieces and take out the apples and you will find them all right. I am informed that in sending apples to Portland and Boston, they prefer to ship them in the coldest weather, believing that they run less risks then than in moderately warm weather. They lay down boards in the cars that the barrels may not rest upon the floor, throw in some pea straw, throw some water over that, let the whole freeze into a solid block and they seem to carry any distance.

Mr. FISHER.—I must stick to my point about water being an injury to the fruit. I get an account from England of a cargo received which says that so many barrels were wet and a deduction is made for them.

Mr. RICE (Sodus.) —That is from the heat.

Mr. CASTON.—I would keep the apples as near to freezing point as possible, and as dry as possible. Some will stand warmth better than others. You can keep the King, the Northern Spy, or the Greening in a cellar where the Golden Russet would shrivel. I have succeeded in keeping them very well in pits. The pits ought to be lined with boards.

Mr. DEMPSEY.—I have seen them open apples on their arrival on the other side, and I know what dampness means. In what they call damp skin there is not a green spot to be seen on the apple; it is perfectly brown. You need not be surprised that two or three or even five shillings a barrel is knocked off the price. Such apples would not sell here at all. Shippers who are alive to their own interest have men to see that the apples are properly stowed on the ship. There is little danger of the apples being placed near the boilers, for these are near the centre of the ship where also is the accommodation for passengers, because the movement at the centre is less than at the ends. Thus if the apples are properly packed and properly stowed, they are pretty sure to arrive in good condition.

THE MILLS GRAPE.

Question 5 was then taken up: "How many have fruited the Mills grape? What is its value?"

Mr. WELLINGTON was called upon to answer. He said: "We fruited the Mills grape on our premises for two or three seasons and it did not turn out satisfactorily. In fact, we discarded it entirely. It would not set well, the clusters were very poor, and there was no crop to make it worth while to propagate and disseminate that variety, in our judgment. Of course, our experience was just with a few vines, but from the little experience we had we did not feel warranted in doing anything with it.

DEWBERRIES.

Question 6 was then taken up: "Does it pay to grow Dewberries?"

The SECRETARY, being asked to answer, said: "I do not think it does pay, though I have never tried it except with one or two bushes. It seems to me too much trouble to trellis it up. Considering its troublesome character you might as well grow grapevines at once. I speak of southern Ontario; it might possibly pay in the north. Perhaps some gentleman from the north could tell us his experience."

Mr. CRAIG (Ottawa).—We have had them at the Experimental Farm at Ottawa for three years. They have grown finely, but we have never seen any berries yet.

Mr. BEALL.—They are not easy to grow, and when grown they are perfectly useless.

COLLECTION OF STATISTICS.

Mr. AWREY presented the report of the committee on the proposition submitted by Mr. James, as follows:

To the President and Members of Ontario Fruit Growers' Association.

Your Committee, to which was referred the following questions: 1st. Is it advisable that a special bulletin on Horticulture be issued in 1892 and annually thereafter? 2nd. What should be its scope? 3rd. At what time should it be issued? 4th. What do you suggest as the best method of collecting that information? beg leave to report as follows: 1st, That it is desirable

to have a bulletin issued relating to Horticulture. 2nd. That such bulletin should include acreage, probable yield, as well as all information obtainable relating to probable yield in other countries, also probable demand for our fruit in foreign countries. 3rd. Such bulletin to be issued just prior to time of gathering the grape and apple crops. 4th. That the Secretary give to the Department of Agriculture the names of all members of F.G.A., as well as the names of all the Directors, to whom are to be sent the names of the members in their district, with power to add to the list all who he may consider advisable. That these men be requested to act as correspondents, from whom the Department of Agriculture is to receive statement of all kinds of fruits grown in each neighborhood, as well as acreage and probable yield. All of which is respectfully submitted.

N. AWREY,
Chairman.

Mr. BEALL, referring to the last clause of the report expressed the fear that in many rural districts it would be practically impossible to carry out the work because there were not resident in those places any members of the Association.

Mr. AWREY pointed out that it was provided that fruit growers could be added to the committee and these could be nominated by the local director. If these are reliable men reliable information will be given, and he thought in every fruit growing district there would be found men who would give fair information as to the extent and value of their crop.

On motion of Mr. Awrey the report was adopted.

MONEY VALUE OF FRUIT AND ORNAMENTAL TREES.

Topic No. 4, "Money value of fruit and ornamental trees, shrubs and plants," was then taken up.

Mr. A. McD. ALLAN introduced the subject. He said, "I am placed in a rather peculiar position. I am to appear in a couple of cases in court, which cases involve this question, and thus I have to be guarded in what I say now. I would say, however, in the first place that it will be evident that it is impossible to fix a scale of prices or values that can be useful, because these values differ so widely. In the case of fruit trees you can come nearer the mark than with others. A strong growing tree of a variety whose fruit is high in the market and in full bearing, will certainly have a specific value Generally speaking, I have placed the value of trees from the bearing year at from $25 to $50 per tree, according to the location in reference to the market and the general conduct of the orchard. A fruit tree in an orchard that has been neglected is of course not of so much value as one in an orchard which has been properly attended to. If a tree be property the husbandman who has cultivated it and provided for it suitable conditions for its growth, and has thereby assured strong healthy growth and a fine crop is entitled to the benefit of the results he has produced. A tree that is not so attended will not produce so good a crop; thus the value of trees will clearly vary very much. Another point in connection with values is sentiment. There is a sentimental value in every tree, whether fruit tree, ornamental tree, shrub or vine. It is difficult to estimate that value, of course, for it depends upon local circumstances. In one case of a very fine specimen of a rare ornamental tree I gave a value of $45. That was owing to the location of the tree, for such a tree suitably located in the grounds is of course more valuable than one hid away among other trees or behind buildings. Had the tree I speak of been in a more suitable position the value would probably have been upwards of $200. We can take fruit trees on the basis of their commercial value and strike an average of their value, taking into consideration the number of years they have to live, their average bearing and the value of the crop. On this basis we can estimate the capital value of the tree, and the amount that should be paid for it if it is destroyed.

The assessing of damage done to an orchard through it being cut into by a railway is, I am free to confess, almost wholly a matter of guess work. The question arises whether there is damage from the smoke. There is damage to some extent, I believe, particularly if the engines use coal, but it is a question how far from the track that damage will extend. In the case I have now in mind a number of instances were produced on

both sides. On the one hand it was shown that the damage had extended to a considerable distance and it was contended that the smoke arrested the fertilisation of the pollen in the blossom. But equally strong instances were given on the other side showing that there was no injury, so that I came to the conclusion that this was one of the most difficult questions to settle and I would not undertake to draw up a scale of value in such cases. I would like to hear the matter discussed. There are points that I would like to treat of, but as they are involved in specific cases now in court I do not wish to say anything to commit myself.

Mr. RICE (Sodus).—How far from the track are fruit trees damaged by the smoke?

Mr. ALLAN.—It is exceedingly difficult to say, but I believe there is damage up to one hundred or perhaps one hundred and fifty feet.

Mr. NICOL (Cataraqui) spoke of a case within his own knowledge in which the damage from a brick kiln extended to at least two hundred feet. He understood that it was forbidden by the law to burn a brick kiln in the vicinity of trees.

Mr. ALLAN.—That reminds me that one point in connection with the damage by smoke is that it closes the pores of the leaves and the result is that the leaves cannot perform their proper function as the lungs of the tree. The result is a poor growth of wood and an unhealthy tree that cannot produce good fruit. I have a case of a brick kiln which burned soft wood mixed with coal. Certainly it destroyed trees for a long distance.

Mr. DEMPSEY.—There is not always damage arising from a railway passing through an orchard. A year ago last fall I walked through Mr. Bureau's orchard, in the Province of Quebec. A railway runs right across it. I think the apples were the Fameuse and those nearer the track grew as well as the others and were comparatively free from spot.

Rev. Dr. WILD (Toronto).—Is there a fixed value to a tree 22 or 23 years old? They told me the value was $40. I thought I would be very glad to get $40 a piece for the whole orchard. The trees I speak of are Northern Spys, the best trees on this continent, of course. Is there a fixed value for these trees if the railway wants to take them?

Mr. ALLAN.—No value has ever been set by the Association. That was the idea the Association had, I believe, in propounding this question—to get at some fixed value, but I do not see how it is possible. I should judge the trees of the Northern Spy variety, of the age to be now at their full bearing capacity, would not be too highly valued at $40 a piece for really fine specimens, in an orchard that is well taken care of and near a market like Toronto.

BARREN TREES.

Question 2 was then taken up. "How may barren trees be made fruitful? Is there any benefit in (*a*) Bending, (*b*) Change of stock, (*c*) Root and top-grafting?"

Mr. GEORGE FISHER.—It was this question brought me here as much as anything else, and I would much like to get some information on the subject. I have a block of four hundred Spys, planted about eighteen years and never having borne much. The stand on a clay loam and the ground has been cultivated, but the trees have not been heavily manured. I have wondered if the fact that those trees stand in a block has anything to do with their being so barren. I have one orchard in which I have all kinds of fruit and it bears heavily.

Mr. CASTON.—Do the trees blossom well?

Mr. FISHER.—They blossom pretty well, a great deal better than they fruit.

Mr. CASTON.—Are there any bees in that neighborhood?

Mr. FISHER.—Yes; a good many bees.

Mr. CASTON.—Have you got them pretty well pruned?

Mr. FISHER.—They have been pretty uniformly pruned ever since they were planted.

Mr. ALLAN.—Is the ground cultivated?

Mr. FISHER.—A little. I have been sowing peas in the orchard. Sometimes we harvest them and sometimes we do not.

Mr. A. M. SMITH.—Is your ground under-drained?

Mr. FISHER.—The portion that is wet is under-drained, the rest does not require it.

Mr BEADLE.—It is well known by botanists that there are some plants whose pollen will not fertilise their own blossoms. This may be the trouble with these Northern Spys. I believe there is soemthing in that that needs investigation, and our experimenters should look into it to see how far it may be true that our apple orchards need to be planted with different varieties. I believe myself that it is wise for our orchardists to plant several varieties near enough to each other so that the pollen may be carried from tree to tree. Of course it is not so easy in harvesting a fruit to have to go all over the orchard to get the crop of any particular variety, but I think the trees could be so arranged as to make that a small matter and still secure fertilisation. I saw the point that Mr. Smith was driving at, that the trees were making growth too rapidly to make blossom buds. If that is the case pinning down the limbs might be an advantage. That is an old trick to gardeners—to make the limbs grow horizontally so as to cause them to bloom their best. I can remember that being done ever since I can remember anything. Root pruning is also a way of checking an over production of wood and making a tree produce blossom buds. Putting a wire around the tree will also tend to make it bloom.

Mr. ALLAN.—There is no doubt at all that the quality of our fruit has been improving. I think we may fairly say that this is largely due to the information that has been disseminated by this Association. But there is not the spirit of progress there ought to be in regard to the local shows. The system of judging is entirely wrong. They are judging fruit under the same old rules that were established years ago. I am sorry that, even in a leading association like the Industrial, they have not taken up the system of judging by points, and having the results placed so prominently before the public that they could judge easily as to the best varieties to plant.

MONEY IN EVAPORATED FRUITS.

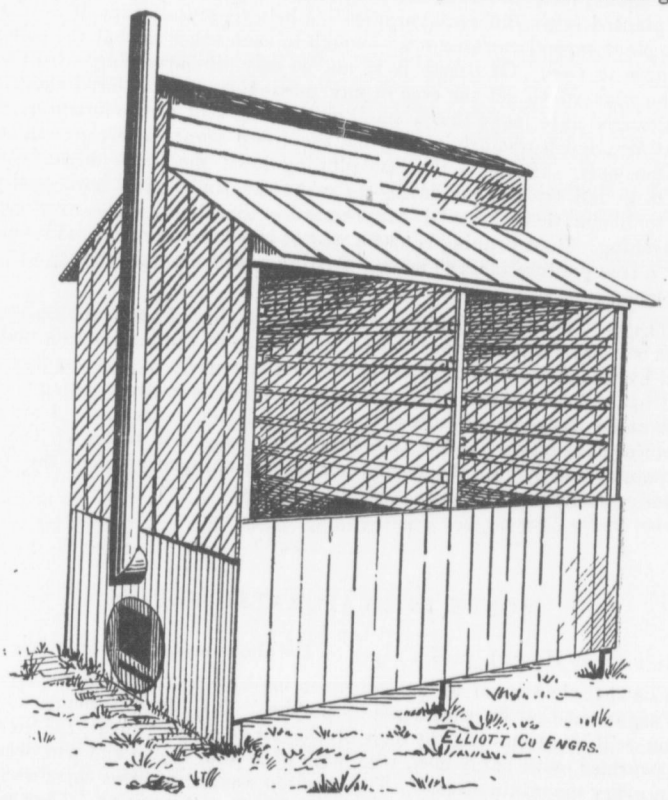
Mr. RICE (Port Huron), read a paper on the above subject as follows:—

I suppose that the title of the subject given me by our worthy Secretary, indicates the line of argument that he wishes me to pursue. That there is money in evaporated fruits no one will question. In the days of the '49 gold excitement, the Sierra Nevada mountains swarmed with hardy men, who with pick and shovel and pan, were sampling the sand in every mountain stream. The question was not whether there was gold in the sand, for gold seemed to be everywhere in greater or less quantities. They were looking for "pay dirt." Now this is just our position here to-day. We want to know if there is any "pay dirt" in evaporated fruits. To start with I will make the assertion that there is good paying dirt in evaporated fruits, if you adopt the proper method of getting it out. It is just here that you want to be very sure that you are right before you go ahead. Accept the advice that the venerable Count Von Moltke used to give. "*Weigh, and then accept.*"

Taking for granted that there is money in evaporated fruits, let us go on to consider the subject of getting it out. In doing this I would state that there are two classes interested in this work, namely, (1st) those who evaporate expressly for the money that

there is in it, and (2nd) those who produce the fruit and evaporate as the best and most profitable method of disposing of the culls of their orchards. The first do not work in the interest of the producer, but get everything as cheap as they can and work for the money that they can make out of it. They are shrewd fellows and can take care of themselves. I have nothing to say for them. It is the interests of those who own the orchards that we are looking after. I care not whether one farmer builds his own evaporator and works up his own fruit in a small or large way according to his orchards, or if a number combine and erect a large evaporator centrally, to be worked in the interest of all. It is of this class of men and their wants that I propose to treat in this paper.

The first thing to do is to estimate the amount of work that you want to accomplish during the season, which usually lasts about 90 days. If you place it at 10 to 12 bushels per day or 500 to 1,000 bushels for the season, choose the small portable dryer. I of course shall recommend the Mason evaporator, the plans of which were given in the

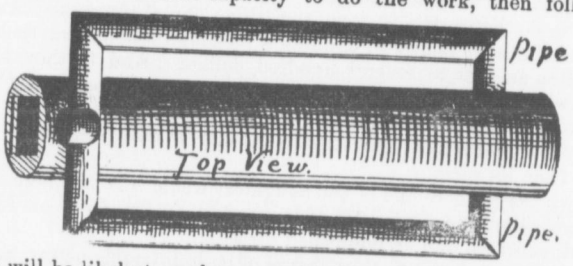


December number of the "Canadian Horticulturist," because no other furnace is made that will use refuse wood, so easily prepared, and give the same amount of heat. If you have a little more fruit, but not enough for a larger evaporator, you can easily make two of them.

If you find that you will have 75 to 80 bushels per day, or 6,000 to 7,000 for the season, I would use the brick tower, if I had a suitable building, that is, one with two floors and a basement. The Cassady evaporator is the cheapest one made I think and is as satisfactory as any. If I did not have the proper house I would put in a small steam, as that only requires one floor and underground space for boiler.

But if you combine in a neighborhood, and want to work up for a number of large orchards, and for all of the neighborhood besides, put in a first-class steam evaporator with a 20 horse power boiler and you can handle 20,000 bushels in the season. Hire a good experienced foreman and good help and you will find that you have struck on the best method yet known for getting "money out of evaporated fruit."

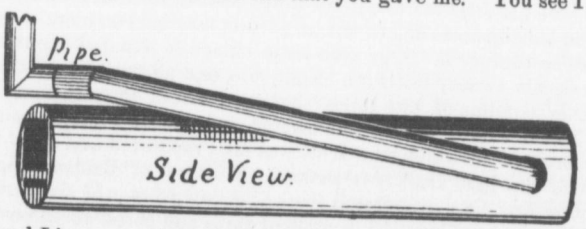
Whatever you do, estimate first as nearly as possible, the work to be accomplished, whether it be little or much,—next get the plans for some evaporator *known* to be a success in other places, and of sufficient capacity to do the work, then follow your plans



exactly, and you will be likely to make a success of it. Right here is where so many fail. It is a new subject to them ; they get several plans but don't know which they like best. Then they begin to think, they think when about their work and when at rest, they think when they are awake and dream when they are asleep.

The spirit of invention gets hold of them and they evolve, as they suppose, some new and heretofore unheard of plan. They throw aside all the others, and go to work at that. A case just to the point is in my mind, A man living some 35 miles from my place, came to see me last spring. We spent a half day or more talking of different plans and he went away expecting to come again when he got ready to build. I met him a month ago and asked him about the evaporator he intended to build. "Oh," he says, "I built one." "What plan did you use?" "I built one after my own plan." "What kind of a furnace did you use?" "I made two walls and arranged a home-made furnace." (It was similar to those in use 25 to 30 years ago by some). "How did it work." "Splendidly for a week or 10 days and then it burnt down." "Did you rebuild?" "No, I thought I would let it go for a while."

Another case, while at the meetings of our State Society at Eaton Rapids the first of this month, a man who has a small orchard spent some time asking about a cheap evaporator. I told him of the Mason, and gave him instructions how to build ; the next morning I met him. He greeted me with "Well, Mr. Rice, I was building evaporators all night, and I have struck on a plan way ahead of the one that you gave me. You see I am a sort of a



waggon maker, and I have an old box stove in my shop, and I will use that and then carry the pipe back and forth between the trays." I replied that I had built one just like that when I was a boy, but I could not get heat enough on a cold day to do the work. I told him that if he would let invention alone till he should become more familiar with the subject and follow the plan I had given him he would make a success. I don't wish to discourage the spirit of invention, but let me plead with you, if you are determined to work on that line, first make yourself familiar with all of the best methods in use, and as far as possible with those out of use that have proved failures, and then go ahead. Don't commence back forty years ago and go over that old ground again.

Having thus built your evaporator, the next thing will be how to run it. This all depends on the help that you have about the place. At this time of the year, the fruit grower usually has as much work about the farm and in the orchards as he can attend to. If help is scarce in the house there is no one that can be spared. Then the best way is to let some one have the use of the evaporator and work up the fruit on shares. Quite likely that the man who is at work for you at $1.00 per day, has a wife and large family depending on him for their support. Here is your chance. Let the woman have the job, give her the use of an old horse and waggon to gather the fruit and she and the children will soon be able to do the work and earn something for themselves. And herein the poor man will find the large family of children a blessing to him, and their earnings for the season will often amount to several hundred dollars. And if they are economical and saving, they will often use this for the first payment in the purchase of a farm, all of the subsequent payments being met through the evaporator, thus in a few years they be come the owners of the farm and you retire to the city or village to spend the remainder of your life, free from its cares.

I have known cases where one of the daughters would hire the help and go to work herself in the evaporator, and in the end of the season pocket $500 or $800, and these daughters refined, educated and accomplished girls.

But where you have no one to take charge of it, it is much better, and brings you more satisfactory returns, to have the fruit worked upon shares. That is in the case of a small or medium sized evaporator. But where you have a large one put up by a company you simply want to hire a foreman and good help, and let them run it in the interest of all. Any old mill or factory where you have boiler power can easily be transformed into a first-class evaporator.

And now I will tell you how you may get such an evaporator without putting one dollar of your capital in it. You have other plans for the use of every available cent, and don't feel as though you wanted to increase your burdens. Now I will tell you how you can get one without adding any to the load that you are carrying. Organise a company and make an arrangement with some responsible builder of evaporators to put one up of the capacity that you may decide that you want, and to deliver it over to you in ready working order. When you accept it give your joint notes for 30, 60 and 90 days; haul in your cull apples, sell stock to meet your notes, and at the end of the season you will have your evaporator and a cash balance on hand. To illustrate, my brother built an evaporator for H. B. Holbrook, North Parma. N. Y., costing $1,800. The man devoted one section to drying the waste—that is cores and skins, and with this he met two-thirds of his payments or $1,200. This shows you that your cores and skins will nearly pay for your evaporator in one year.

Mr. Rice (Sodus).—I might give you a little idea of the way things are done in Wayne county. We are situated about six miles east of Rochester and about five miles from the lake, and this business of evaporating fruits is carried on more largely there than in any other place in the world. Our own little village is situated about midway in this district which extends twenty miles on either side east and west. With our village as a centre and within a radius of two miles there are fifteen evaporators. Take the last twenty years in which I have noticed this matter, and, on the average, you will get more money from an orchard in which the fruit was all evaporated and sold that way than from one in which the best fruit was packed. A barrel of Baldwin apples will make at least 21 pounds of first-class evaporated stock. At an average of six cents s pound that would make $1.26. You will get 13 pounds of skins and cores worth on the average $1\frac{1}{2}$ cents a pound, making $19\frac{1}{2}$ cents, or a total of $\$1.45\frac{1}{2}$. These are rather below than above the average prices. One year a short time ago I picked up and evaporated 1,300 barrels of windfalls and got $1,290 cash for them.

Mr. E. D. Smith.—What does the evaporating cost?

Mr. Rice.—It will cost less than to pick and barrel the fruit.

A Member.—Does it make any difference in the value of the evaporated fruit what kind of fruit you use? Can you get more money for one variety than for another?

Mr. RICE.—Very little, when the fruit is put up that way. The extra would not compensate for the trouble. We can take the apples from the orchard and put them in fifty-pound boxes cheaper than they can be picked and put in barrels.

Mr. ALLAN.—That includes the price of the barrels?

Mr. RICE.—Yes; and the price of the boxes.

Mr. MCMICHAEL (Waterford)—We have two large farmers who use about 200 or 250 bushels in this way. We also have a canning factory which will take apples, delivered, at 40 cents a bushel, using a great many thousand bushels. For the evaporating I believe they pay 25 to 30 cents a bushel for what is shaken off the tree.

On resuming in the afternoon Mr. W. S. Turner, of Cornwall, read the following paper on

EXPERIENCES OF A COTTAGE GARDENER.

Many years ago I rented a place of 2¼ acres, with dwelling-house, barn and stable attached. The previous tenant apparently had no taste for gardening, for the whole place had a forsaken look about it, quack, nut grass and wild wormwood infested the garden if it could be called by that name; there were a few apple trees that were on a par with the surroundings, and dead branches, suckers, bark lice, borers, etc, were plentiful. Realising, in some measure, my utter ignorance and helplessness, I subscribed for the *Rural New Yorker*, and received some good hints from an article entitled "Walks and Talks about the Garden," by J. Harris. I commenced business by buying manure, the last tenant had carted all that was available to his new residence, and plowing up about half the lot, worked in all the manure I could. Indeed, I put in so much that my neighbors thought I was a manure crank. I had previously bought two cows, three pigs and some poultry, with an eye to a manure pile, and, needing feed for them, I planted corn and potatoes, and later on, dropped a few pumpkin seeds among the corn. I hired a man to prune the apple trees and then commenced gardening, which was uphill work, as I had had no previous experience in that kind of labor, nor had I seen much of it done. I made my beds for vegetables in the old-fashioned way, about 3½ or 4 feet wide, and 12 feet long, made many walks, which entailed a great doal of labor in keeping clean, especially when the purslane began to appear in the latter part of the summer. I did not know then how persistent this pest was, but I determined to keep down the weeds, so I worked early and late, and when the fall came I had a fairly clean garden. In the meantime the quack grass and wormwood were choking the corn and potatoes so I had to hire a man to hoe, and I then began to experience the difficulty in getting a man to do an honest day's work, and also in getting him to do it thoroughly. However, I got through the summer and fall and came out better than my neighbors had predicted. I had learnt some lessons, and next spring I went for that quack grass. I had the plot plowed and harrowed and then went through it with a horse rake, and hauled it out into the road by the cartload. It *paid* to do it, for it was a *saving* of labor. I then sowed a large patch in globe mangolds and Belgian carrots, in addition to corn and potatoes, and pumpkins, which gave me plenty of feed for the cows and pigs. In the garden I added a Dutch hoe, digging fork and handweeder to my tools. I also began to cultivate in long rows, discarding the beds, and consequently had fewer walks. I planted my potatoes in drills, and on the *Rural New Yorker* plan, viz., in shallow trenches, putting in a good compost, covering lightly, and then planted the sets, covered up, leaving the ground level, and cultivated on the level all summer. I now began to have a partiality for certain vegetables, particularly tomatoes and celery. I had sown the seed of both of these vegetables in the house, and had them well started in the kitchen window. I transplanted the tomatoes when in the second leaf into other boxes, two inches apart, and later on into paper boxes, so that when I came to plant out in the open ground about the 1st of June they received no check in

their growth. The celery being of slower growth was transplanted when two inches high to the open garden four inches apart, and about July 1st into the trenches, which I dug about eight inches deep, put in two inches of old manure, covered up two inches with earth and then set the plants six or seven inches apart, which by this time had a fine ball of roots, and therefore did not wilt any in moving. I earthed up as they grew, keeping the stalks together, so that the earth did not get into the heart. I planted the tomatoes 3½ or 4 feet apart, tied the leading branch to a stake as it grew, and pruned all superfluous branches, as that concentrates the strength of the plant to the forming of fruit buds; by this means I got earlier and finer fruit. After years of experience I am satisfied this is the best plan to grow tomatoes. The apple trees and currant bushes now began to show the effect of pruning and cultivation, and I had a fair crop of fruit, which was very encouraging.

I lived on that place three years, and summing up my experience there, would say, that, though the results were satisfactory to me as regards the lessons learnt, it was not so in a pecuniary point of view, as I did not stay there long enough to reap the full benefit of all the money and labor I had spent there. My successor got that. Before my lease had expired I had bought a lot, 100 by 150 feet, nearer my place of business, and more centrally situated. It was in sod, so I took time by the forelock and plowed in the fall, as I surmised that I would have enough to do in the spring to attend to the details of house building, etc. I also considered that my land would be in better condition owing to the action of the frost on the grass roots. The following spring I began to build, and as soon as the work was well started, I turned my attention to the garden plot. It was a rough looking piece of ground, but it had been in sod many years, so I concluded that the sod would have to take the place of manure. I had it plowed again, and harrowed thoroughly, it then looked fairly well, for it was a good sandy loam, but, being rather low, I soon saw I should have to drain. I planted corn and potatoes principally. I found I had struck a snag in the shape of quack and nut grass, but I had never read or heard of any patent way of getting rid of these evils, so I made up my mind that I must face the evil with the hoe, which I used with such success, that when the fall came, I had a fairly clean piece of ground. I had a good crop of corn and potatoes, which made good feed for my cows and pigs, for I still had an eye to the manure pile, but I foresaw that I would have to give them up, as I was now more in love with the garden than the stable. That fall I plowed a little deeper than before, having put on all the manure I could afford to buy. I also received a number of fruit trees, apples, gooseberries, currants and two grapevines, ordered from a nursery agent. These I heeled in till the following spring. During the winter, I accumulated quite a pile of manure, and hauled it to a corner of the garden to decompose; this was my bank, for I deposited everything there that was likely to make manure, and kept it moist by throwing over it the kitchen slops. The next spring I reconstructed my fence on the north and west sides, making it six feet high and close boarded. This made a capital place for growing tomatoes, as they ripened there so much earlier than in the open garden. I made three walks the whole length of the lot, and two intersecting them. I had no beds, but planted everything in long rows, which made it easier to weed and cultivate, especially with the Dutch hoe. I manured and cultivated between the fruit trees, planted potatoes and corn, sowed carrots, beets, turnips, peas, beans, celery, etc., and soon found my family could not consume all I grew, so I began to sell, and when the neighbors found they could get fresh vegetables so handy, I had no difficulty in disposing of all that I had to spare. In fact, some of the vegetable pedlars would sometimes come when they wanted to get something choice for a particular customer. By this time my garden began to pay expenses, thus enabling me to hire help sufficient to do some of the heaviest work. This fall, after I had taken off the early crops, I put in a stone drain the whole length of my garden, which cost me about $25, and it paid, as it not only raised my ground (for I used about 5 cords of stone), but it also enabled me to plant about two weeks earlier, my garden being so much drier. I now began to aspire to something higher, sold my live stock, and made preparations for growing more tomatoes and celery, for I found I could grow and sell quite a few dozen ripe tomatoes at 25 or 30 cents before my neighbors' fruit began to show any color. Celery also I found was profitable, as I always grow it as a second crop. As my garden grew

richer and more mellow, I put in more small fruits, including strawberries and raspberries. The raspberry I discarded some time ago, for this reason, that it is not profitable with me, the Indians on the islands of the St. Lawrence supply them cheaper than I can grow them. The raspberry, also, is somewhat difficult to control in a small garden, it suckers so much, and sends out its roots to such a distance, that, on the whole, I prefer to grow strawberries in its place. This was the result of a previous determination to grow nothing but what was profitable, and to further carry out my plans, and get as much out of a small piece of ground as possible, I began to consider what to plant first, with a view of getting in a second crop. I soon saw that I could almost double the capacity of my garden, but on the other hand, I would have to be careful and grow just such things as I could, to the best advantage. For instance, I would take a plot that had been prepared the previous fall by being well manured and dug over, set out strawberry plants as early as the ground can be raked over, lay out the rows 3½ feet apart and 15 inches between the plants, then sow any of following vegetables between the rows, lettuce, radishes, early carrots, dwarf peas, early cauliflower, shallots, Dutch sets, etc., or prick out celery plants, or tomatoes five feet apart, trained to a stake, these will not shade the strawberries too much. There are numberless ways where one can economise in space if only a little foresight is used, but an amateur should never forget or lose sight of the fact that he cannot draw on nature without making some returns. I allude to the manure question. Do not spare it. It must be put on with no niggard hand to do all this. Cultivation also must not be left out, both must go hand in hand, one is comparatively useless without the other. Here I would like to say a word. I will dwell a little on the manure question. There are many kinds, but the new beginner will be most familiar with barnyard manure, therefore I would recommend him to get horse manure for a clay or heavy soil, and cow manure for a sandy or light soil, varying the two, of course, according to the different degrees of heaviness or lightness, but I would not object to artificial manures; on the contrary, I would advise him to test the different brands according to his means, for I believe there is a great future in store for our commercial fertilisers, and they will be more generally used, as they become cheaper and better known. I feel assured that this is a point our members will see it to their own interest to discuss more than usual, not that I would decry barnyard manure; on the contrary, in my humble opinion, the two will do best together, but what fertiliser gives the best results I am unable to say, so I will have to leave that to the more experienced members of the craft here present. Mr predecessor, Mr. Croil, was engaged in getting up a paper on this subject, when he was cut off in the midst of his work. I hope some other gentleman will take this matter up and give us more light on the subject. It is not necessary to take up your time much longer, as no doubt I have seemed tedious to some of you, still what I have said may be of some use and may encourage, as I said previously, some who are struggling in the first attempts at gardening. I will now give the tangible results of my gardening experience, taking the last three years, and which, I assure you, are facts. It may not seem very wonderful to some of you, but my late friend, Mr. Croil, was surprised at the receipts of 1889, and I had to show him the figures before he could credit it, as he did not think so much could be done on such a small piece of ground. Please bear in mind that this will not include anything that has been consumed in the family, or given away for charitable purposes or otherwise, and it is no small amount I assure you, for when strawberries or tomatoes are in season, our butcher knows it to his sorrow. Three out of the four of us do not object to them three times a day, besides what is picked off the vines. Then my good wife must have a goodly array of gem jars on the cellar shelves, and, how much fresher and better fruits and vegetables are when you can just step into the garden for them. But all of you gentlemen know what these luxuries are, so it is nothing new to you. In the year 1889 the receipts of my garden were $140.63, the expenditures were $31.33, leaving a profit of $109.30. The receipts for 1890 were $86.93, the expenditures were $25.17, leaving a profit of $61.76.

The receipts for the present year were $144.79, the expenditures were $36.79, leaving a profit of $108. To account for the comparatively small receipts of 1890, I must remind you that strawberries were almost a total failure, owing to, as you will remember,

the mild winter, continual freezing and thawing, which I have found is far more destructive to plant life than a stinging cold winter. The cut-worm, too, was more destructive than usual, which completed the ruin of my strawberry patch, and then I was a week too late with my first application of hellebore to the currant and gooseberries. But I took the advice of my friend Mr. Croil (who was in a worse plight than myself) and did not despair because I had *one* poor crop. I had set out quite a patch of strawberries in the spring, and when I saw my old bed was going to fail, I potted a large number, and digging up the old patch sooner than I otherwise would have done, I was able, with the aid of a little nitrate of soda and phosphate, to get a fair showing of good plants by the time fall came on.

I also manured heavily in the fall of 1890. We had a fine winter, though the snow was a little late in coming, and in the spring the strawberry patch was in good condition. With my present experience I am not sure that I can increase my receipts very much, as my fruit trees are getting too large to grow anything else near them, of course, I shall get a larger crop of apples, which will make up to some extent what I shall lose by ceasing to grow other things near the trees.

I suppose I ought to have stated that I have not counted my own labor, or that of my son, who is attending school, and who, during his spare hours, has been very useful in weeding, etc. And it must also be taken into account that in my ignorance I have been guilty of some foolish expenditures, but "experience teaches wisdom," and I shall be better able in future to steer clear of the shoals and rocks that trouble the amateur gardener.

The SECRETARY.—This is an exceedingly interesting department, and I regret we cannot give more time to the discussion of it. I think it is possible to receive $100 from a quarter of an acre of ground where it is worked as Mr. Turner works his. I think we all spread our work over too much land. We ought to devote more attention to less land, and if we did I think we would make more money.

ROOT PRUNING.

Mr. A. ALEXANDER (Hamilton), said that he had had some good results from root pruning. He had done it thoroughly by means of a deep trench around the trees, cutting even large roots.

Mr. SUTHERLAND (Hamilton).—I tried root pruning and it was successful with all but the Rhode Island Greenings. The tree grows very rapidly. After the tree had been planted eighteen years and yielding no fruit, I was advised to tie a wire around the trunk to check the flow of sap and prevent the formation of wood. The next year there were a few apples on it. The suggestion of tying the branches down is also a good thing, I think. The Rhode Island Greening got so high that we could hardly get a ladder to reach up. The Gravensteins produced good fruit. There were a few Baldwins, but no such crop as the blossoms indicated. This year the blossoms were beautiful, but the fruit did not come. But I believe that to a great extent that was caused by cold rain.

Mr. DEMPSEY.—There is considerable in this root pruning. About twenty years ago I tried it on a standard White Doyenne pear tree. The result was that we got fruit buds very early in the life of the tree. I fruited an orchard once by this system. But the system of cultivation is more important than the system of pruning. Cultivate early in the spring and continue it up to about 1st September, then if necessary sow something, anything to check the growth of the tree at that time.

Mr. MCMICHAEL.—The question was asked as to Spys bearing by themselves. We have a lot planted twenty-five years ago. After twelve or fourteen years they began bearing and in the centre of the orchard the trees are just as fruitful as anywhere else. In the spring last year we gave it a heavy coating of barnyard manure and cultivated it and this is the best season we have had.

Mr. A. M. SMITH. I do not believe the remedy for barren Northern Spys is to plant with others, because they do not blossom until after the others are done blossoming.

Mr. PATTISON.—The main cause of barren orchards is starvation. Take the orchard of the ordinary farmer and you will see that he treats it as though the trees were not there at all. He crops all kinds of cereals upon it and then expects to get apples. I had a good crop this year and have never missed a crop except last year, when I had part of a crop. I attributed it first to careful pruning and, second, to thorough good keeping up of the land. Manure the land well every year, don't coat it heavily one year and then leave it for four or five years. I think also that wood ashes properly applied are invaluable in an apple orchard.

THE QUESTION DRAWER.

On resuming the session at eight o'clock in the evening the question drawer was opened.

Q. What is the best preventive for the rose bug?

The SECRETARY.—Spray him with boiling water.

RABY CASTLE CURRANT.

Q.—Is the Raby Castle Currant the same as the Victoria?

The SECRETARY.—I believe it is.

Mr. CRAIG.—If they are not the same they are not distinct enough to be classed as two varieties. There was a slight difference in the time of ripening last year and this year. I am inclined to think they are the same.

GAS LIME ON SOIL.

Q.—What is the experience of members as to gas lime as an insecticide or fertiliser?

Mr. BEADLE.—I have used it on a place where I did not want anything to grow and it prevented all growth. If that is a fertiliser, all right.

Mr. JAMES.—You could say the same thing about salt.

Mr. BEADLE.—I deny that salt is a fertilizer in itself. The only thing it can do is to make chemical changes in the silicates or something else in the soil. It is only a fertiliser as it acts chemically upon the soil and liberates elements necessary for plant life.

Mr. JAMES.—That is the way the gas lime acts principally, but there is an element in the gas lime which is necessary for plants—lime. In itself it is not a fertiliser, except in the case of roots, for instance, mangels and turnips. Quite a large quantity of salt will find its way into the plants and so with the gas lime. The lime in its fresh condition is very active in it, but by weathering it is taken away and is changed into sulphide of lime or gypsum. It does not act directly but separates the constituents of the soil just as the salt does.

Mr. DEMPSEY.—I have seen them prepare large fields for potatoes the previous fall with gas lime. It destroyed insects and acted as a fertiliser upon the potato plant.

Mr. JAMES.—In making board walks it is the very best preventive of weed growth. I have seen walks kept free for six or seven years. How long it will act after that I cannot say.

Mr. BEALL.—Would not the salt do the same?

Mr. JAMES.—The salt washes away and is not so effective.

Apple Scab.

Q.—Is it probable that the use of barn-yard manure is a cause of apple scab?

The Secretary.—I do not see how it could produce apple scab. The fungus lives over the winter not in the manure but in the spores left in the bark and surviving the winter.

Q.—What is the value of the application of salt marsh mud upon orchards?

Mr. James.—There is such a great difference between the march mud deposits of Nova Scotia and those here that it is hard to answer that. I have examined the deposits down there and we have had samples sent to Guelph for examination. The mud seems to be exceedingly rich. They use it down there as a fertiliser. They leave it in heaps over the winter for the atmosphere to act upon it. The salt marsh mud would have a considerable quantity of sea salt which contains a solution of potash, magnesia and other elements which would be beneficial. By weathering it over winter the frost disintegrates it and it takes up a considerable quantity of ammonia from the air. Apart from the salts in it and the ammonia taken up that way I do not know that it will have any effect that would not be accomplished equally well by ordinary swamp muck.

Mr. Rice (Port Huron).—It also contains myriads of shells.

Mr. James.—But it takes a long time for these to disintegrate.

Fertilisers for Orchards.

Q.—What is recommended as a good fertiliser for orchards where hardwood ashes cannot be had over a large area?

The President.—I do not know much about fertilisers, except Smith's artificial fertilisers which I have used. They contain about nine to eleven of potash, two to three of ammonia and I forget the nitrogen. That is the blood fertiliser. It costs about $43 a ton delivered. I use about four tons a year. About 400 pounds to the acre for plums and grapes; apples, according to the size of the tree, from four to six or eight quarts. I sow it around as far as I think the roots will extend, but not where I think the roots will not take it up. I have found it good on everything I have used it for. I had an old Concord vineyard that refused to bear. There was any amount of growth and it would blossom, but the grapes would drop off. I used probably not more than a pound to a vine and with good result. My plum orchard also seemed to be running out before I began to use this. The black-knot was very bad though I cut twice a year. It almost seemed as if it were going to destroy the whole orchard. I commenced using 100 pounds an acre of this fertiliser and have been doing that every year since. I now have plenty of fruit and scarcely any black-knot. Wherever I have tried it on pears they have done finely. I sow it around the pear trees as far as the limbs extend.

Mr. James.—Referring to what the gentleman said about marsh mud, one thing he might do would be to make a compost of marsh mud with lime, taking for instance, four or five inches of mud, then a layer of lime and so on until it is two and a half or three feet high, let this stand over winter and it will be available in the spring.

HORTICULTURE FROM A MORAL STANDPOINT.

Rev. Joseph Wild, D.D,, was then called upon to address the society. He said: "I thank you, Mr. President and gentlemen, for the invitation to address you. There is great deal of profit in meetings of this kind. I felt on retiring this afternoon that I was considerably wealthier than when I came in. A man's wealth is not a thing outside of himself. This was illustrated this afternoon by the reference to the sentimental value of trees. The same thing is true of nearly all things that we possess. I learned this after-

noon that the value of a good, sound apple tree, such as I instanced, is from forty to fifty dollars. In my own mind I have gone as high as thirty dollars. If your estimate be true, and in such a matter I cannot well dispute you, I am a good deal wealthier than when I came here this afternoon. A man often has wealth that he does not mean to dispose of, yet he estimates what its value is and counts himself as possessing so much, and so you have helped me to become a good deal richer than I was. I believe that there is the connection as suggested by the subject upon which I am to address you between horticulture and morality. Scientific men tell us that there is no vacuum in nature, so that all things are related and inter-dependent. Observation and experience are the two great instructors and the meeting together of practical men like the members of this Association must greatly increase the store of knowledge possessed by each. Every man has his hobby, and I have often felt thankful that the hobby I chose as a young man was the orchard, for after I came to years of wisdom my reason coincided with the choice which I had instinctively made in youth. I like an orchard and I like to go fishing. Living on a farm I can have both, and it is profitable to me in a moral sense to live upon the farm. I am better there than anywhere, as I go about watching the works of nature and exercising my skill and patience in increasing and improving the products of the farm. It is a great means of increasing one's patience and nobody requires patience more than a minister. If you want a congregation to treat you liberally you must always be cheerful with them, and cheerfulnsss cannot exist where there is not patience. Morality depends much upon our physical disposition and condition. We all know that there is an intimate relation between how a man feels and what he does, and that there is an equally intimate relation between what he eats and drinks and wears and his bodily condition. They carried that idea to extreme lengths in the olden days. We are told that when Michael Carmody was about to be sentenced to death and the judge asked if he had anything to say, he answered only that he wanted to warn the young never to be guilty of wearing woollen clothes, for the wearing of woollen had brought him to the gallows. While I do not believe that he was exactly correct I believe there is some close relation between what we do and what we eat, drink and wear. Man, we are sometimes told, is an epitome of all the earth, and if there are sixty-five elements in nature, he should possess in his constitution every one of these elements in due proportion. We know that those who are confined to one kind of food lose their health so that their bodily condition clearly depends upon their food as their moral condition does upon their bodily state. We know how whiskey affects the moral nature. I knew a man once who occupied a seat in my church, but he never came to see me to talk about church matters unless he was intoxicated. With others it has a far different effect. The time is coming when men will understand that they can keep the balance necessary for their good largely by due attention to matters of eating and drinking, so as to supply the elements in due proportion for the body. There is in the work of the horticulturist much to please the eye and charm the mind, and to please men is to help them to be moral. A great many people get cross and go on a spree because they are cross. If we want to see the connection between the laws of health and the laws of morality we have an illustration in the case of our first parents. We find it also in the laws of Moses which are supposed to have been given by the Creator. It is only within the last fifty years that the world has begun to understand the science and philosophy contained in the laws of Moses. Now that we are beginning to understand the nature of various bacilli and have begun to isolate diseased persons in many cases, to burn clothing and even buildings as a means of stopping the spread of disease, do we see that the best outcome of our scientific methods is only a repetition of what was enjoined under the Mosaic law thousands of years ago. It is a remarkable fact and proves either that the world was much wiser in that day than we commonly believe it, or that the one who announced these laws was divinely inspired. I believe that the eating of fruit in due proportion has excellent effect upon the bodily health. This is acknowledged by the highest authorities upon these questions. It is for us to produce fruit, to do what we can to produce it in large quantities that it may be cheap, that it may be brought within the reach even of poor people. It is a benefit to me to have people about me honest and moral, and that being so, and morality depending to some extent upon health, it is in my interest to do what I can to

keep people healthy. The man who plants trees helps not only to beautify the country but to improve the people, and why should not beauty and utility go together? Why not do as is done in some of the older lands,—in Spain for instance,—plant fruit trees along the wayside whose fruit shall belong to everybody? The time is coming when we shall be able to increase very greatly the product of our gardens. Improvements are being made in every line, and among them in the line of increasing the fruitfulness of the soil. I have been much interested in reading the book by Prince Krapotkine. He gives the world new light as to the possibility of multiplying the production of fruit. It is a most remarkable thing, as he points out, that with twenty-five hundred acres of land devoted to market gardens, upon which five thousand men are employed, the whole city of Paris, containing two millions of people, is supplied with vegetables and they have to spare to send to England. At the same rate he says the land of Britain would supply the thirty-five millions of people there with everything they want for the maintenance of life and health and leave enough to spare. Seven thousand acres of land with fifteen thousand men to do the work would supply all the vegetables required for the great city of London. They do not raise in these market gardens only one or even two crops a year, but as many as half a dozen crops. He shows also how the electric current is being applied to increase the production of these gardens. Placing a copper plate at one end of the plot and a zinc plate at the other and connecting these with a wire the effect upon the soil is most remarkable, increasing greatly its productiveness. I trust that this Association may be always successful. I am greatly interested in the work of the horticulturist, and engaging in it I attain good far beyond the mere money profit. I want to be where I can see the work of the Creator and stand close to Him with nobody to intervene. The horticulturist and farmer deal directly with nature, and come close indeed to nature's God. I feel a sweetness and restfulness when I go up to my farm on Monday and watch there the wonderful works of nature. I think that my people are benefited because of my being thus close to God. It has a tendency to make one earnest, and to increase one's sense of duty to God.

The SECRETARY spoke appreciatively of Dr. Wild's address, and moved a vote of thanks to the speaker. The resolution was seconded by Mr. Caston and carried by a standing vote.

CATALOGUE OF GRAPES.

Mr. A. McD. ALLAN presented the report of the committee on the catalogue of grapes for the guidance of judges at fruit exhibitions. He said: "The effort has been in this report to do in the case of grapes what has been done in other classes of fruit. It would take a long time to look into and criticise the report in a proper way. No committee could frame a report of this description, but you could find growers who would make changes in one direction or another. I move that the report be received.

Mr. DEMPSEY seconded the motion which was carried.

(The list, which was signed by Messrs. C. W. Cline, M. Pettit and T. H. Carpenter, appears in Appendix II.)

Mr. ALLAN.—I understand the report will then remain in the hands of the committee until they receive reports from the various sections.

Mr. CLINE.—We grow most of the grapes ourselves and we judge them from our own experience and observation.

Mr. CASTON.—It seems to me this report would be of no use to judges as between specimens of the same variety. It can be used only in the case of collections.

Mr. CLINE.—Yes.

Mr. E. D. SMITH.—This does not show the profitableness of any grape?

Mr. CLINE.—No.

Mr. A. M. SMITH.—This list might have the effect of misleading planters.

Mr. CLINE.—I understand there is to be another list made for the use of planters adapted to the different parts of the province the same as the apple list.

Mr. E. D. SMITH criticised the report at some length on the assumption that the estimate of the value of each variety should be made on the basis of the market value of each, when it was at its best in the market relatively, to other varieties, but it being explained that the question was one of judging at fairs, and that productiveness, quality, etc., were considered, he stated that had he understand the case at first he would have estimated the value somewhat differently.

Mr. AWREY moved that the matter be left over for further consideration and that it be referred to a committee to consist of Messrs. Cline, Pettit, Carpenter, E. D. Smith, Wm. M. Orr and A. M. Smith

Mr. TURNER seconded the motion.

A resolution which had been presented by Mr. E. D. Smith amending the report was withdrawn, and Mr. Awrey's resolution was carried.

CO-OPERATION WITH FARMERS' INSTITUTES.

Question 15 was then taken up. "What are the visible results of our co-operation with Farmers' Institutes? What line of subjects ought to be taken up?"

Mr. A. H. PETTIT (Grimsby), in answering this question, said: I have learned a great deal in going around amongst the farmers and fruit growers of this country. They are quite capable of teaching any fruit grower, I do not care how good a man he is or how clever a speech he has. All our delegates have been very heartily received at the meetings all over the country. What the results have been it is hardly for me to say. In reference to the second part of the question, I think we ought to take up whatever branches of the fruit growing industry we find most neglected. Speaking from my own experience, I believe that the planting and cultivating of the orchards throughout our province is not in a satisfactory condition. We have, as a rule, far too many varieties of apples. Many worthless varieties are glutting our markets and lowering prices. Another point is marketing. The handling of our winter apple crop is very much behind what it ought to be. You will say that if their quality and condition are right they will find a market for themselves. That is true in one sense of the word but not in another. A great many people in this country have never shipped or handled their own apples. We never will receive the prices we should receive for our fruits until they are better handled. This raises the question which was discussed last year, whether we can bring the buyer from the old country to a central point in this country, where he can meet the seller, and thus facilitate the trade in every way. To-day a few buyers rush over the country and buy immense crops, and employ hundreds of men to pack them. Some of these are capable of packing but many of them are not, and the fruit arrives in the English market in bad condition, and our crop in that market does not stand where it ought to stand. If there is one important subject to-day before the fruit growers of this country it is that of the shipment of their crop. Your committee who went to Ottawa and laid this matter before the Government were cordially received there. We were heard, and the matter was fully discussed, and I think I am using the words of our late lamented Premier, Sir John Macdonald, in saying that the idea is a splendid one, and we must try to carry it out. A very short time afterwards he was stricken down, and the matter could not be taken up since, I suppose, but I hope the fruit growers will see the great advantage it will be to them if we could establish in our own country, say in central points, like Toronto, a wholesale market where we could draw the buyers and sellers together and have a system of inspection, which would establish the grades of the apples offered for sale. Another question is as to the farmer's fruit garden. A well-stocked and well-kept garden would save to the farmer ten times enough for all the trouble and cost in the improved health of his family and the comfort of all.

The SECRETARY.—As to to the first part of the question, "visible results," I have not much to say. Those who have been out find the interest in our line of work is increasing, and the farmers wide awake to what we have to tell them. As to what line of subjects ought to be taken up, I would like to refer to that for a moment and speak of one thing that I think ought to be avoided—we ought to avoid emphasising unduly the supposed enormous profits of fruit culture. It has been too much the custom in the past to do this at fruit growers' meetings. I do not know whether it is because of the presence at our meetings of gentlemen, whose presence and whose words we nevertheless value, yet who are interested in the sale of trees and plants. We do not want to make the people believe that fruit growing is, of all the industries in the world, the one to make them rich. I get letters from people in towns, very often, asking "would it be wise for me to sell out my business and buy a fruit farm? I hear that enormous profit can be made in fruit growing." I have seen instances of the results of this kind of thing. A furrier in Toronto, who had never done anything in growing fruit, and had not the slightest idea of the difficulties in the way, sold out his business, came to Grimsby and bought a farm. He went to work planting it out. He was one of those men who think they know about everything, and he would not take any advice. He had no knowledge of what to plant or how to care for it when planted. He worked at it for two or three years, and, after sinking three or four thousand dollars, he concluded to go back to Toronto and go into the furrier business again. When it is announced, in our proceedings, that eight thousand quarts of strawberries can be grown upon an acre, that fact placed before the public, without explanation, is apt to give an entirely erroneous idea. We ought to give the other side of the story and tell of some of the failures as well as the grand successes. The subjects that ought to be taken up include the best methods of producing fruit, the best methods of handling crops and marketing, and other subjects along that line.

Mr. DEMPSEY.—This is not a question that interests the public, but one that interests those who go out to the meetings, and they can discuss it among themselves.

Mr. JAMES.—I hope it will not be left to those who go out to the meetings alone. A great deal can be done by individual members in connection with the institutes to which they belong. I consider the work done by the representatives of the fruit growers among the best work done in connection with the farmers' institutes, and I wish we could have all other branches of agriculture represented as fully, and in the same way. From all hands we have reports of the most flattering nature, and I hope this Association will do all it can, through its representatives and through its individual members, to help on the institutes, because the work of the farmers' institute, it seems to me, must become one of the greatest means for educating the farmers of this country. We may do as much work as possible through experimental stations and agricultural colleges, but the farmers' instiute is the only way by which we can take the information direct to the mass of the farmers. As to the class of subjects to be taken up, there is no subject more interesting than, first, the farmer's orchard, and, second, the farmer's common garden. You may say that, practically, that includes the whole thing, but you cannot repeat too much upon these subjects. The farmer is, perhaps, slow to learn, but once he does learn he remembers the lesson all his life.

Mr. RICE (Sodus).—Each locality ought to have subjects according to its requirements

Mr. JAMES.—I think you will find these arise from the after discussion, and I believe it will be found best in every case to have a short address, but to be prepared to answer questions as they may arise, and to discuss any points that may be brought up. A man will be judged more by his ability to answer questions than to give a prepared address that will exhaust the subject. A ten minutes' address followed by a half-hour's discussion will do more good than a twenty minutes' address that will exhaust the subject.

Mr. ALLAN.—At these meetings we find trustees of public schools, and it would be well to remind them that school grounds in many sections are lying waste. By interesting trustees and teachers in having these grounds planted and cared for, much can be done to interest the people generally, besides giving the children valuable education in this very important matter.

Mr. KERNIGHAN.—I agree with the Deputy-Minister that the test of the speaker's ability is to draw out ideas from those in attendance. After all, it is the people who inform one another in the main. It must be a well known man who will draw the farmers together, but the discussion among the farmers themselves is what does the great good.

Mr. JAMES.—About three weeks ago I received a letter from a gentleman who went from Toronto, I think, to take the position of head master in a new high school in the western part of the province. He asked me for information in regard to agricultural education, and desired to know also where he could procure the best seeds to be had in the province. He was going to distribute these among his scholars, intending to have an exhibition of the products. There may be a hint in that for other teachers.

Mr. DEMPSEY.—The canning industry is a matter to which attention should be called in the farmers' institutes, for it is directly connected with horticulture, and I believe in a short time it will be second only to the cheese industry. Where these canning factories exist, farmers are making money growing tomatoes, green corn and small fruits, for which they find a ready market. In Picton we have two large canning factories, and they have never been able to supply their orders. The farmers are able to calculate what they will get for what they produce. There is no danger of over-stocking the market for there is the unlimited demand in England to supply.

N. AWREY, M.P.P.—As head of the Central Institute, representing eighty district institutes, I wish to say to the Fruit Growers' Association that we are under obligations to you for the friends you supplied to speak at our meetings. We find now that a cry is going up from all parts of Ontario for speakers from this Association. The result is not that farmers propose to go into fruit growing as a business, but many of them have been led to have a small garden. In times past, the farmers of Ontario depended altogether upon growing wheat and barley, and, in their desire to make money, the requirements of the household were not considered; but your influence has led many to establish gardens, where they can grow fruits for their own table to their own great advantage in point of health and comfort; for, as Dr. Wild has told us, a man's health has a great deal to do with his happiness. We owe you thanks for what you have done in the past, and we ask you to furnish men for future meetings. As Mr. Woolverton has said, the real object is not to make farmers think that they can become wealthy through devoting their attention to fruit growing, but to convince them of the advantages which the farmer's garden will confer.

The PRESIDENT.—It is satisfactory to know that we have awakened an interest in the farmers. I think we should never fail to speak about the farmer's garden, but to hammer away at that. I have received letters from many farmers asking for information, showing that the interest in this question is increasing.

THURSDAY MORNING.

On resuming on Thurday, December 17th, questions were asked and answered as follows:

BEST CHERRIES.

Q.—What is the best variety of cherries for profit, the best sweet and the best sour?

The SECRETARY.—For light colored cherries the Governor Wood is the best to open the season, and, for profit, the Napoleon Bigarreau to succeed it, and then Elton. These are exceedingly good, and will succeed in southern Ontario. Among the dark, sweet cherries I would mention Knight's Early Black and the Black Tartarian, for principal crop. The Black Eagle is too scant a bearer for profit. The Elkhorn, or Tradescant's Black Heart, is an abundant bearer, and, in some years, exceedingly profitable. It is however surpassed for profit by the Windsor, a black cherry which originated with Mr. Dougall at Windsor, quite as late and of somewhat similar characteristics.

Mr. RICE (Port Huron).—There is the Empress Eugenie.

The SECRETARY.—That is not a sweet cherry. It is on the border-land between sweet and sour; it is a fine cherry, but the tree with me is subject to black-knot. Of sour cherries, the Early Richmond is a good one to begin with. The Kentish succeeds well; the Montmorency is the best sour cherry. There are two varieties, the large Montmorency and the Montmorency Ordinaire; the latter is the more hardy.

Mr. BEALL.—You do not mention the Vladimir.

The SECRETARY.—It is worthy a place in the list for the northern districts.

Mr BEALL.—It is no good with us. It is no bigger than the wild Black Cherry.

The SECRETARY.—I have the Vladimir, and my experience does not agree with yours. Those, that I have, are almost as good as the Kentish Pie Cherry, and nearly as large. They turn quite dark when ripe.

Mr. RICE (Port Huron).—The Reine Hortense is a good cherry.

The SECRETARY.—I had it this year, and I thought the finest sour cherry I ever tasted.

Q.—Ought cherries to be cultivated?

The SECRETARY.—I was told that cherries should not be cultivated and, therefore, formerly I did not cultivate them. Of late I have cultivated a small cherry orchard, and the results were so much better that I cannot see the wisdom of the advice formerly given.

EFFECT OF STOCK ON FRUIT.

Q.—Has anyone had any experience in the effect of stock on the fruit?

Mr. CASTON.—Top-grafting is meant.

The SECRETARY.—We know the stock has its effect upon the fruit. There is a difference in the size of the King apple when grafted on various stocks, as I think Mr. Caston has said. Grown on the Talman Sweet, it is a better apple and a more abundant bearer than when grown upon the ordinary seedling stock.

Mr. RICE (Michigan).—I had special reference to apples, for the reason that my attention has been drawn to the fact that certain varieties of stock seem to produce a better quality of apples than any other upon which they could be grafted. This leads us into a region upon which we have no knowledge whatever. With investigation it may be of immense value. The question came up in our Society, and Mr. Morrell, of Benton Harbor, said that in grafting he had one row of Talman Sweets, and he found the yield was four bushels to the tree more than on the other varieties. I have asked the question several times, and, invariably, cases are given of the good results of grafting upon Talman Sweets. If we could make a record of these things we might have something of great value.

Mr. CASTON.—We have here samples of Princess Louise top-grafted on other stock and about twice as large as the ordinary.

Mr. A. M. SMITH.—I brought these samples. I could not say on what variety they were grafted, but the apples are of unusual size. It may be because the tree grew near a hog-pen, and, therefore, in a highly fertilised soil.

Mr. RICE (Port Huron).—I have trouble with my orchard not bearing fruit: The trees were top-grafted on the Northern Spy. Has anyone any experience on that? If so, I would like to know the result.

Mr. CASTON.—I would rather top-graft the Northern Spy on to something else and bring it into bearing earlier. It takes fifteen or sixteen years before it begins to bear. A gentleman last night spoke of his orchard not bearing. I am satisfied, from my experience in top-grafting, that the orchard is all right, and will bear in time. Where I live there are a great many varieties you cannot grow as a nursery tree, but you can get those

varieties by top-grafting. It is the trunk of the tree that fails. Get a vigorous stock to graft upon and you produce a larger and better sample without any sacrifice of quality and flavor. That is my experience.

Mr. TURNER.—We have Northern Spy grafted on Talman Sweet. It grows well; better than other stock. The position is very exposed, facing the Long Sault Rapids.

GEORGE FISHER.—My block of four hundred Spys was originally a block of five hundred, and I grafted one hundred of these trees with Golden Russet, Roxbury Russet and Ribston Pippin, and these varieties are doing well, but the four hundred remaining do not bear.

Mr. E. D. SMITH.—What should be recommended for the northern section?

Mr. CASTON.—If I were a young man starting an orchard, I would raise some seedlings and pick from these the hardiest I could get.

The SECRETARY.—Would you use Talman Sweet as stock for grafting?

Mr. CASTON.—There's nothing better. It is perfectly hardy in our section of the country now, as hardy as Duchess. It has a perfectly hardy trunk, with close-grained wood and smooth bark, and you have something there that will stand the weather. Cut into the branches and you are above the point of danger. Our friend from Cornwall will find that he can grow almost any apple in that way.

FRUIT EXPERIMENT STATION.

Mr. A. M SMITH presented a verbal report on behalf of the committee on fruit experiment station as follows: Your committee interviewed the Minister of Agriculture, Hon. Mr. Dryden, in Toronto and were very cordially received, but Mr. Dryden stated that there was so much business just then before Parliament, and it was so near the close of the session, that he thought it would be useless to bring the matter before the attention of the House. He advised us to agitate this question, to bring it before the people and to get the people to understand the importance of the object we have in view. We all know that a great many claims are brought before the attention of the Government and this scheme will entail considerable delay. The first question he asked us was what the probable expense of supporting an institution would be. We gave him some figures of what in our estimation would be required, and he accepted them for consideration. We have no idea, or the people at large have no idea, of the loss to the country from the want of some institution of this kind. Thousands of dollars are lost to the country every year by the want of knowledge among fruit planters of what is adapted to their wants and to the conditions of the district in which they live As fruit growers we have all had more or less experience in this line of buying varieties recommended by those introducing them and undertaking large expense in testing them for years, often finding them at last to be of no value whatever. I think that as fruit growers we are unanimous in believing that an institution of this kind would be of great advantage to the fruit growing industry of Ontario. As I stated in my paper, we have stations for conducting experiments, but these stations are in such localities that we cannot test in them the finer varieties of fruit, and we ought to have a station somewhere in the fruit belt of Ontario where these things could be properly tested.

Mr. BEADLE.—I have here a paper about the Excelsior peach which is called "New England's Hardy Iron-Clad Peach." We want an experiment station to find if this peach is iron-clad in Canada. This document says they will sell this iron-clad peach for fifty cents a piece, five dollars a dozen, fifteen dollars for fifty and twenty-five dollars for one hundred. That is more reasonable than the terms they sometimes offer in these documents. I would like to ask if there is any person who knows anything about this peach. It is claimed to be a peach of the Crawford type, ripening between the early and late Crawfords, bearing in Massachusetts and Connecticut. In 1890 when the peaches failed in that section, this variety is said to have borne a fine crop. If that is true and if the

thermometer goes down as low there as at Guelph or even as low as at Hamilton, it might be a desirable variety to have. Here is an illustration of what Mr. Smith has been talking about. We need in this fruit belt of Ontario an experiment station that will take up these things and spend the money necessary to test them. If you and I and the other experiment, each for himself, and find out in the end that the variety will not pay, how many hundreds of dollars the country may be out in that way.

Mr. JAMES.—In your opinion which method would be the better, to have an experiment station at one point and get the results of the one test in each case, or for the Government, for instance, to procure a large number of these trees and distribute them to perhaps fifteen or twenty places, where the conditions are slightly different, collect the information as to the different results and give it to the public.

Mr. BEADLE.—I express my own opinion without the slightest hesitation that the suggestion, made by my worthy friend, is a most excellent one. I would rather have the results of fifteen experiment stations than one, any day.

Mr. JAMES.—When I go back to Toronto, no doubt the Minister will ask me what your opinion is, as to this question. It strikes me that if you have one station somewhere in the Hamilton district, or in the Essex and Kent district, the experiments will be more particularly applicable to that region, whereas if you had a man in charge of this work and he could make use of your farms for carrying on the tests, he would probably be able to gather information more generally useful than if the tests were confined to one section.

Mr. ALLAN.—I believe Mr. James expresses the right idea in this matter. We know that there is little good to be gained by the Central Experimental station now at Guelph, for it is in a peculiar situation and experiments tried there are of no practical value for the Niagara Peninsula or along the shores of Lake Erie or Lake Huron. We have so many variations of soil and climate that one experimental station would be of comparatively little use. It seems to me that the suggestion of the Deputy-Minister is the only fair solution of the question.

Mr. JAMES.—With regard to the work of the Experimental Union, that had particular reference to the raising of grain. Our results at Guelph are taken by the Union and proven in other parts of the Province. Many of those conducting the experiments outside are ex-students of the college, pratically acquainted with our methods, while many of them are practical farmers who have never attended the college. The results achieved are collected and tabulated. Little has been done in horticulture. A few experiments were made under the supervision of Mr. Clinton in the raising of potatoes. I do not know how far they intend to enlarge that work, but no doubt it could be enlarged under the supervision of those best qualified to direct the work in the various branches. If in each section say half a dozen or more fruit-growers would set apart a small piece of land and would carefully carry out the experiments under the supervision of some person to be appointed, results could be achieved which would be of value, not in one section alone, but throughout the entire province. You want to make fruit growing as wide spread as possible. It is said that the experiments at Ottawa and Guelph are of value only as affecting the colder regions of the province. But on the other hand a station in the Niagara district would give results of value only for the warmer portions of the province. You have the great area lying between these two extremes and by having many experiments, carried on simultaneously, the greatest benefit would be gained for all.

The SECRETARY.—The suggestions of Mr. James are an enlargement of the work which we as an Association are already doing. We are now distributing every year a large number of trees and plants of new varieties, for instance this year the Idaho Pear, Moore's Diamond Grape, Gypsy Girl Apple and others concerning which we are to receive reports. We have not carried our work far enough, and perhaps that is where our weakness lies. We have never tabulated the results. Had we done that faithfully, it appears to me we would be doing what is suggested by the Deputy-Minister, if I understand it aright. Whether this should be carried out by the Experimental Union, or more fully worked out by our own Association, is a matter for us to consider. It appears to me that

there is work for an experiment station of say ten acres or so in southern Ontario, work that could not be done in the manner proposed; for the special object of such experiments would be to decide whether any particular variety could be grown successfully in various parts of the country, that is its adaptability. The work of the single experiment station in southern Ontario would be to test the absolute value of a new fruit, without reference to its adaptability to any particular section. There is room for both schemes.

Mr. BEADLE —According to my experience there is difficulty in the way of carrying on experiments by this Association. I was secretary for many years. My mantle has fallen on better shoulders. I hope the present secretary will succeed better in the object we have than I did. We sent out plants and trees to the members of the Association to be experimented with and reported upon, but the members seemed to think that what was sent them was a present from the Association to be used as they saw fit. As a rule, they never sent back a report as to the results. If some means could be devised to compel a proper use of these things and a proper report upon them, it would be a good thing. I am inclined to favor the view of the Deputy-Minister.

Mr. A. M. SMITH.—In Michigan do they not rent the land and employ a man to carry on the experiments?

Mr. RICE.—P. P. Lyon manages the station at Grand Haven. There are five acres of land, a part of his own farm. I do not know what benefits he derives from it.

Mr. SMITH.—I understand that the Government pays him a rental for the land and pays him to look after the experiments.

The SECRETARY.—I move that this matter be still further acted upon by the committee previously appointed. I find it consists of the President, Mr. A. M. Smith, Mr. Wellington and the Secretary.

Mr. CRAIG.—Mr. Beadle asks for information about the Excelsior Peach. I saw the fruit at the last Pomological meeting. I was not favorably impressed with the size, but the quality is good. The principal point is its hardiness. Mr. Hale, of South Glastonbury, Connecticut, says it originated in New Hampshire. It is an attractive little peach, with a rich red bloom on one side. While I am up I would like to emphasise the remarks made by Mr. Woolverton. We must have these two institutions, that is the experimental station, to tabulate and record the results and the experimenters to carry on the tests outside. I second Mr. Wolverton's resolution.

Mr. ALLAN.—I think favorably of the proposal of the Deputy-Minister and I move therefore that we accept the suggestions of the Deputy-Minister and request the Government, if possible, to carry them out. I am sure we have a number of members who would carry out the experiments properly to the benefit of us all.

Mr. CASTON.—When this question was first brought up I thought the best plan would be, if we could get the Government to give us an additional grant—and I must say I think the Government has treated us very liberally so far—to carry on the experimental work on an enlarged scale in connection with the "Horticulturist." I feel warranted in saying that the circulation of this journal has saved to the people of this country many thousands of dollars by the information it has given. When the committee meet the Government we may be met with the statement that we have an experimental station at Ottawa that is doing valuable work. Our friends in Niagara say it is of no use to them, which is true. We have an experiment station also at Guelph, but horticulture is not made so prominent there as at Ottawa. I do not think the Directors ought to do all the talking in this Association and on this particularly I would like to hear opinions from the membership generally.

Mr. CAVERS (Galt).—Those who know the Agricultural College at Guelph know that it is a perfectly live institution as regards general farming—experimenting with grains, cattle, sheep, and so on. But the horticultural department is in a dead-and-alive condition. My suggestion is that this Association should take steps to be represented on the advisory board; I do not think we are represented there now.

Mr. BEADLE seconded Mr. Allan's amendment which, on a show of hands, was declared to be adopted.

Mr. JAMES.—Mr. President, would it not be well for you to put your wishes in the matter definitely in shape so as to have them laid before the Minister of Agriculture? I know that Mr. Dryden is exceedingly anxious that this matter should be undertaken. It is a question of the best way of undertaking it, whether through this Association, or through the Departments, or in some other way. Whatever is done, certainly we will want to do it in consultation with as strong a committee as you can appoint.

Mr. CASTON —I second the resolution that the same committee be continued with power to add to their number; and this resolution was also carried.

FRUIT INSPECTION.

The PRESIDENT submitted an oral report on behalf of the committee appointed to wait upon the Dominion Government on the subject of fruit inspection. He said: Your committee in conjunction with the Central Farmers' Institute waited upon the Government and were given a very good hearing and received a very satisfactory reply to the effect that the Government considered the matter one of great importance and would in all probability carry it out at once. But the death of our late Premier occurred very shortly after and I suppose the Government was for a long time in a confused state and for that reason the matter was left over, but I have no doubt from the opinions that were expressed to us that they desired that the idea should be carried out. Now, I think the only question that arises is as to the best way of presenting this matter to the fruit-growers of the whole Dominion of Canada. I think there is one of the points where the farmers' institute might become of great advantage to us by our own members going before them and getting the opinion of farmers and fruit-growers upon this matter. If we as fruit-growers consider the inspection of fruit and the establishment of a trade mark by which our fruit could be known an important matter, then we should press this question forward, but if we are not a unit I think it would be inadvisable to act for the present. I have failed to find a single man, whether buyer, dealer or grower that has presented anything in opposition to the scheme, but all seem to think it would be for the very best interests of the fruit industry.

Mr. ALLAN.—It is acknowledged that it has been a difficult thing to maintain the good name of this country as an exporting country in apples, which is the principal item of our export of fruits to the European market. Now, I know very well that we are shipping apples to that market that never should see that country. We are sending our apples in barrels that should be sent to the evaporating factory, or fed to stock. Much could be done to maintain the good reputation of the country by appointing an inspector or inspectors to see that nothing goes out with the Dominion brand that cannot be relied upon. If this were done buyers in the foreign market could buy with confidence, and if you gain the confidence of the people there, there is money in it. We know that from the experience of private parties, who have made it a point to send out with their brand only good fruit. The subject is one of very great importance and the Ministers themselves recognised that fact when we submitted the scheme to them. It is hard to lay down rules and regulations in the beginning of such a scheme, to a large extent it will have to be left optional with the grower whether they would have their fruit inspected and branded by this officer. We are satisfied that those who did submit their fruit to such inspection would find profitable results, even though they had to pay the cost of inspection. In the present state of affairs I fancy it may be necessary to wait upon the Government again and refresh their memory upon the subject. The suggestion of the President, as to the farmers' institutes, is a good one; the question should be ventilated there in order that the people may know all about it.

Mr. KERNIGHAN.—I have remarked since I began to sell apples that none have been put up to my satisfaction. I have called the attention of the packers to the way these apples were put up. They were put up in a way calculated to deceive. The excuse made was that all the others did it. I have heard farmers scolded from the pulpit for this practice, but the farmer has nothing to do with it. He sells his apples, and the buyer sends men to the orchard to pack them. The ordinary grower, having 150 or 200 barrels of

apples, does not care to undertake the work of packing. He is led to believe that it is a matter requiring great skill and therefore he thinks it best to leave it to those whose business it is, but, if an inspector were appointed through whose hands the apples would pass before being sent away, he would be inclined to pack the fruit himself. I was speaking to a friend from New York who told me that the farmers there pack their apples, subject to inspection, and they have evaporators throughout that section of country, so that all culls are made use of. Not only that, but they have jelly factories, so that peelings and cores are used also.

Mr. RICE (Sodus).—We have no public inspection in the sense of that proposed here. We have no such thing as buyers going out and packing the fruit of orchards. This matter of sending it to an inspector we would not like at all. The buyer himself inspects it, if he does not like it he is not obliged to buy it. We put it up carefully because the culls are taken to the evaporators. The inspection is done by the buyer. The apples are stored in large store-houses and every shipper turns out his apples in the spring, or after the 1st January, and repacks.

Mr. RICE (Port Huron).—In New York State the farmers generally own evaporators, and, as it pays about as well to put the fruit through the evaporator, the farmer does not need to be very particular whether an apple is packed or thrown into the evaporator. That leads to the packing of a better class of fruit.

The PRESIDENT.—The point is not that we want our fruit inspected for this market, because the parties to the transaction are here, but we want to place the buyer abroad and the grower here in such relation that they can do business, on business principles. The buyer can order a thousand barrels of a certain line and be sure of getting them, the Government Inspector standing between the parties, his brand being a guarantee that the fruit is of the quality represented.

Mr. RICE (Port Huron).—I understand the point perfectly, but had some delicacy in making an attack upon the principle. Under the system you propose you might make the whole city of Toronto a dumping ground for fruit and you would not have room enough to carry on such a system of inspection.

Mr. E. D. SMITH.—It could be inspected in the orchard.

Mr. PATTISON.—A system of inspection would be a very good thing. At present the farmer relies far too much on the buyer. A system of inspection would encourage the farmer to ship his own apples. Buyers have been in the habit of giving farmers the idea that it is a very difficult matter to ship apples to the old country, but the farmer of average intelligence will find that it will pay him better to ship his own apples to trust to the mercy of the buyer. In this section of Niagara I have seen immense quantities of apples sacrificed at miserable prices in the orchard when, if the farmers themselves would take the trouble to pack them, they would have realised from fifty to sixty cents per barrel more. And I think if the farmers get into the habit of packing they will put up a more reliable sample than the buyers do.

Mr. E. D. SMITH.—There are different opinions as to the method of inspection, some believing there should be a great central market at Toronto or Montreal, and the fruit inspected there, and others that the inspectors should visit different points to carry out their inspection. The grower will want to know what his fruit is to be branded before he sends it, for it would be against him to have it branded as of lo v grade. The subject of inspection is of wonderful importance. I cannot sell a carload of apples in Winnipeg or in Britain with any satisfaction. The agent will cable asking if the apples are No. 1., and, when I tell him they are, he will order them sent along. If he is a rascal, and there are such in the trade, I am likely to receive a letter that the apples are not No. 1, but No. 2. But, if the apples are branded in the orchard, I can sell in Winnipeg or in the old country at a price and know what I am doing. I believe in the system of western New York, of every farmer packing his own apples. Plenty of the buyers put the apples up better than the farmers would until they got experience. As to farmers losing fifty or sixty cents a barrel, that might be so, but I know farmers who refused to take a dollar a barrel for their apples in the fall and fed them to the pigs in the spring. The

buyers lose money in many cases. I believe in the system of the farmer packing his own apples and offering them on his own ground for sale, then let the buyer come and buy them. I would like to have the committee impress upon the Government the importance of this apple growing industry, which is assuming importance equal to the cheese and cattle trades.

Mr. ALLAN.—Our idea was to leave it to the growers as to whether or not the fruit should be inspected ; we know they will come to it. As to inspection, it is a simpler matter than many think. The initials of the packer should be placed upon each barrel. The inspector at a central point, like Montreal, would soon learn the system of each packer and by emptying a few barrels at random, would be able to judge the character of a lot, for the inspector could easily see if the packer was carrying out his system properly. The rules must be laid down to begin with. Then it would be the duty of the inspector, or staff of inspectors, to see that these rules were carried out in packing.

Mr. CAVERS.—I would like to remind the meeting that there is no system of inspection as to cheese or flour, yet the quantities of cheese and flour going to the old country are enormous. Ontario cheese fetches more in the market than the New York cheese. That is without inspection. Cheese is sold by the brand, the prominent brands of Ontario being well known, and it being quite safe to buy and sell by these brands. It is the same with flour, and my own idea is that the same methods could be applied in the case of apples.

Mr. ALLAN.—But these brands were obtained by inspection.

Mr. CAVERS.—But they are private brands.

Mr. ALLAN.—The brand of each factory is known through the inspection of the Dairymens' Associations, and certain parties are handling these brands. We have heard of brands of cheese going down in the market. Why? Because the inspection is not up to the mark. We have some noted brands in Ontario that are inquired for all the time, because they have been kept up to the standard required for years. We want to get fruit upon the same level and to sell fruit in the same way, We do it to some extent now. There are private parties, shippers, who put up a certain brand of apples and their apples will sell much higher than the general run. If we can lay down the rules by which we can guide the general branding of apples we can extend this very widely. They aimed at that in Nova Scotia and for some years they succeeded very well, and Nova Scotia apples sold at a higher price than we could get for our apples here. But latterly they have not kept them up to the mark and they have fallen off.

Mr. CAVERS—But these are private brands.

Mr E. D. SMITH.—That is the argument in favor of public brands. It took years and years to establish these private brands, but if the public brand system can be brought in it does not take one single year to establish the reputation of the brand. The farmer could have his fruit branded and put on the market at as good a figure as if he had a brand of his own that he had taken twenty years to establish.

Mr. CASTON.—I think the opinion is pretty generally held that it would be a wise move to have a system of inspection of apples. Those who have been out to farmers' institutes know that in almost every locality there are many orchards. A great many localities are in this position. They are growing too much fruit or not enough. They grow too much for the home market, yet not enough to induce the buyers to come and take their stock for export. Many a farmer has from fifty to one hundred barrels of first-class apples that would sell well in the North-West, or in the British market. We want to help these farmers to market their apples, and, by this system of inspection, the farmers would be encouraged to put up their apples and forward them. The carrying out of the system is a matter of detail requiring further discussion. The matter ought to be brought before the attention of the Government again and also discussed in the farmers' institutes.

Mr. ALLAN.—I move that the matter be left in the hands of the committee with power to lay the matter again before the Government.

Mr. CASTON seconded the motion, which was carried.

FRUIT AT FALL SHOWS.

Question 8 was then taken up. "What has been the experience of our members at fall shows? Do they find the quality of fruit shown improving? Are the varieties more choice? Should we advise the agricultural societies to limit the list of prizes to fewer varieties?"

Mr. RACE.—This was my question. I gave it because I wanted to know what was the experience of members in the fall shows. During the past three or four years I have attended a considerable number of fall shows as a judge of fruits, and I find that a judge is sometimes placed in a difficult position. He is expected to name the fruits and put them in proper place. I have been for three successive years judge on fruit in Goderich. It is a most excellent fruit section. I find the best plums there that I find anywhere and good apples also. Sometimes the fruit-growers want to take my head off because of my judgment on pears. The difficulty is that sometimes pears are entered in the wrong classes. I have at times undertaken to classify them and have got into trouble, but generally speaking I was sustained. My experience as to the quality of fruit is similar to that of the gentleman who has just spoken. I think the quality of apples has very much improved throughout Ontario, and I have been very much pleased to find, according to my experience, that no other apples will compare with those grown in Ontario. I used to think that the American apple would hold its place. I am now satisfied that we can beat any section of the American continent in the quality of our apples. I am pleased to find that the farmers are more careful in their choice of varieties, and I have done the best I could to advise the farmers to limit the number of varieties they grow. We want to encourage farmers to go into the varieties that will bring the best prices and will sell the best. One part of this question is, "Should we advise the agricultural societies to limit the list of prizes to fewer varieties." I had thought it would be but I have found that this has been an exceptional year. Up to this year I advised the farmers to abandon the growing of the King and one or two other varieties of that kind. This year the King has been the most productive and profitable in our county. Therefore I had to take back my advice and I cannot now do otherwise than advise the growing of the King in the county of Perth. The seasons may change from year to year, so that it is almost impossible to advise the farmer to confine himself to half a dozen varieties.

Mr. SPRINGER.—I would like to ask Mr. Race a question: "Would you advise the fruit-growers to plant the King apple?" My own experience with the King is that it is the poorest apple I have for bearing. I had a few this year but it is the first year I have had a crop. We should be very careful in recommending any variety. Some are suitable in one locality that are of no use in another.

Mr. RACE.—I have always advised that the King be planted sparingly, for until this year we never got a profitable crop. But this year it has borne heavily and has brought the best prices.

Mr. BEALL.—My experience has not been very great in fall shows, but it has shown me that often a few persons have succeeded in arranging the prize list to their own individual benefit. To a very great extent the money devoted to fruit prizes is divided among a few persons. This ought not to be, but I do not know how to remedy it. The greatest fault of the fall shows is the manner of judging, which has been very faulty I think in a great many cases. It would be better to appoint one judge I think instead of three. My experience is that the quality of exhibits has very greatly improved of late years. But the more showy varieties are brought out by the prize list. You cannot change varieties in a year or two, but there is a change going on and we will see the result after a number of years. I know that farmers are not purchasing many varieties. It is unwise to condemn an apple because it did not succeed in on or two years, the estimate should be based upon the success for a number of years. The question is asked, "Should we advise the agricultural societies to limit the list of prizes to fewer varieties?" I think we should, but as to the way of doing it I hardly know. Those who take a leading part in these shows are not an easy class to mange. There are too

many varieties, many of them perfectly useless in the locality in which they are grown. I do not think the Legislature of Ontario ever contemplated the result which has followed ed the making of grants to these societies. The money being divided among many varieties leads to the growth of many that are entirely unworthy of being cultivated.

Mr. WELLINGTON.—I am sorry our friend from Lindsay has found the local associations so corrupt. I have had something to do with the township and county shows, and, on examination of their prize lists I cannot think they are as bad as he has pictured. As to advising the agricultural societies to limit the list of prizes to fewer varieties, I think that might be profitably done if the prizes were given for the varieties that are best adapted to the section. But in a fair, like the Industrial at Toronto, I would say not to limit the varieties but to increase the list to all varieties that can be grown in the country, because an exhibition of that kind is endeavoring to serve the interests of the whole country. They can bring out their varieties from the northern section that you would not think worthy of cultivation in the Niagara district, and it is an encouragement to the people of the northern sections to be able to show their fruits at a central fair of that kind. While I do not know that the varieties have improved in a great measure, improvement has been made in that we have brought out hardier varieties that are adapted to a wider range of the country than was the case a few years ago. From my experience in the Toronto Industrial I believe that the quality of the fruit shown is steadily improving. This year I think the exhibition of fruit was one of the very best we have ever seen in this country.

HORTICULTURE FROM THE FARMER'S STANDPOINT.

Mr. JOHN KERINGHAN (Benmiller), read a paper on "Horticulture from a Farmer's Standpoint," which, on account of its extreme length, could not be included in this report. He dealt in a detailed manner on the advantages of the garden and orchard to every farmer, and the satisfaction of having a well arranged and tastefully planted door yard, winding up with a peroration on the refining influences of the pursuit of horticulture.

SMALL FRUITS FOR THE BUSINESS MAN.

The following paper on the above topic, written by Mr. Alexander Saunders, of Goderich, was read by the Secretary :

> "Give me the man who can enjoyment find
> In brooks and streams, and every flower that grows ;
> Who in a daisy can amusement see,
> And gather wisdom from a floating straw :
> His soul a spring of pleasure might possess,
> Quite inexhaustible."

To the business man, who with active hand and brain, toils the live-long day, and oft into the night, a moment of rest is most welcome, and where can he get that better than among the fruits and flowers of his garden, often the result of his own handiwork. In the cultivation of small fruits the business man, and I care not what business he follows, will find that relaxation which the tired mind and the active body require, viewed from whatever standpoint you will. The cultivation of small fruits will repay the toiler for all the labor bestowed upon them. Nothing is so promotive of health as fruit, and particularly those we term small fruits. Beginning with the strawberry in June and ending with plums in September. The king of fruits, and the fruit of kings ; not the seedy, shrivelled specimens you buy in the city markets, but the luscious, succulent fruit, fully ripe, and picked fresh off your own vine, with a sprinkling of sugar and smothered in cream. Is the picture inviting? 'Tis within the reach of all who possess a small piece of ground, and wish to

get health and recreation in cultivating them. To the city merchant, whose garden consists of a dozen flower pots, and barely sufficient ground to dry the family washing, this may seem like hollow mockery, but to the business man in the town or village, who is not content with less than a quarter acre lot or it may be an acre, it is quite in keeping. After a day of worry handling "cranky" customers, sales slow, notes coming due, or giving your cheque for some note under discount, which some careless customer should have met, but did not, I go home to my garden, and amid my fruit and flowers soon forget about notes and drafts, and in the pleasant company of my silent companions, build castles in the air, or lay plans for the future until twilight warns me it is time to retire to well earned repose. The amateur fruit grower is apt to be attracted by the glowing specimens of the itinerant fruit tree man so called "new varieties," which, too often, alas, prove to be old friends under a new name. My advice to the amateur fruit grower is, stay by the old reliables. In starting out the temptation is to attempt too much. Do not plant more than you can attend to, a small plot, well cared for will pay better and prove more satisfactory than a larger one indifferently kept. There is one thing about the growing of small fruits, they always repay generous treatment, putting to shame some specimens of humanity. If some of our business men realised how little effort is required to grow small fruit, and how well they would be repaid, I am sure there are numbers who would grow instead of buying what they eat. I might here give a description of the various kinds of small fruits which it is advisable to grow, and the most profitable varieties, but this will be I have no doubt fully brought out by those who are present and who are more capable of speaking on the subject. I may just mention a few varieties which I cultivate, and which might draw from other members hints as to better methods and varieties. In strawberries I plant three kinds, the Wilson, Manchester and Crescent, three rows of each alternately. Raspberries: the Cuthbert and Shaffer. In gooseberries: Smith's Improved, Houghton, and Downing. In grapes: Concord, Hartford, Delaware, Salem and Worden, In plums: Lombard, Washington, Reine Claude, Pond's Seedling and Victoria. In pears: Bartlett, Flemish Beauty, Louise Bonne de Jersey, Duchess d'Angouleme. In crab apples: Hyslop and Transcendent. Standard apples from Early Harvest to winter fruit, one of each.

In buying plants or trees choose some reliable nursery, write to them direct and name your varieties, making your selections from their catalogues which they so liberally supply. Take my advice, and if you have not already done so go into small fruit growing for pleasure and the profit to health and pocket will surprise you, and I will not have written in vain. I may at some future meeting, if the opportunity presents itself, go more fully into the best means of cultivating small fruits and successfully overcoming their insect enemies.

Mr. Caston.—The question of the farmer's garden is a very important one and should be brought up at our farmer's institutes. The great objection among farmers is that they have not got time. If the garden is laid out in the right way it will not take so much time as they think. It is generally laid out in a square patch requiring to be worked by hand, but if it was laid out in long lines it could be worked by horse power. The soil should be enriched with commercial fertilisers and wood ashes rather than barn yard manure. With a garden the farmer can enjoy the luxury of fruit in the various seasons. It is a wonder what luxuries we can have in Canada all the year round for a little trouble. I am a great lover of poultry also and a believer in them. The Canadian hen is going to be an important factor with the Canadian people. At our farmer's institutes we talk about everything but the hen. A neighbor of mine has a garden that is really surprising because he devotes attention to it. He took the precaution to build a high fence around his orchard. You cannot coop the hen up or you lessen her value, but you can make a high fence of edgings from the saw mill that will keep her out of the garden.

Mr. Richards.—I have been growing small fruits for the last eight or ten years, making strawberries a specialty, and I have taken great delight in testing new varieties

and trying to find if there is anything better than the old sorts, and I have found that there are improvements in this direction as in others. I would like to mention a test I had last year. I measured off one-sixth of an acre, had the ground well prepared and planted it with two varieties, Jessie and Bubach. From that sixth of an acre I sold seventy-five quarts of berries besides those I used. I sold also $140 worth of plants. Of course these plants brought more than the general run of plants. But this shows what can be done by careful attendance and good culture. Of course I devoted special attention to this plot, but I am convinced that a small plot well tilled is worth more than double the quantity partly neglected. Though owning only eleven acres I have more land than I can manage.

Mr. E. D. SMITH.—Have you ever made a comparison between the Jessie and Bubach, and the Wilson and Crescent? I had two plots, one with Wilson and Crescent, the other with Jessie and Bubach. The Jessie with us was almost a failure, which put those two varieties a great deal behind. The Wilson was somewhat destroyed. The Bubach was an extraordinary crop.

Mr. RICHARDS.—What kind of soil?

Mr. E. D. SMITH.—A sandy loam with a little gravel.

Mr. RACE.—I do not think it would be safe to recommend the Jessie for the northern sections. I have quite a number of varieties in my own garden in Perth, but I have discarded the Jessie; I found it the most liable to destruction by frost. Two years ago I had no less than twenty-eight varieties of strawberries. I have now thrown them all out but two, and these are the Williams and the Bubach.

Mr. RICHARDS.—I have twenty-five varieties. The Haverland is very successful with me. It gives satisfaction in the home market. I have been selling at the same price as the Bubach, which is the best variety, unless it be the Saunders. I have a great deal of faith in the Saunders, as I have also in the Haverland. It is productive every year with me, and I have had it for five years. I am throwing out the Jessie because it is not reliable, though it is one of the best in quality. It suits the taste of everyone in the Hamilton market, and is the best, with the exception of the old standard varieties

A MEMBER.—Have you found the Warfield successful?

Mr. RICHARDS.—It is a very prolific berry and a good shipper, though I do not like the quality. It lacks flavor.

A MEMBER.—How will the Warfield compare with the Wilson for shipping qualities?

Mr. RICHARDS.—It is better than the Wilson for bearing, but I do not know that it will be much better for shipping. It is a good firm berry, and retains its solidity perhaps a little better than the Wilson.

Mr. CRAIG.—In the matter of strawberries, I might briefly say that in the past two seasons the varieties which have given us the best results are among those that have been already mentioned. The Jessie I would discard. I have noticed that it gives only one or two good pickings, while other varieties, such as the Pearl, Warfield, Haverland and Gandy, have been generally satisfactory. The Osceola will be valuable as a fertiliser for early varieties. It is prolific of pollen and a strong grower. It is very early and may have value. I do not think it has high value for market; it would not ship. For a near market it might have value.

A MEMBER.—Have you the Eureka?

Mr. CRAIG.—It was tried two or three years ago and was discarded. I do not know exactly the points urged against it.

A MEMBER.—Have you tried the Monmouth?

Mr. CRAIG.—Yes. Speaking without preparation, as I am doing, I cannot give the details. I remember the berry, and I know it has not very strong points in its favor. The berries that I first mentioned, I think, should be more generally cultivated. There are many berries that seem to find a place without anything striking about them. I don't think the varieties should be multipled, except for good reason.

Mr. RICE (Port Huron).—The Jessie has proven a failure with us, and our growers are discarding it. The Parker Earle stands high throughout the States.

Mr. CLINE.—As the Crescent Seedling and Wilson are old varieties and have done well, how do they compare with new varieties?

Mr. CRAIG.—In our correspondence at the Experimental Farm I have not advised the throwing out of the Crescent and Wilson in many cases. They seem to have such a wide range of adaptability and to be so generally succesful that I do not think we can say we have a berry that will supersede either of them.

Mr. CASTON.—There is a good deal of difference on account of the soil. If you plant three rows take the Wilson, Crescent and Sharpless, plant in a clay soil, and the chances are the Sharpless will bear as well as the Wilson. Put them in a nice warm loam, where the Wilson is at home, and it will leave the Sharpless in the shade. Now, with regard to the Bubach and the Haverland, I have had no great experience with them yet, but I believe they are going to be very good varieties in our section of the country. At the same time I do not see anything in the varieties lately introduced that, as an all round berry, is better than the old reliable Wilson. There is only one evil and that is the liability to rust in the leaves. Some say it is sour, but not if it is well ripened. I got some plants of the Williams sent out by the Secretary last spring, but only one of them lived. From the performance of that one plant I think it is going to be a wonderful berry. Some gentlemen may have had experience with it, as I understand it is extensively grown in some localities.

Mr. HOWELL (Brantford).—My own experience is very limited. Last year was the first year I fruited the Williams berry. It is creating quite a furore among the horticulturists around Brantford. They are bought as a favorite berry by the canning factory at Delhi. It is a fine berry, with a perfect bloom and large fruit. For my own part, I would say, coming down to a matter of dollars and cents, the Crescent and Wilson are my favorites.

Mr. DAWSON (Brantford).—About the Williams, I may say there is a little objection to its white nose. It is a large berry, has a perfect flower and yields well, but the color is a little against it.

The SECRETARY.—I have been testing about fifty varieties of strawberries the last two or three years, and there are only two or three of them all that I would plant for profit—the Bubach, Haverland and, perhaps, the Saunders. Like others who have spoken, I discarded the Jessie. The Williams I have not tested long enough to say as yet. The Eureka behaved remarkably well last season with me.

A MEMBER.—What about the Wilson and Crescent?

The SECRETARY.—Everybody knows that they have value. In this connection there are some questions which might be answered.

Q.—What is the best way to dispose of strawberries and raspberries, where there is no canning factory, to obtain the best results?

The SECRETARY.—Sell them in the towns is about the only thing to be done, so far as I know.

Q.—What is the best way to get the names of dealers, with their addresses, etc.

The SECRETARY.—I should say the best way was to make personal visits to the towns, and to make arrangements, if possible, with some fruit dealers there. I think that will be better than selling through the commission agencies, if it can be done.

Q.—How often do you make collections, once a day, once a week, or at the end of the season?

The SECRETARY.—It is pretty difficult to collect once a day, or even once a week; I collect once a month. I do not know of any rule on this subject; it is a matter of arrangement.

Q.—How do you obtain orders? By offering the fruit a little ahead, or how?

The SECRETARY.—About the only way to do is to offer the fruit a little ahead, and to make a contract either for the season or for separate shipments. That is a little difficult matter to arrange, one of the hardest things the growers have to meet. The tendency is to ask too much; and the buyers find they can buy cheaper in the towns than from the growers. We get the reports from the towns a day or two old, and, thinking these are the prices, we quote them; but, in the meantime, the price, unknown to us, may have dropped. The only way I know of to meet this is to allow a margin, and to suppose that the market has dropped as the season advances, and to try to keep a little ahead in that way.

LIFTING AND PLANTING TREES.

Topic 16 was then taken up, "Lifting, planting and transplanting trees," and a paper on the subject was read by Mr. D. Nicol (Cataraqui), as follows:

The usefulness and beauty of trees, both fruit and ornamental, is now almost universally understood. Yet a well known fact is that a very large percentage of trees which are planted do not ever become either useful or ornamental. Sometimes the ground on which trees are planted is unsuitable, sometimes the location is unfavorable, but I have good reason to believe that by far the greater number of failures caused by careless lifting and planting, while in many instances failure is the result of planting trees which are too old and of too large size.

My object in writing this paper is with a view of trying to convince some intending planters that their preference for large sized trees is a mistake.

Many men of little experience seem to think that by obtaining large trees they are gaining time. I have seen men renowned for common sense and good judgment in other matters go to the woods with spade, crowbar and axe to lift large trees, cut off all the roots and branches less than two feet from the trunk, and after several days' exposure to the weather, place the butt end of sticks into small holes. It is almost needless to say I have rarely seen such operations succeed.

It is quite possible to remove large trees with some degree of success. I have in my time assisted to remove trees 30 feet high, with trunks from 8 to 10 inches diameter. The chief part of the work was performed with machinery constructed for the purpose, and which lifted along with the spreading roots four to six tons of earth, but this method is of course beyond the reach of individuals of ordinary means.

If trees are transplanted every second year, from the time they are two years old from the seed until they are of large size, they may be successfully removed from one place to another by manual and horse labor judiciously directed. By occasional transplanting the roots are kept in a compact mass near the surface, hence much more easily reached without the necessity of cutting than trees which have not been treated in this way.

Often orders are sent to nursery men accompanied with the request that the trees be of large size, followed up with the argument that human life being short, quick returns in fruit is anxiously desired; yet such orders are seldom accompanied with the remark that such trees are wanted regardless of cost. All nurserymen could furnish large trees with good roots, but it is unreasonable to suppose that any nurseryman should supply trees two or three times transplanted at the same price as trees which have never been transplanted

For orchard planting I would never recommend the practice of planting of large sized trees, even if they could be obtained with fairly good roots, because, although in some instances they might bear fruit the following year after planting, they generally become stunted, and at best make but slow progress compared with trees planted when only three years old from the graft or two years old from the bud.

Another difficulty to be met with in planting large trees is that they are readily bent over by prevailing winds. It has been recommended that in planting they should be made o lean towards the direction from which these winds come so that in course of time they

would be blown to a perpendicular position instead of leaning away from the winds, as would be the case without this care. I have frequently tried this mode, but found it unsatisfactory because many of them were blown not just exactly right.

I have sometimes tried staking, but that often resulted in chafing. Small, thrifty trees with long and copious roots need neither leaning or staking, they rapidly grow into robust trees which stand erect and long endure stormy weather.

Even with young trees obtained from the nursery in good condition as they generally are, there are many failures, and the nurserymen are unjustly blamed.

I have seen thousands of bundles of trees which were killed by exposure of their roots to the sun after being unpacked, and quite as many more destroyed by exposure to frost. Tree roots cannot endure much frost when out of the ground any more than a trout can live out of the water.

Many trees are killed by being planted too deeply. In some parts of the country where our horticultural literature has not yet reached, there still prevails the antiquated notion that holes for fruit trees should be dug very deep and half filled with stones, or a large flag stone placed in the bottom.

Although many trees are allowed to die for want of moisture in a dry time, some are killed by too much watering. Not long ago a farmer on one of the Thousand Islands told me he had, according to instructions from a tree peddler, watered his newly planted apple trees every day since they were planted, and yet they were nearly all dead, and wanted to know whether I thought the water of the St. Lawrence unsuitable for the purpose. A bundle of fruit trees from a western nursery was submerged in the river for over a week; doubtless this was done for the purpose of refreshing them after their long journey. I know of a peddler having advised his customers to defer planting his trees until new moon, but before the specified time arrived some of the trees had lost their vitality, and the nurseryman was blamed for selling trees which would not grow. Where large forests are being established only very young trees are planted. They are lifted with nearly entire roots, which generally are puddled with clay to prevent injury from drouth while exposed; consequently there are but few failures.

In order to obtain a supply of good native forest trees a wise plan is to lift from the out skirts of the woods, or from clearings, stocky saplings of small size; set them out in nursery row on good ground to be cultivated two years, after which time they are in the very best condition to be placed in permanent position.

With nut-bearing trees, however, this mode cannot be recommended, because unless the top roots of the seedlings are cut when one year old it becomes almost impossible to lift them with sufficient roots. Hence the better way is to procure them from nurserymen who make this part of their business.

In spring, after trees have become full of sap, the bark is very easily loosened, and in the operation of lifting a great deal of injury is done by bending, twisting and even hard grasping with the hands when pulling on trees. This injury, although perhaps imperceptible at the time, is shown later on in the season, when the loosened bark becomes discolored and dry. Some kinds of trees, such as the basswood and soft maple, are much more susceptible of injury in this way than others; but many trees of all kinds are damaged by too rough handling.

As regards the matter of fall or spring planting; with many farmers fall is the most convenient season for having the work done, and in moderate climates where intense frost never occurs, trees may be planted in the fall without much risk of being winter-killed; but in localities where the mercury occasionally falls more than 30° below zero, fall planted trees suffer severely.

Planters in severe climates have learned by experience that trees having no root hold of the ground cannot endure a severe winter nearly so well as trees planted in spring and having a good root hold before winter. The practice of procuring the trees in the fall and heeling them in for the winter has been recommended, but this method is objectionable

for trees heeled in with their tops exposed to the weather are quite as liable to be injured by hard frost as if they were planted. Moreover they are far more likely to be destroyed by mice.

If trees are laid in and completely covered with proper depth of earth for the winter they can be taken out in spring in as sound condition as when lifted from the nursery. I have never failed to protect in this way even trees which were too tender for a northern climate, but straw on tree leaves should never be used for the purpose of covering.

Holes in which trees are to be planted may be dug in the fall, then the soil thrown out is in fine pliable condition to be placed about the roots in spring. I think about one-third of the trees planted are destroyed by farm animals, but if all trees sold were to thrive and produce well, I dare say the nursery business would soon become less lucrative; yet I am sure nurserymen generally would rather hear of their trees being treated with a fair chance. It is unreasonable to suppose, as many assuming great wisdom do, that nurserymen should guarantee their stock under all circumstances.

Mr. MORRIS (Fonthill).—There is one thing Mr. Nicol did not mention which I consider the greatest cause of failure in transplanting trees and that is the failure to plant them firmly enough in the ground. When the hole is two-thirds or three-quarters filled the ground should be packed as firmly round the roots as it is possible to get it. You could not pack it too tight if you took a pounder and used it just as you do around a post. This is particularly true of pears. When the soil is left loose around the roots and the weather turns dry the soil shrinks away from the roots and consequently the roots cannot take hold and so the nurseryman is blamed for sending out bad trees.

Mr. PATTISON.—I would like to direct attention to one point and that is the importance of mulching. On a heavy soil the importance of it cannot be overestimated.

Mr. PEART (Burlington).—I have here a catalogue of apple trees and three sizes are given; first five to six feet, that is the medium size, one size four to five feet and an extra size six to seven feet. In a general way, which would be the best size to plant?

Mr. READE.—The medium size.

Mr. RICE (Port Huron).—Would you plant a little deeper in the holes than they wore growing in the nursery?

Mr. MORRIS (Fonthill).—Yes; about an inch or so deeper. If they are properly planted there is no occasion for failure to any extent. You do not need to lose one tree in five hundred. The trouble with pear trees, as I say, is that I never found a man yet that pounded the earth firm enough around the roots. In connection with that I would advise the planting of pear trees in the fall. They will make nearly as much growth the following summer as they would the second season following if planted in the spring. Planted in the spring they make very little growth the first year.

Mr. PEART (Burlington).—I would like to ask a question as to the use of tar paper. In order to protect young trees from mice I put tar paper upon the trees, but I found on taking it off that the trees were scalded in some cases for the length of the tree covered by the tar paper. Only a small proportion of the trees seemed to be affected and then only the outer skin, and, so far as I could see throughout the season, the general health of the trees was not affected. Is it known to any one present if this effect was due to the tar paper?

The SECRETARY.—I have had a little experience that may throw light on the question. Some years ago the canker worm was bad in my orchard. As the female moth of the canker worm was wingless and climbed into the tree I thought if I could prevent them climbing I would save my trees. I put a band of tar around every tree. So far as the canker worm was concerned the result was what I desired, but I found that the trees were affected much as my friend states with regard to his, and some of the trees have never got over it. Some of the bark was so badly injured by the tar that the trees never recovered. The trees were fifteen or twenty years planted. It was coal tar that I used.

Mr. RICE.—Was the tar paper tied tightly?

Mr. PEART.—Not particularly, There was a space of about a quarter or half an inch between the trunk of the tree and the tar paper.

Mr. RICE (Port Huron).—I have made use of the tar paper and was much pleased with it. I never took it off, but left it to drop off or wear off. Professor Cook requested me to note whether it was not an insecticide and whether it would not operate to keep the cut worm away from the tree and keep the borers from making an attack on the peach tree.

WILLIAM FISHER (Freeman).—I have used tar paper on my trees and have seen something of the effect that Mr. Peart states, that is, the part was a little discolored, but as time went on the trees showed no bad effects from it.

THE WORLD'S FAIR.

The report of the committee on the World's Fair was presented as follows:

Resolved, That the Dominion Government be requested to provide the cost of transportation of our Ontario fruits to the Exhibition, and maintenance and care, including boxing.

Resolved, That the Ontario Government be requested to provide the cost of making a collection of the fruits of Ontario, and also commissioners to superintend the same while on exhibition.

Resolved,—That this Association send a delegate to Ottawa to co-operate with the delegation from the Agricultural and Arts Association and Stock Breeder's Association.

ALEX. McD. ALLAN, Chairman.
P. C. DEMPSEY,
M. PETTIT,
W. E. WELLINGTON, } Members of Committee.

Mr. CASTON moved the adoption of the report. Carried.

NON-PRODUCTIVE APPLE ORCHARDS.

Mr. F. G. H. PATTISON (Grimsby) read the following paper on "Some causes for non-productiveness in apple orchards."

Considering the amount of land devoted to apple orchard in this province of Ontario, we do not produce the quantity and quality we might. As to the quantity perhaps I hear some one say that it is a good thing we do not produce more, but I beg to differ with that person, holding that, provided we keep the quality up to the mark we can well afford to increase the quantity. There is no doubt that a large number of orchards have not paid in the past, do not pay in the present, and in all probability will not pay in the future. Why? Simply because the two Q's are lacking, viz., quantity and quality. Again why? Some of the reasons for this latter why it is the object of this paper to discuss. The leading and most common cause is starvation. For it is not too much to say that the average farmer who either plants out an apple orchard for himself or buys a farm with one already planted, afterwards goes on treating the land precisely as though that orchard did not exist, cropping wheat, oats, rye, etc., in a rotation, or want of rotation, till the wonder is, not that the trees do not bear satisfactory crops but that they are alive at all! A leading American horticulturist has put it upon record that three crops of rye will ruin an orchard, which is undoubtedly true, but in my opinion from the time of planting till the death of the trees from old age or some other cause, not a single crop of either rye, wheat or oats should be taken from the land. The orchard will not stand these crops and produce good apples as well, so if you get a crop of grain it is simply at the expense of your trees. Surely the main crop to be looked for from an apple orchard ought to be apples, and to that all other things should be subservient. Must we then lose the use of the land altogether for other purposes from the time of planting till the trees reach bearing age?

By no means. We can raise roots, corn, peas, buckwheat, hay pasture and even an occasional crop of barley, not only without hurting the young orchard, but actually to its benefit, if accompanied with a judicious use of manure. "Aye, there's the rub," for to do itself justice the orchards need plenty of that same, and generally do not get it.

They should be lightly manured every year, as Professor James told us last year in this very building; if not that they should receive a heavier application every alternate year. And as potash is the main element withdrawn from the soil by a crop of apples, in our application of manure we should govern ourselves accordingly. Feed your apple orchards well, gentlemen, and they will feed you and your children, especially the latter.

Another prominent cause of non-production is that the kinds set out are not suitable either to the soil or to the locality. Before planting farmers "should mark, learn and inwardly digest" their neighbor's trees as well as the fruit thereof, for the kinds that do well across the fence, will, provided the soil be similar, probably do well with you. Even well known varieties sometimes fail on this score, *e. g.*, I have noticed that in our own locality of Grimsby the Baldwin is not profitably grown upon a light soil. Too great vigor and growth of wood is another reason for little fruit, for undoubtedly there are orchards well manured and cultivated which yet yield lightly. This generally happens, I think, on a deep, loamy soil. I would suggest as remedies: (1) Allowing the orchard to go to sod for a considerable period. (2) Heading the trees in thoroughly. (3) Digging a trench on one side of each tree and cutting every root to be found there. This latter will often cure barrenness when all other remedies fail. If of suitable variety and if the treatment be right the trees *must* bear (except in cases of frost or blight), just as a hen must lay and wheat must form in the ear, if their conditions are right. Hence, it is a pity, I think, to tear out young, healthy trees of good varieties without, at least, trying some of the remedies thoroughly, but it has been done to a considerable extent of late.

The bark-louse is answerable, too, for some unproductive orchards. Go through the country almost where one will, you will see orchards suffering badly from the ravages of these little pests, and this too when the remedies are cheap, easily applied and widely known.

Over and under-pruning contribute their quota of barren orchards, and also some other causes which I have not named, but enough has been mentioned for discussion which I take it, is the main object of the paper read before our Association. The three leading causes, in my opinion, however, undoubtedly are starvation, unsuitability to locality or soil, too exuberant growth of wood, and the greatest and commonest of these is starvation.

Mr. Springer.—I quite agree with the writer of the paper that starvation is the first cause of barrenness in our apple orchards. It is a difficult matter for me, I find, to get sufficient fertiliser to cover my orchard. I use all the barnyard manure I can get, yet I have trees that I have treated very liberally that have never borne a satisfactory crop. This question of increasing the production is a vital one with me. I have been told of the value and usefulness of root pruning. I have succeeded by that method in getting a very full bloom the following season, that is, if the work was done in the spring, but it was not always followed by a crop of fruit. A neighbor of mine whose orchard was not very productive told me that his trees needed heroic treatment and that he would show me how to grow apples. He gave it the heroic treatment and the following year the trees bloomed profusely. He spoke of this and seemed to think the advantage of his method was completely proven, but I said we would wait for the crop. From about four hundred and fifty trees he did not have five barrels of apples, while I with a sparse bloom, had a fair crop. Speaking of fertilisers, I have tried apple pomace. I expect to be criticised here, as many people think its use absurd. I used it on about one hundred Northern Spy trees. It was powdered thoroughly and I applied it on the surface in the spring. This year, off that block, I harvested one hundred and fifty barrels of choice Northern Spys. Sowing rye and plowing it under also has a good effect.

Mr. RICE (Michigan).—My barren orchard has been discussed by growers all over Michigan and in our Society. At the last meeting one man asked me if I had tried apple pomace. The gentleman who has just spoken is the second I have heard speak of it and as two witnesses are said to establish the case, I am going to try it.

Mr. SPRINGER.—Do not apply it too thick, but so that it will get the benefit of the winter rain. Do not take it out of the pile in the spring where it has been fermented and reduced to vinegar. If you do the result will be a positive injury. Get it fresh and put it on while fresh.

Mr. RICE (Sodus).—The thinner it is spread the better.

Mr. SPRINGER.—Be sure to break up the lump.

Mr. RICE (Port Huron).—How thick ought it to be spread?

Mr. SPRINGER.—An inch is plenty.

Mr. ORR.—I can tell you something about plowing in grain to fertilise the soil. I had a piece of ground, a very poor clay, so poor that it would scarcely grow grass, and I was anxious to have a pear orchard there. In the spring I would sow buckwheat, allow to come near maturity and plow it in. Then I would sow rye and do the same. I did that until the ground was in good order and it bears now large crops of pears and the trees are doing splendidly.

Mr. HOPKINS.—The paper recommended sowing not grain but root crops, yet said that potash was what was necessary for the fruiting of these trees. Now, I am to understand that root crops do not take as much potash out of the soil as grain?

Mr. CASTON.—The potato is a great feeder on potash and if you plant potatoes you will exhaust your soil of potash. This is why wood ashes become so valuable a fertiliser, because both the growing wood and fruit requires potash. In the northern districts the potash helps the wood to resist the cold, making it of a firmer texture. The easiest crop you could put on an orchard, I dare say, would be a crop of peas, but in a young orchard you want to cultivate, and the calculation is that by cultivation and fertilising you make up for the loss by planting a root crop.

Mr. PATTISON.—I think what Mr. Caston has said is quite true. I do not say you should devote your orchards to roots. I only advocate that roots should form part of the rotation in the orchard. The plan I followed, and the president can witness that it has had good results, is to follow a rotation and have the orchard plowed under very deeply every three years. First take a crop of peas, follow that with a crop of corn or buckwheat. Before the crop of corn we manure heavily. Then put in barley and seed down; take one crop of hay, top-dressing around the trees with a mixture of wood ashes and superphosphates, about a bushel to a tree. The trees are about fifteen years old. Seed down the first year they are top dressed in that way. Then we pasture with pigs and calves. Then a heavy coating of manure and repeat the process. But where manure is scarce and cannot be applied better cultivate and take no crops off.

Mr. A. M. SMITH.—Did you not say to take no corn off?

Mr. PATTISON.—I said take neither wheat, rye nor oats. I do not consider barley as destructive. Barley, especially if sown early, derives its sustenance largely from the atmosphere and does not draw heavily on the ground, not to the same extent as wheat or rye. I have found good results from the system I have mentioned.

Mr. DEMPSEY.—The crop we should undertake to produce in my opinion from an apple orchard is apples, and I do not believe the man is manifesting great wisdom who will undertake to grow in his orchard roots or grain of any description.

The SECRETARY.—There is another cause of failure in our apple orchards which has not been considered. I believe that very often the reason why trees are barren is because they are not in a healthy state. I believe that the fungus which produces the scab on the apple and the leaves has something to do with the failure in fruitfulness. If that is one reason why they are not bearing, there is a remedy which has not been spoken of, and that is spraying with a solution of carbonate of copper, and thus furnishing the means

of the tree putting forth a healthy foliage and also an abundance of healthy ripe fruit. I am very hopeful that in the treatment of our trees with the carbonate of copper we will find we can destroy not only the apple scab but get more and better fruit.

Mr. CRAIG.—I heartily agree in what Mr. Woolverton has said. We should think more of this matter and should try to keep our trees in perfect health. If the scab is not with us this year we should still spray the trees, because, though it does not appear in the fruit, it probably exists in the leaves and twigs, and the growth may be injured and the fruitfulness lessened thereby. But by spraying we kill off the scab and increase the vigor of our trees, and thus increase their fruitfulness and the quality of the fruit. People must fight these enemies from year to year in order to get rid of them.

MELON CULTURE.

Mr. P. C. DEMPSEY opened the discussion upon the next topic--"Melon Culture for Profit," by a short extempore speech. He said: I will just give you a little practical experience. In order to grow melons we must have a suitable soil. The soil that is most suitable I find is of a very light texture and always a warm soil. We find in every section of the country where they cultivate melons extensively they have a sandy soil. The soil cannot be made too rich. It should be thoroughly fertilised before planting your seed and brought up to a perfect state of cultivation. Another thing is very necessary—pure and good seed. I do not wish to censure any seedsman, but it is very difficult for us to get good seeds from any seed house no matter how reliable. This is from the fact that the pollen from the cucumbers, pumpkins and squashes is carried sometimes over the melon patch, and the result is that many of the melons that are produced from the seeds thus grown are found to be half cucumber or pumpkin and are thus quite useless. In this city and in Toronto, where the market gardeners pride themselves upon possessing great knowledge on these points, I have seen some of the poorest trash of melons I have ever seen anywhere. If a man puts one such melon on the market, the people do not want the second, and his trade is apt to be ruined. We have heard about the unlimited market for good fruit. The same is true of the market for good melons; there is no danger of overstocking it. To get good seed we must first trust to luck, but when we have got it we must go on and produce it ourselves. To do this we should provide glasses or frames about four feet square, start our melons a little early in the season under glass and impregnate under glass free from the pollens of cucumbers, squashes and pumpkins. In this way we can get a generation of melons worth growing, as long as we cultivate the seeds properly. When we get our seed planted, there are two or three things we must be particular about. We must not plant it so near the surface that the drouth will prevent it from germinating. As we have so few seeds we want to protect them from cut worms and other enemies. In order to do that we can plant cucumbers or common melons around the outside of the bed, and as soon as they are peeping out of the ground give them a little taste of Paris green and the result is we kill the cutworm. The young plant will grow faster if we keep it cultivated, hoed well and the soil kept well up to the underside of the leaf. To be successful we should cultivate it at the least calculation every other day. It does not take long to go over an acre of melons six or eight feet apart. We can cultivate between them with a horse, but it should be done with our hands until the plants get large. Again it is very requisite in order to insure productiveness to commence "pinching." When the vine starts out if we allow it to run as it pleases it will run very fast and you will very seldom find a perfect blossom bud within three or four feet of the hole. We can prevent that by pinching the end of the plant and thus will induce laterals to start out, and invariably upon these the embryo fruit will set. We want to continue this until the melons are half-grown. There is danger in neglecting it. I have seen whole crops of melons planted a little close allowed to grow so as to cross each other several times which is followed by mildew, or as melon-growers call it "damping off." The plant will damp off near the centre and in a short time the whole foundation will be rotted down. I have had it happen with my own

melons when I have been obliged to neglect this careful system of cultivation. Now we have to consider the striped bug. It is the easiest thing in the world to prevent an attack from these little creatures. The application of a little hen manure or almost anything with a strong smell will keep these bugs away. A little common gypsum or land plaster will sometimes do it. The attack upon the leaf is not so much to be feared, but these bugs deposit their eggs near the root and so destroy the root of the plant.

Mr. CASTON.—A few years ago Prof. Saunders brought to our meeting the seeds of the Russian watermelon that was said to keep through the winter. I got some but lost them. Has any member grown seeds of this melon?

Mr. DEMPSEY.—I have kept melons into the winter, but a watermelon at Christmas or New Year's is about as great a treat as a chunk of ice would be.

Mr. CRAIG.—I don't think the seed of this melon has been grown to any extent in Canada except at Como on the Ottawa river. It is grown there by Mr. J. J. Gibb, uncle of Mr. Charles Gibb. I think the seed is also sold by a Chicago house. One melon of this kind is known as the Volga, I believe they come from the Volga district. As Mr. Caston says, their principal recommendation is their keeping qualities, though their other qualities are very good. The rind is thin and they are of the citron tribe. But they are too late for most of the northern parts of the province. I think they would be too late for Mr. Caston's district.

Mr. DEMPSEY.—When I undertook to grow some vegetables in the county of Northumberland, they said to me: "Are you going to grow melons? Why the boys will steal the whole of them." I said, "No, they won't." I planted a couple of acres of them. I would see a boy going away with a melon under his arm, but it made no difference. The plan is to plant so many that you won't miss what the boys steal.

PRUNING TREES IN COLD WEATHER.

Q.—Would you consider it unwise to prune pear and plum trees planted five years while there is danger that the wood is frozen?

The SECRETARY.—I believe there is danger of pruning trees in very cold weather when the wood might be frozen, especially the smaller limbs. I have seen trees that certainly appeared to be badly injured because they were pruned in the dead of the winter when the weather was exceedingly cold. It would appear that the cells of the wood are more exposed to injury by frost when freshly pruned. I always feel that caution is necessary from the fact that I have seen trees badly injured from being pruned in midwinter. As to manure on frozen ground, I think farmers and fruit-growers agree that to spread on the frozen ground is the most economical way, and there is no loss unless there is a side hill where the strength can be washed away. It is safe while it it frozen and in spring it is there where you want it. The most economical way is to put it in its place as fast as we can procure it in winter time or otherwise.

Mr. NICOL.—I know a farmer who keeps forty cows and has an orchard. He drew out the manure last January when the ground was frozen hard and was covered with ice. In the spring I watched the result. Judging by the color of the streams from the orchard I should say that everything solvent was run into the St. Lawrence.

Mr. RACE.—You cannot get stronger proofs on that subject than by noticing the value of street scrapings. I have used street scrapings and from my experience I would not give fifteen cents a waggon load for such material for fertilising purposes. The good is all washed out of it.

Mr. WELLINGTON (Toronto).—As regards winter pruning of young fruit trees, we would not think of such a thing. I am satisfied that one of the great causes of young

fruit trees being black-hearted is the pruning of them too close to the trunk and pruning them in the winter. I can call to mind two or three lots of trees that became black-hearted after pruning, though the man is an expert in the business. From questioning as to the way they had been handled I was satisfied that it was brought about by pruning the young wood in the winter and leaving a wound through which the frost had operated. In the cultivation of young trees a great many nurserymen, I notice, do not summer prune. By summer pruning you get a tree with not so much wood in it, but one more healthy and smooth in the bark.

A MEMBER.—I would like to ask Mr. Wellington with regard to large tree planting. Would he plant one or two year old common pears in preference to others?

Mr. WELLINGTON.—I would advocate in all cases the planting of young fruit trees. I would advocate that every tree that was grown in the nursery should be transplanted as a seedling and then, perhaps, sent out when a two year old or a three year old tree to the planter. But the objection is, your customer is only satisfied with a large amount of wood. If you transplant you immediately lessen the next year's growth, it is more stubby growth and the bark becomes rough and discolored. Such a tree, if delivered to the ordinary purchaser, would be rejected, but it would be a tree that would invariably live.

REPORT OF THE FRUIT COMMITTEE.

The report of the Fruit Committee was read by Mr. John Craig as follows:

APPLES.—Oakland, a nice apple exhibited by Mr. C. B. Rice.

E. C. Fernside, Hamilton, exhibited twelve varieties.

J. P. Cockburn, Gravenhurst, exhibited a cross between Duchess and Snow, said to be extra hardy, mall; poor quality.

G. C. Caston exhibits four varieties, including a fine sample of La Rue.

W. S. Turner, Cornwall, exhibits fourteen varieties.

L. Woolverton exhibits eleven varieties, named, and a seedling from R. Lewis, Maitland, of the Fameuse type.

F. L. Dery, St. Hilaire, exhibits Alexis Baldwin and Alexis seedling, much alike, and both resemble Canada Baldwin, but evidently later winter.

G. F. Emerson, Valentine, fine plate of King.

Thos. Beall, Lindsay, Ontario, a plate of King and a plate of seedlings which obtained second prize at Dominion Convention of Fruit Growers, fair size; yellow, with golden blush.

D. Nicol, Cataraqui, a seedling, large yellow cooking apple; also the Gibson, much resembling McIntosh Red in appearance and flavor, but not as good in quality; also Monmouth Pippin.

Henry Kronsbein, Hamilton, Rambour, a large yellow coarse apple.

A. M. Smith exhibits four varieties of apples.

Mr. Walter Dempsey exhibits of fine collection of seven varieties.

P. C. Dempsey, seedling No. 87, as a cross between Golden Russet and Norther Spy, is medium to large, dark red, late winter, fair quality, commended; also Dempsey No. 90, a small oblate apple, dark red, rather small.

Mr. A. M. Smith exhibits four varieties apples for name from A. W. Graham, St. Thomas, Ont., also a seedling apple, probably large, showy, and would seem to be good for cooking.

PEARS.—G. W. Cline, Winona, shows Mt. Vernon, Onondaga, Beurre Clairgeau.

Unknown exhibitor, Lawrence, Easter Beurre, and Glout Morceau.

Mr. A. McD. Allan a fine sample of Beurre d'Anjou.

Mr. Hamilton, Oswego and Beurre d'Anjou.

Mr. Wm. Fisher, a plate of immense Beurre d'Anjou.

A plate of Champion Quince by A. M. Smith, St. Catharines.

GRAPES.—A. M. Smith, the Niagara; G. W. Cline, the Catawba.

JOHN CRAIG,
E. MORRIS,
D. W. BEADLE, } *Committee.*

HARDY PLANTS.

The evening sitting was specially devoted to Floriculture.

Mr. A. GILCHRIST, 2nd Vice-President Florist's Club, Toronto, read the first paper, which was on the subject of "Hardy Plants," as follows:

A garden of hardy perennials of choice sorts is the most delightful garden for the amateur who has no greenhouse, and the only one that will give constant pleasure. From April to October there is an ever changing panorama of exquisite beauty and delight. This is Nature's way, new surprises every day, every week, every month, from early spring to late autumn, when the snowy mantle covers all up till another spring.

The nearer we keep to nature, the nearer to perfection will our gardens be, and why? Because we are at best only part of nature, and we must get in sympathetic touch with nature and get it to run as a golden thread throughout the fabric of life, before we can be really happy; and life has few charms unless we are happy. Who should enjoy life to its fullest extent better than the farmer, or fruit-grower, with nature all around him; if he is in sympathy with it he ought to be the happiest of mortals. If this sentiment was more universal it would mean contentment, health happiness; yes, and we would hear of fewer of the boys leaving the farm. All this fineness of feeling is not born of knowledge, facts intensify it, and sometimes give substance, but they do not give it birth. Education is not the mother of it, whether the education is received at college or at home; education is culture of mind and heart; knowledge is the mere filling up. The farmer sends his son to college and expects him to learn only practical facts, and by means of practical facts, dollars and cents.

The subject of hardy plants is a vast one, and would require more time than I have at my disposal, and perhaps an encroachment on your patience. Our grandmothers' gardens were most interesting. Perhaps some listening to me now will remember those grand old flowers of our grandmothers' days. Now let me tell you these old fashioned flowers will be born again, and soon become fashionable here, as they now are in Britain and the eastern States of America; and the time will soon be here when we may learn of their beauty and usefulness. There has been many introductions in recent years, and great advances have been made in hybridisation. There are many hardy plants of which few of our gardeners of the present day know much about; we have hundreds of hardy plants from northern latitudes, Alpine and sub-alpine regions, from wooded glens and rolling prairies, from China and Japan, and the hilly regions of Turkestan, and our lovely native plants and hardy ferns which have only to be known to be appreciated. In passing I will give you a brief description of a plan for a garden.

To lay out a garden of hardy plants there is ample scope for the landscape artist. It must not be the old style of hardy border; it should be more in keeping with the glimpse of lovely gardens we have seen in our rambles in the woods and dells. The artist goes to nature for his subject to put on canvas, and why not the landscape artist to adorn our homes, which at best is done in a manner that is too artificial. I would plant in groups and colonies, a dozen of plants or so in a group; no geometrical figures, no clipping, no disfiguring, each plant, group or colony showing its own individuality and character. Tall bare plants, carpeted under by low running plants to hide the ground entirely; a solid bed of verdure, and no brown earth to be seen. The old fence at the back, covered with all kinds of creepers, running at their own sweet will; "Virginia creeper" with its ample palmated foliage and its intense color in autumn, "bittersweet" with its grand glossy foliage and curious fruit; some of the large flowering "clematis," blue and white, and even "clematis Virginiana" should all find a place in such a garden. If bare spots occur, sow sweet peas or perennial peas; plant spring flowering bulbs in abundance, and when the bulbs dry down, they can be replaced with verbenas or annuals, which will make a fine show and from which you will derive a great deal of pleasure. This continual changing seems to be in keeping with our nature, we are continually looking for something new. This very change is both rest and exercise to our minds. As the summer advances hardy perennials are getting to their best, and what a wonderful variety of

beauty, for there are always some in bloom, and not only the flower, but the foliage is varied—such different shades of green, keeping the artistic eye in constant delight.

Let us contrast our present system of bedding. We have brown beds in spring, planted about the 1st of June, will be in fair condition in July, at their best in August, cut down with frost in September, and done. Nearly all this time the owner has been rusticating up in Muskoka, or by the lake or seaside, enjoying nature to his heart's content, and comes home to see the remnant of his once fine beds. This is supposed to be our highest art in gardening, but a brighter prospect is before us, sub-tropical gardening is looming up with beautiful foliage and grand borders of hardy plants, which the ignorant as well as the man of taste will enjoy. A garden of hardy plants is undoubtedly a garden of cut flowers, which are now so much used for decorating the house. This is as it should be. Flowers on the dining-table are just as useful as a pieee of bread, though perhaps not so satisfying. But a thorough knowledge of the plants we use must be obtained, whether by amateur or professional gardener, or else a heterogenous mass will be the result. To know the hardiness, time of flowering, height, habit and coloring is absolutely necessary before satisfactory results can be obtained, and, even after every possible care has been bestowed, many changes no doubt will be necessary to bring it to perfection. As we have little or no experience in the past suitable to our climatic conditions, many plants have to be tested to see if they are hardy, and what is their exact value, and for what purpose. I will mention a very few that may be sure of giving satisfaction, and that have been tested in our country.

Aquilegia Coerulea, Rocky Mountain Columbine, the most lovely of all Columbines, white and blue flowers in early summer; these long spurred Aquilegias are ahead of any hybrids or double varieties I have ever seen; no man can improve on this lovely flower. Aquilegia Canadensis, our native species, yellow and red, is also good.

Becconia Cordata.—Fine tropical foliage, hardy, inclined to get out of bounds.

The *Campanulas* are all good. We have a dozen of really good sorts; I cannot begin to give a description of them.

Delphiniums.—This family is just as important as the last, and when done flowering, by cutting the decayed spikes, a second crop of flowers may be obtained in the fall.

The *Funkias* are a choice class of plants, their foliage is remarkable as well as their beautiful flowers.

Gallardias is a new hardy class of plants that is going to take a high place in gardening operations, they are constantly in bloom through summer and autumn.

Hollyhocks.—All know that they are indispensable for effect in the garden.

Heuchera Sanguinaria.—A new plant of great promise, and hardy crimson flowers.

Iris.—This is the hardy Orchid of the garden. No wonder that the most polished people in the world took this lovely flower for their national flower. The Iris is the most graceful hardy plant in cultivation. The pencilings and delicacy of coloring is most charming. Its history is as ancient and extensive as the Lotus; the Japan and German Iris are the most beautiful.

Pyrethrums.—Roseum and its hybrids are a new creation, perfectly hardy; a florist's flower, fine for cutting, a grand decorative plant, but slow to propagate, and exceedingly difficult to import. This I know from experience, having lost three shipments. The double sort is very like Asters, only it flowers very early in summer.

The *Anemones*, Japonica, alba and rosea, are the grandest of autumn flowers, good for cutting. A garden of hardy flowers is not complete without them.

Mr. CRAIG.—We have at Ottawa a botanic garden started where I think it will test the point Mr. Gilchrist alluded to, that of the hardiness of the various plants. This garden was begun when the farm was started three years ago, and as a matter of information, I might say that the plants are set in groups, according to their families, and somewhat in the order in which we find them in our manual of botany, that is, the different families by themselves, not with any mathematical regularity, but grouped. So far it includes only shrubs, but we will fill it, so far as we can, with hardy perennials and other things as time goes on.

A MEMBER.—Are you testing our native shrubs?

Mr. CRAIG.—Yes, everything.

Mr. SUMMEY.—I would like to recommend Eulalia Zebrina. It is included in the collection that I have, and has really attracted more attention from passers by than any of the other plants. It grows about five or six feet high and is very graceful, and in the fall has on each of the main stems, a plume which is fine and feathery as it ripens. I think it is perfectly hardy in almost any situation.

Mr. MORTON.—Of course, the subject is a very extensive one, and in the list given many plants were omitted, for if all were included that one would like to see included, the paper on the subject would be a mere list of these plants. The list of hardy plants we have natives of Canada alone are sufficient to afford a splendid selection, without taking any of those found in foreign countries. Mr. Gilchrist mentioned the Gallardia. There is a Gallardia in the North-West, the Aristata. It is magnificent, and it has also a sweet scent. I have seen also grandiflora, and it is not one whit behind the others. It is uniform in its markings, and of a bright orange yellow. There is one shrub, not native, that I think is suitable for the border and that I would like to see grown. This is the Dictamnus Fraxinella. It belongs to the Rue family and is very sweet scented. There are many others I could mention that I think make excellent ornaments for the lawn. The high-bush Cranberry is one. It favors low swampy ground, but it will grow admirably upon high ground. Not only is it beautiful, but the flower is succeeded by those fine clusters of bright red berries which form an object of attraction in the field, and if you are hard up for cranberries you can use these, for they are an excellent substitute for the marsh cranberry. I have seen also Viburnum Lentago or Sheep berry growing in the lawn. It is a beautiful shrub. All the Viburnums are hardy.

The SECRETARY.—If we had a botanical garden it would be of much value to us. I would like to see a committee of our friends appointed, who are workers in this line, to consider the matter and report to us further. I would propose Messrs. Morton, Gilchrist and Webster. The resolution was carried.

HARDY PERENNIAL PLANTS.

Mr. WEBSTER, representing the Florists' Club of Hamilton, read the following paper on this subject:

The ordinary observer can hardly have failed to notice the change that has taken place in the gardening tastes of our people during the past few years. A change that has not been confined to any particular class, but that is noticeable to some extent in nearly all gardens where flowers are grown. I allude to the rapidly increasing desire, I may say demand for the hardy perennial plants. Until within the last few years, the demand for herbaceous or perennial plants was very limited, but a turning point seems to have been reached, and there is now every indication of the old favorites that grew in our grandmothers' gardens being restored to their places of honor in the near future. These are not, however, to any great extent, the varieties of the old gardens, but in many instances only the same species which have, in the hands of skilful hybridisers, undergone a marvellous improvement. The varieties of Peonies, Pyrethrums, Phlox, and I think I may say Delphiniums being now numbered by the hundred. It is doubtful, however, if a multiplicity of varieties is desirable, except perhaps in an experimental or botanical garden. Among those who consider a blaze of scarlet, or kindred shades, a necessary feature in the flower garden, the Geranium will probably continue to reign supreme; elsewhere this now popular plant will in all likelihood be called on to divide the honors with such aspirants for favor as the Campanula, Coreopsis, Aquilegia, Delphinium, Digitalis, Galilardia, Hemerocallis, Iris, Peony, Pyrethrum, Potentilla, Lychnis, etc., all of which may now be had in great variety. Among the many traits that recommend the hardy plants to the possession of a flower garden is the uninterrupted variety of bloom which may by a judicious selection and regard to planting, be kept up throughout the season, beginning with such as Anemone Triloba-Aubrettia, Primula Vulgaris, Phlox Subulata in variety, Lily of the Valley, Daisies, Violets, Arabis, Polyanthus, etc., and closing with

such as Anemone Japonica, tall growing Phlox, Helianthus, and Tritomas, the latter blooming persistently even after repeated hints from Jack Frost that it is time to quit. There is no more suitable place in the garden for the hardy bulbs than the herbaceous border. The early display being greatly improved by such as the Snowdrop, Scilla, Crocus, Narcissus, and many others, while later the Crown Imperial, and Lilium Candidum and L. Tigrinum are almost indispensable. These will be found to be entirely hardy; I might add our natives, Canadense and Superbum, which if they came from Japan would be much more highly esteemed here. In preparing for a bed or border of hardy plants, it is desirable to dig and manure thoroughly before planting, as some years may elapse before it can be dug throughout again. It is possible that the best effects may not be obtained at the first planting. For those not fairly well acquainted with the colors, height and season of bloom of the respective varieties, it will probably be found desirable to change the position of some of some of them in order to obtain a better harmony of color, and I might say a better general effect. Many varieties may be taken up and divided every second or third year, thus an opportunity is afforded to dig and enrich those parts of the border where plants may be lifted. The fall is the best season for removals, plants moved then seldom sustain any check. In planting perennials it is well, if space will admit, to plant fairly large areas of each variety, even should the number of varieties have to be limited, as for instance a spike or two of Lobelia Cardinalis, Oenothera, or a single bloom of Papaver Orientalis would probably escape notice, while a clump of a yard or so in extent would be remarked and admired by all observers.

Keep a close watch upon the weeds, as in a border of this description they are very hard to eradicate, if they once get a good start. I have frequent opportunities of remarking how little known many of this class of plants are, yet how quickly they catch the eye and engage the attention while in bloom. Some rows of Yucca Filamentosa and Tritomas on my grounds, near the road, are annually an object of interest, many being sufficiently interested to inquire as to their hardiness, names, etc. The flowers of a large number of the perennial plants are excellent for cutting and durable when cut; and a few sprays of almost any of the before mentioned varieties, cut with long stems of unequal lengths, and placed apparently without care in a vase, forms an object of beauty that is at once simplicity and real art. It is to be regretted that our Province possesses no public gardens where the little known plants, shrubs and trees may be seen, or in other words a botanical garden for Ontario; the necessity exists. Certainly our people would appreciate the benefits to be received from such an institution, as much as the residents of the South Australian colonies, where there are, I understand, three such establishments flourishing. There are four or more in British India, and at least one in British South America, one in the Mauritius, and possibly others that I have not mentioned, besides those in the mother countries. We are behind the times, the premier province in Britain's greatest colony is in need of a botanical garden. I believe that there are some now present who can give an outline of the good work that can be accomplished by these means. Would it not be well for this Association, which has already done much for our Province, to consider this matter, if it is at once decided to be a necessity. An organised co-operation of horticultural and other similar societies, an interest created among our members of the Legislature, in short an ernest endeavor, and this thing would be accomplished.

Mr. Dempsey.—Speaking of hardy bulbs, many tender bulbs can be made hardy and give perfect satisfaction. One of these is the Lilium Harrisii. They are planted at this season, in beds or where there is a warm cellar, place them in a pot and let them remain over winter, and in the spring plant them out in the open ground. Each bulb will probably show from two to five or six blooms seven to nine inches long, beautiful and of most fragrant perfume.

Mr. Morton.—For a crowded border, or where there is a small area, our native lily is much preferable to those imported. There is one that will grow in the shade, and is an admirable bulb to plant among others. It grows to a good height; I have seen them growing in Mr. Goldie's place eight or nine feet high. It therefore rises above the ordinary rosebush, and blooms apparently with no inconvenience to itself. That faculty is not possessed by any of our imported lilies.

Mr. RACE.—I have given attention to some of these plants, but I make a specialty of the rose, a flower that I love. There is no part of one's estate more profitably used than that devoted to the cultivation of flowers. There is nothing in connection with the house that will exert a better influence upon your children or tend more strongly to the cultivation of the best qualities than to engage in the work of the flower garden. I spend as much time in my garden as in my office. I have, I think, between fifty and sixty varieties of the rose. It is one of the most difficult plants to grow, particularly in my section, where the climate is rigorous. Unfortunately, we have had no snow for the past two or three years, and snow is the best protection.

Mr. SUMMEY.—Has anybody flowered the rose, Her Majesty?

Mr. WEBSTER.—I have grown that rose. I think it never pleased anybody but one man, and that was Mr. W. F. Bennett, who got $2,000 for it. The principal faults are that it makes such enormous growth (in strong ground it will attain a length of fifteen feet), and it is very subject to mildew.

Mr. SUMMEY.—I have had the good fortune to flower Her Majesty, and have found it a grand rose. I don't want you to understand that one succeeds with it every year. I have grown it for five years, and it has only bloomed two years. The first year there were two roses that were over five inches in diameter, and from the time the color showed until the roses were fully grown I think it was over a month. It is the firmest rose and the doublest rose I know. And the flower is a beautiful pink. There are some roses that are sure to grow and some with which success is uncertain, and I would put Her Majesty at the head of the latter class.

RESOLUTIONS.

Moved by Mr. Race, seconded by Mr. A. M. Smith, "That the thanks of this Association be tendered to the City Council of Hamilton for their kindness in allowing the Association the use of the City Council Chamber for this meeting." Carried.

Moved by Mr. A. McD. Allan, seconded by Mr. W. S. Turner, "That the thanks of the Association be tendered to the Press generally, including the American Press, for the extended and accurate reports of the present meeting." Carried.

SPECIAL REPORTS ON THE PROGRESS OF FRUIT GROWING IN VARIOUS PARTS OF ONTARIO.

Mr. E. B. EDWARDS, Secretary of the Peterborough Fruit Growers' Association (affiliated), presented the following report on

FRUIT GROWING AT PETERBOROUGH.

The district surrounding the town of Peterborough is admirably adapted to the growing of the hardier varieties of fruits. The distance from Lake Ontario—say thirty miles—together with the elevation of several hundred feet above it, gives us a climate differing considerably from that of the lakeshore townships, and differing more largely still from that of the south-western part of Ontario. The winter is, as a rule, colder and steadier than at the front, and the snow remains on the ground throughout the winter. The midsummer is perhaps warmer than along the lakeshore, but the autumn months are, as a rule, cooler. As a result, some of the best varieties of apples are here raised in their greatest perfection. In fineness of flavor, in beauty of coloring and in keeping qualities they surpass those grown in a warmer climate. At the same time, we are not so far north as to experience any special difficulty from winter killing. Some of the varieties reported by Professor Craig as too tender for Ottawa succeeded here well enough. The Northern Spy, Blenheim, Orange, Fameuse, King, Hubbardson's, Nonsuch, Duchess, Red Canada, Colvert

and others, answer very well. We can grow successfully enough good varieties to enable us to dispense with inferior apples. I fail to see, for instance, why it is necessary for this Association to recommend an apple like the Ben Davis, whose chief merit is that it is a good keeping apple, and that it may be sold to those who have not yet found it out.

The soil in this neighborhood is generally well adapted to the growth of apples, whilst the rolling character of the country makes drainage an easy matter.

Some sections, such as the township of South Monaghan, are admirably suited to the growth of plums, and large quantities are grown in that township with very little care or trouble. Black-knot is a great source of trouble.

Pears, in general, succeeded well until the blight of the last few years destroyed many of the trees. I have two or three kinds which are not affected by blight and grow freely.

Cherries, as a rule, do not succeed well, and are apt to be winter-killed.

Peaches are quite beyond our reach, except as a sort of curiosity. This last season Mr. Nesbitt had some very fine peaches ripen in his garden, from seedling trees which had grown up without any protection.

A few varieties of grapes, such as Brighton, Lindley, Massasoit, Delaware, Wilder, Niagara, Worden, etc., may be depended on to ripen and to succeed fairly well. They are not generally grown to any considerable extent.

Raspberries and strawberries succeed fairly well, and the quality of the small fruits, like that of the large fruits, is usually remarkably good.

In this section there are a good many farm orchards ranging from an acre to five acres. But owing to the want of systematic information as to the varieties most suitable to the locality and climate, and, in some instances, to the impositions of tree agents, many poor varieties and varieties unsuited to the climate, have been planted

The result has been that even where proper care has been taken of the orchards, many of the trees, and in some cases whole orchards, have failed, and the owners have become discouraged. Added to this there has been in many cases complete ignorance of the first principles of tree culture, and, worse than all, the indifference of the farmer, whose time from early spring to late fall is fully taken up with the round of plowing and sowing and harvesting and plowing again. And out of all this has grown up the idea that this district is unsuited for successful fruit growing.

Mr. Geo. E. Fisher, President of the Burlington Fruit Growers' Association (affiliated), presented the following report on

Fruit Cultivation about Burlington.

In compliance with the request of the Secretary of the Ontario Fruit Growers' Association, I submit the following brief report regarding horticultural interests in the Burlington district, and the output from that district during the season of 1891.

All kinds of fruit trees, vines, and plants have made a vigorous growth, the foliage being unusually dark colored and well developed.

Of apples, most varieties grown in Canada are found here. For commercial purposes we consider the Baldwin, Greening, Ribston Pippin, Cranberry Pippin, Duchess of Oldenburgh, and Red Astrachan most profitable and that in the order named. The crop was much in excess of what was anticipated early in the season, because of the fruit being larger than usual. In some orchards it was exceedingly well grown and colored and very fine indeed. Of late years the bark louse is losing ground, many trees, which a few years since were badly infested, being now comparatively free. Paris green, though not universally, is pretty generally used on all kinds of fruit trees.

Pear trees blighted to a less extent than during some former years. We find Bartlett, Duchess Dwarf, Anjou, Louise Bonne, White Doyenne and Lawrence most profitable. Sheldon, Doyenne Bussock, and Keiffer not yet proven. The largeness of the crop was

a surprise, and as was the case with apples due much to the unusual size of the fruit. I have particularly in mind the fruit from a block of Duchess growing in the orchard of Mr. J. S. Freeman. I have several hundreds of trees of this variety which I consider have borne several large crops of extra fine fruit, but never have I handled or seen such prodigies in size as were these fifty barrels of Mr. Freeman, many of which were well colored. A selection from them was exhibited at Toronto, Ottawa, London and other places and was successful wherever it went. For many years we have not suffered as we did this, from heavy winds, which destroyed a considerable portion of the crop, besides seriously injuring the trees.

Plums have been lately, and are still, being very extensively planted. They show little black-knot. The crop this year was very large. Lombard, Yellow Egg, Imperial Gage and Bradshaw are favorites. We have a variety we call Ireland's Seedling, which bids fair to take a prominent place.

There are no large peach orchards here. Alexander and Early Crawford are mostly grown. Of late years peach trees have been more profitable ; the crop this year being large in proportion to the trees. I know of no yellows.

Cherries are being put out but as yet no large plantations are fruiting ; E. Richmond and Montmorency are preferred.

Quinces and apricots are not much grown; experiments are being made with the latter.

Grapes are not extensively grown, but more attention is being paid to them of late. Sulphur is used to destroy mildew, of which we have had but little. Concord, Worden, Delaware, Moore's Early, Niagara, and Rogers' No. 4 succeed best.

Currants are extensively grown and being planted very largely. Crop was very large of both red and black. Of black, the Lee's Prolific and Black Naples are favorites. The Champion promises well. Of red, the Cherry receives the most attention at present and, by many, is thought good enough. Fay's Prolific is also being largely planted and bids fair to become a leading currant.

Gooseberries, like currants, are taking a large share of our people's attention just now, having been already, and are being heavily planted. The crop was excellent both in quality and quantity. Smith's Improved and Downing are grown. We have no mildew.

Blackberries are grown to a considerable extent. Crop was large, mostly Snyder. Lawton and Kittatinny require some winter protection for best results.

Raspberries are grown largely. The Cuthbert is preferred. Hansel, Brandywine. Highland Hardy and Marlborough are leading sorts. The crop was fair, but season too dry for best results.

The strawberry is one of our main crops. All the leading varieties, both new and old are grown. The vines ran well and are in a healthy state. We had a good fair crop. Had the weather not been so dry the crop would have been very large.

The district comprises about six miles of water front and the country back of it ; but this report refers more particularly to that lying within three miles of the lake, a very small percentage of the fruit shipped from here coming from beyond that limit.

I have taken considerable pains to procure correct figures for the quantity of fruit shipped from this district, and, from the best information I could get, find it to have been about ten thousand barrels of pears and apples, and eight hundred tons of fruit in baskets.

Mr. J. P. Cockburn, Gravenhurst, presented the following report on the

Progress and Possibilities of Fruit Growing in Muskoka.

That portion of Ontario lying north of the river Severn, comprising the district of Muskoka and Parry Sound, extending nearly 100 miles northward, is generally broken and intersected by rugged ranges of granite rock, which underlies the whole surface and is watered by many beautiful lakes and streams, on whose sloping sides and rich valleys

vegetation is rapid and luxuriant. The soil is generally light and warm, responding quickly to good tillage, storing the warm sun by day, and absorbing the heavy dews by night. The rock also absorbs heat in summer which has much influence in keeping off early frosts and tempering the cold and drying winds of spring. The numerous lakes also serve to make the air moist and the climate more equable. In winter the snow falls to a great depth remaining till spring, as soon as the snow disappears vegetation commences, and is very rapid, as the snow usually extracts all the frost from the ground before it disappears. These lands have been mostly located as free grant lots, and generally by men who have worked at lumbering, the majority of whom have no taste or knowledge of horticulture. On the contrary they seem to have a most inveterate desire to annihilate anything like a tree. In waging war against the giants of the forest they seem to have overlooked how easy it was to spare many beautiful trees and shrubs (which will take a lifetime to replace), because Muskoka is the home of very many handsome trees and shrubs.

No resident of Muskoka need send to the nursery for trees wherewith to decorate his lawn or garden, while such shrubs as the Dogwood, Juneberries, Arrow-wood Black Alder, High Bush Cranberries, Striped Maple, Mountain Maple, Witch Hazel and a dozen other sorts may be had for the digging ; but where there is no taste there is no knowledge. It is the few who have had a desire for these things and more especially the wives of the settlers who have persistently tried to grow the fruits they formerly enjoyed in their "Old homes at the front," that we owe much of our success at the present time, and it is much to their credit that they have shown us the possibilities of Muskoka as a fruit-growing district. Still the great majority are "regarding the winds," although many have planted a few trees in the most careless manner and without any enclosure other than the rude structure which encircles the barn and house in the same field, the trees grow well the first season, but after the cows have browsed and scratched themselves against the stumps the first winter, because the trees fail to grow the poor settler utters vengeance against that (best of missionaries), the tree agent for selling trees that do not bloom the following season. These are troubles and prejudices it takes time to overcome in a new country: but now the most dubious are convinced that apples of the best quality can be grown in Muskoka of such varieties as Duchess of Oldenburg, Yellow Transparent, Wealthy, Haas, Tetofsky, Walbridge, Alexander and many of the standard winter sorts, together with several hardy seedlings of great merit. Our long warm days and cold dewy nights develop all the beauty of form and coloring possible, and there is room for the product of many orchards in the district to supply the local demand at good prices, and no man need be afraid of the venture who will make a judicious selection of varieties.

The much abused Champion grape grows to great perfection here. Our soil seems to almost change the variety, the skin gets thin, the pulp juicy, sweet and sprightly.

All the early Rogers, Concord, Jessica, and Brighton, ripen well in the open air.

Currants and gooseberries grow here to great perfection, and on our warm soil mildew is unknown except in some damp and shady nooks.

Strawberries need little or no protection in winter as the snow makes a more effective protection than any other. For home use I find the Manchester, Bubach and Jessie are all that is desired.

Raspberries, blueberries and blackberries of the best quality grow wild and can be had for the picking.

APPENDIX I.

REPORTS OF AFFILIATED SOCIETIES FOR 1891.

Burlington Horticultural Association.

This society was organised in the spring of 1889. Since its inception it has made solid growth, its membership has steadily increased, its usefulness has given it a strong hold on the public favor, and its success has more than fulfilled the anticipations of its promoters.

The necessity of some such organisation had long been felt, from the fact that the fruit and vegetable industry of the Burlington district had assumed very large proportions. For successful and profitable fruit growing this part of Ontario appears to be especially adapted. Lying between the large consuming centres of Hamilton and Toronto, with easy access to the other large markets of Canada and the United States, with rich, fertile soils, varying from sandy and gravelly loam to that of a mellow clay, suitable for the prime development of plants, vines, bushes and trees, situated in the region between the mountain air and the lake, without those extremes of cold so common in many other less favored localities, comparative freedom from late spring frosts and those of the early fall, with unequalled facilities for shipping in any direction desired by the Grand Trunk, and Northern and North-western Railways, with an alternative boat route in the summer and fall for Montreal and other eastern points—these, and many other advantages pointed to the necessity of a representative Horticultural Association to simplify methods, to encourage experiment, to disseminate information, and to economise resources both in reference to production and to the marketing of products.

The following are the officers of the Association for the year 1891 :—

President.....Geo. E. Fisher, Freeman, Ont.
Vice-President.....Smith Freeman, " "
Secretary-Treasurer.....A. W. Peart, " "

Directors.

Department of Apples.....Edwin Peart.
" *Grapes*.....Dr. Zimmerman.
" *Small Fruits*.....Joseph Lindley.
" *Pears and Plums*.....P McCulloch.
" *Vegetables*.....J. W. Bridgeman.
" *Shipping*.....W. V. Hopkins and Harry Williams.
Executive Committee.....D. Henderson, Dr. Husband and Alex. Riach.
Entertainment Committee..The President, Vice-President and Sec-Treas.
Auditors.....Charles Dyrus and George N. Peer.

Peterborough Fruit Growers' Association.

Officers for 1891:—President, George Hilliard, Peterborough; Secretary-Treasurer, E. B. Edwards, Peterborough; Executive Committee, President, Secretary and the following: G. M. Roger, B. R. Matthews, F. Stinson, George E. Elliot, James McKibbon, Wm. Collins and John Best, all of Peterborough.

This Association was organised in 1890. The basis of organisation is that payment of one dollar constitutes a person a member of this and also of the Fruit Growers' Association of Ontario, to which 80c. of the subscription money from each is forwarded.

Peterboro' Fruit Growers' Association. Its objects and aims.

(Read at the opening meeting of the Association by the Secretary, Mr. E. B. Edwards.)

There are several hundred fruit growers in this county. We want to bring them together, make them acquainted with each other and useful to one another. We want to increase the number engaged in fruit growing, to increase the number of trees planted, to increase the interest taken in the orchard when it is planted. We have in the country surrounding Peterboro', both in soil and in climate, a district that is not surpassed in the world for raising the finest kinds of fruit, especially winter apples. Yet instead of the whole country being given up to fruit growing as might be expected, there is not an orchard in the county worthy of the name, when compared with the great orchards of New York State, or with some of the large orchards in other parts of Canada, and the small orchards are, in general, not what they ought to be. From lack of information, lack of interest, from the failures caused by the impositions of unscrupulous tree peddlers, the orchards in this county are for the most part small, of badly selected varieties, ill cared for, and the fruit, when ripe, is generally handled so as to realize nothing like its full value. Our object is to improve all this.

1. Each of us has been groping along for himself, experimenting on his own account and not infrequently to his loss. Each order given for trees is an experiment, first as to the nursery to buy from, second as to the kind of trees. The tree peddler often makes a happy combination of both, to the cost of the farmer One great object of our Association is by comparing notes to gain a knowledge of the kinds of trees suitable for this climate, and the kinds suitable for market, and also the kinds to be avoided. We have been planting too many varieties and too many poor varieties.

2. Next we want to know something of the soils to plant in, the best position on the farm to choose, planting or taking advantage of existing windbreaks, the preparation of the soil, drainage and the subsequent cultivation of the land. It is folly to put trees in an unsuitable soil, or in a piece of land that has not been properly prepared beforehand.

3. After the orchard is planted most of us have a great deal to learn about looking after the trees, pruning, destroying insects, and keeping up the heart of the land. Very few orchards in this county are properly attended to in any one of these respects.

4. In picking, sorting, handling and packing fruit most of us are at the beginning of our lesson. Greater care is necessary, whether it be simply to keep our fruit for ourselves, or to ship to an outside market. It is safe to say that the value of the crop in the county might be increased one half by attention to these matters.

5. The marketing of the fruit crop, especially in apples, is one of the most important objects of our organisation, and will become more and more important as the crop increases in this neighborhood. Already we produce much more than enough to supply the local market. If fruit growing is to be a paying business in the future we must seek an outside market for our surplus, and must take the best means of reaching that market. Without attempting to decide I suggest for consideration the different methods by which this may be accomplished:

1. Through local buyers who buy in the orchard and take the risk of loss or the chance of profit. This mode of sale has the advantage that the producer has no care or

trouble and gets "cash down." It has its advantages: There is an extra middleman and when he assumes the risk he generally makes sure of sufficient margin between his buying and selling price. With the English market running up to $7, $8 and $9 a barrel he had this year a fine margin when contrasted with the prices at which he bought—$1.75, $2 and $2.50 a barrel. If this be found to be the best mode of selling we can, through union amongst ourselves accomplish some good results:

(1) We can have returns sent in by our members and an estimate made of the crop in this district.

(2) We can post our members as to prices, and thus secure in a good year like this, some share in the extra prices going.

(3) We can by being able to show a crop report make it worth while for buyers to visit us.

(4) It may be possible through our Association to arrange something akin to the cheese board where buyers and sellers may be brought together and sales be made according to the list of varieties and quantities offering.

2. Through Canadian Companies acting as commission merchants, who have sale rooms in London and various agencies throughout the United Kingdom. Home companies such as this may naturally be expected to look after the interests of the Canadian producer.

3. Through direct shipment. Here again union will be found to be strength. If we could only depend on securing thorough selection, packing and inspection of our fruit, it would not be too much to expect to see the "Peterboro' brand" quoted at the top of the English market. How this happy end is to be attained it will be for the Association to work out. One way suggested is to have an inspector employed, another to employ packers to go around to the different farms and pack the apples according to a common standard. Another idea is to have a large cold storage building in town to which members who choose to do so could bring in their apples as picked and have them carefully graded and packed, storing them until shipments could most advantageously be made. In any case a number of people joining together could secure more favorable freight rates and could unite in securing a good commission merchant in England to act for them.

6. Disposal of inferior qualities. The establishment of an evaporator and perhaps also of a canning factory is necessary, if we are to make the most of our apples. The utilising of the poorer fruit through the evaporator will not only be an advantage in itself but will also tend to encourage the careful selection of the best grades.

As to terms of membership. Our modest fee of $1 constitutes one a member of our local Association, and at the same time a member of the Fruit Growers' Association of Ontario, with all the advantages that Society offers. It also secures the receipt each month of that bright and useful publication, *The Horticulturist.* In addition, the Annual Report of the parent society, and the distribution of choice trees and plants complete a pretty full list of good things. We do not contemplate incorporation under the Agricultural and Arts Act because we do not wish to conflict with the Horticultural Society already established, or to place an additional burden upon the Agricultural Society. But we may be able to co-operate to advantage with one or both of those societies in the holding of their fall shows.

Let me urge all the fruit growers of this district to join our Association. To those who feel that they have something yet to learn there is here offered an opportunity for improvement. Those who have got beyond that stage and who know all about the business will be eagerly welcomed as instructors of their more ignorant brethren and will be paid a handsome salary. We do not promise to make you all rich but we do promise to assist and benefit everyone who takes advantage of the opportunities our Association offers.

APPENDIX II.

CATALOGUE OF FRUITS.—APPLES.

FOR USE OF JUDGES AT EXHIBITIONS.

EXPLANATORY NOTE.—In the plan of rating, all varieties are supposed to be perfect specimens; then the best varieties under each of three or four heads are rated at ten, and all the more or less inferior varieties by some figure less than ten. It frequently happens, however, even with the best varieties, that imperfect samples are exhibited. In such cases all values given in the Catalogue must be reduced one or more points each, for (1) lack of color, (2) undersize, (3) uneveness of size on plate, (4) wormy, scabby or ill-shapen specimens, (5) lack of stem or calyx, (6) polished fruits, *i.e.*, having bloom wiped off, or for any other thing which tends to change the natural appearance of the fruit.

The column "Total Value" is for use when prizes are offered for fruits without designating the purpose for which such fruits may be required.

Name.	Season.	Quality.		Commercial value.		Total Value.
		Dessert.	Cooking.	Home market.	Foreign market.	
Alexander	A	0	9	9	10	28
American Golden Russet	W	9	8	8	9	34
American Summer Pearmain	S	3	1	2	0	6
Arnold's Beauty	W	5	2	2	3	12
American Pippin	W	5	8	3	5	21
Adam's Pearmain	W	8	8	7	7	30
Autumn Strawberry	A	5	1	2	5	13
Bailey Sweet	W	2	8	1	3	14
Baldwin	W	2	5	7	8	22
Beauty of Kent	A	0	8	8	7	23
Ben Davis	W	0	1	8	9	19
Benoni	S	10	0	1	0	11
Belmont	W	3	6	4	6	19
Blenheim Pippin	W	6	7	9	10	32
Blue Pearmain	W	6	6	8	8	28
Bottle Greening	W	6	7	2	4	19
Bourassa	W	5	4	3	6	18
Cabashea	W	2	7	8	9	26
Canada Baldwin	W	6	8	8	9	31
Canada Reinette	W	4	8	5	7	24
Cayuga Red Streak	A	2	8	7	8	25
Chenango Strawberry	A	8	3	7	0	18
Colvert	A	1	9	7	8	25
Cornish Gilliflower	W	1	0	1	2	4
Cox's Orange Pippin	A	9	3	7	10	29
Cranberry Pippin	W	7	8	8	8	31
Cellini	W	2	8	7	6	23
Domine	W	5	7	6	7	25
Drap d'Or	A	2	6	3	5	16
Detroit Black	A	0	4	2	4	10
Duchess of Oldenburgh	S	2	10	10	10	32
Dyer	A	7	5	3		
Early Harvest	S	9	3	9	0	21
Early Joe	S	8	3	3	0	14
Early Strawberry	S	8	2	7	0	17
Edgar's Red Streak	W	5	7	7	8	27
Ella	W	2	4	3	5	14
Esopus Spitzenburg	W	9	7	9	10	35
Fallawater	W	7	8	8	9	32
Fall Jenetting	A	3	7	7	7	24
Fall Orange	A	4	7	6	3	20
Fall Pippin	A	6	8	7	7	28
Flushing Spitzenburgh	W	6	6	6	7	25
Fameuse	A	9	5	9	8	31

NOTE.—In the first column the letter S denotes summer, A autumn and W winter.

CATALOGUE OF FRUITS.—APPLES.—*Continued.*

Name.	Season.	Quality.		Commercial value		Total Value.
		Dessert.	Cooking.	Home market.	Foreign market.	
Fall Queen (*See* Haas)						
Gloria Mundi	W	0	8	6	8	22
Golden Russet (English)	W	8	7	8	9	32
Golden Sweet	A	2	4	1	0	7
Grand Sultan	A	2	7	7		
Gravenstein	A	9	9	10	10	38
Green Newtown Pippin	W	9	4	6	8	27
Grimes' Golden	W	9	2	6	7	24
Haas (*See* Fall Queen)	A	5	7	7	6	25
Hawley	S	6	5	5	0	16
Hawthornden	A	2	8	7	7	24
Holland Pippin	A	6	8	7	7	28
Hubbardston Nonsuch	W	7	8	8	8	31
Hurlbut	W	5	5	4	6	20
Irish Peach	S					
Jeffries	A	7	6	6	7	26
Jersey Sweeting	A	1	3	1	0	5
Jonathan	W	9	7	7	8	31
Kentish Fillbasket	A	0	8	8	8	24
Keswick Codlin	A	1	9	6	7	23
King of Tompkins County	W	8	10	10	10	38
Lady	W	9	0	1	9	19
Late Strawberry	A	7	5	5	7	24
Lawver	W	5	7	4	5	21
Lord Suffield	A	3	8	6	7	24
Lord Duncan	A	2	9	7	6	24
London Pippin	W		8			
Lowell	A	5	7	4		
Lord Burleigh	A	2	9	5	0	16
La Rue	W	1	9	10	5	25
Maiden's Blush	A	3	7	7	8	25
Mann	W	4	7	6	8	25
Magog Red Streak	W	3	7	5	7	22
McIntosh Red	W	6	7	7	8	28
Melon	W	8	8	7	8	31
Minister	A	4	6	6	5	21
Monmouth Pippin	W	6	8	6	7	27
Mother	A	8	7	6	6	27
Munson Sweet	A	1	3	2	0	6
Newtown Spitzenburg	A	7	8	6	7	28
Northern Spy	W	8	10	10	10	38
Newton Pippin	W	9	9	7	10	35
Ontario	W	9	10	10	10	39
Peck's Pleasant	W	7	7	6	8	28
Pennock	W	5	7	7	8	27
Pewaukee	W	4	8	8	8	28
Peach	A					
Phœnix	W	4	7	7	8	26
Pomme Grise	W	9		5	7	21
Pomme Grise d'Or	W	10		6	8	24
Porter	A	5	4	5	3	17
Priestly	W	4	5	6	7	22
Primate	S	7	6	6	0	19
Prenzea	A	9	9	5	5	28
Princess Louise	W	10	7	8	8	33
Pumpkin Sweet	A	0	4	1	0	5
Pumpkin Russet	A	1	6	4	5	16
Pomme Royale (*See* Dyer)						
Rambo	A	5	1	2	5	13
Rawles Janet	W	4	5	3	5	17
Red Astrachan	S	5	7	8	0	20
Red Belle-fleur	A	2	4	2	0	8
Red Canada	W	6	6	7	8	27
Red Cathead	A	6	8	7	7	28
Red Russet	W	5	6	7	7	25
Red Bietigheimer	A					

CATALOGUE OF FRUITS.—APPLES.—*Continued.*

Name.	Season.	Quality.		Commercial value.		Total Value.
		Dessert.	Cooking.	Home market.	Foreign market.	
Rhode Island Greening	W	8	10	8	8	34
Ribston Pippin	W	10	8	8	10	36
Roxbury Russet	W	6	8	8	9	31
Scarlet Pearmain	A	5	6	5	6	22
Shiawassee Beauty	A	7	6	6	0	19
Smith's Cider	W	1	4	0	1	6
Smokehouse	A	3	6	4	6	19
Sops of Wine	S	2	5	2	0	9
St. Lawrence	A	7	8	8	8	31
Stump	A	5	6	5	0	16
Summer Rose	S	6	6	4	0	16
Swaar	W	7	2	1	4	14
Swazie Pomme Grise (*See* Pomme Grise d'Or)						
Stark	W	2	2	7	8	19
Snow (*See* Fameuse)						
Talman Sweet		2	7	5	6	20
Tetofsky	W	1	5	1	0	7
Trenton	S	10	5	9	9	33
Twenty Ounce (*See* Cayuga Red Streak	A					
Vadevere	A	6	5	4	6	21
Wagener	W	8	7	6	7	28
Wallbridge (*See* Edgar's Red Streak)						
Wealthy	W	8	6	9	9	32
Westfield Seek-no-Further	W	7	7	7	8	29
White Astracan	S	1	2	1	0	4
William's Favorite	W	5	7	5	6	23
Wine Sap	W	7	0	1	3	11
Wine	W	7	7	8	8	30
Yellow Belle-fleur	W	8	7	5	5	25
Yellow Transparent	S	6	7	6	0	19

GRAPES.

Varieties.	Color.	Season.	Quality for table.	Shipping value.	Market value.	Total.
Agawam (Rog. 15)	R	L	9	10	9	28
Allen's Hybrid	W	M	5	2	4	11
Amber Queen	R	M	5	4	4	13
Amber	R	L	1	3	2	6
Aminia (Rog. 39)	B	M	8	10	6	24
Ann Arbor	W	E	3	2	3	8
August Giant	B	M	1	1	3	5
Barry (Rog. 43)	B	M	5	8	6	19
Brighton	R	E	9	6	9	24
Black Eagle	B	L	1	3	2	6
Black Pearl	B	L	1	3	2	6
Burnett	B	M	5	5	4	14
Canada	B	M	2	3	1	6
Catawba	R	L	9	8	10	27
Champion	B	E	2	5	5	12
Clinton	B	L	0	5	2	7
Concord	B	M	7	6	8	21
Cottage	B	E	5	5	4	14
Creveling	B	E	6	6	3	15
Croton	W	E	4	3	3	10
Cynthiana	B	L	1	2	1	4
Delaware	R	E	10	7	10	27
Diana	R	L	6	8	7	21
Duchess	W	L	6	6	4	16
Dracut Amber	R	E	1	6	5	12
Eaton	B	M	5	5	3	13
Early Dawn	B	M	6	4	4	14

R, red, W, white, B, black, L, late, E, early, and M, medium.

CATALOGUE OF FRUITS.—GRAPES.—*Continued.*

Varieties.	Color.	Season.	Quality for table.	Shipping value.	Market value.	Total.
Elvira	W	L	1	2	1	4
Empire State	W	L	3	4	4	11
Eumelan	B	E	6	5	4	15
Eldorado	W	M	3	3	2	8
Etta	W	L	2	4	3	9
Early Victor	B	E	4	3	3	10
Essex (Rog. 41)	B	L	3	7	6	16
Faith	W	E	2	2	3	7
Florence	B	E	2	2	3	7
Goethe (Rog. 1)	R	L	8	5	5	18
Gaertner Rog. 14)	R	M	8	6	6	20
Hartford	B	E	3	5	6	14
Herbert (Rog. 44)	B	M	6	8	7	21
Highland	B	L	3	4	2	9
Hayes	W	M	2	2	3	7
Herbemont	B	L	1	2	3	6
Iona	R	L	7	7	7	21
Isabella	B	L	3	7	6	16
Ives	B	E	2	5	5	12
Israella	B	L	2	4	4	10
Janesville	B	E	2	3	3	8
Jessica	W	E	5	5	6	16
Jefferson	R	L	6	4	5	15
Jewell	B	M	2	1	2	5
Lady	W	E	7	3	5	15
Lady Washington	W	L	3	5	5	13
Lindley (Rog. 9)	R	E	10	9	10	29
Massasoit (Rog. 3)	R	E	7	5	6	18
Martha	W	M	6	5	5	16
Merrimac (Rog. 19)	B	L	7	9	6	22
Moore's Early	B	E	8	6	9	23
Moyer	R	E	7	7	9	23
Mills	B	M	6	7	8	21
Moore's Diamond	W	E	7	7	8	22
Marion	B	L	1	4	2	7
Niagara	W	M	9	5	9	23
Noah	W	L	1	5	3	9
Norton	B	L	1	5	2	8
Northern Muscadine	R	M	2	6	6	14
Oneida	R	M	3	2	4	9
Ontario	B	M	2	4	4	10
Othello (Arnold's No. 1.)	B	L	2	3	2	7
Perkins	R	E	2	6	6	14
Pocklington	W	M	7	6	7	20
Prentiss	W	L	5	6	6	17
Poughkeepsie Red	W	E	6	6	7	19
Pearl	R	L	1	2	1	4
Rebecca	W	M	8	6	6	20
Requa (Rog. 28)	R	M	8	8	8	14
Reutz	B	M	1	2	2	5
Rockingham	B	M	7	6	8	21
Roger No. 17	B	M	6	6	5	17
Roger No. 32	R	L	3	5	6	14
Roger No. 33	B	M	5	7	6	18
Roger No. 11	B	M	7	8	7	22
Salem (Rog. 53)	R	M	8	8	8	24
Sanasqua	B	L	5	5	5	15
Secretary	B	M	3	4	3	10
Telegraph	B	M	3	5	3	11
Transparent	W	L	1	4	1	6
Triumph	W	L	1	5	1	7
Taylor	W	L	1	4	2	7
Ulster Prolific	R	M	4	5	5	14
Union Village (*See* Ontario)						
Vergennes	R	L	7	9	7	23
Victor (*See* Early Victor)						
Walter	R	M	6	7	7	20
Worden	B	E	9	4	8	21
White Ann Arbor	W	E	4	4	4	12
Wilder (Rog. 4)	B	M	8	9	8	25
Wyoming Red	R	E	6	6	7	19
Woodruff Red	R	M	4	6	5	15

CATALOGUE OF FRUITS.—PEARS.

Varieties.	Dessert.	Cooking.	Home market.	Foreign market.	Total.	Remarks.
Summer.						
Ananas d'ete	5	.....	7	.....	12	
Bartlett	8	8	10	.....	26	
Beurre Giffard	7	.....	8	.....	15	
Brandywine	8	.....	9	.....	17	
Clapp's Favorite	7	.....	7	.....	14	Must be picked hard.
Dearborn	6	.....	.....	.....	6	
Doyenne d'ete	8	.....	6	.....	14	
Kirkland	6	.....	.....	.....	6	
Manning's Elizabeth	7	.....	.....	.....	7	
Osband's Summer	8	.....	.....	.....	8	
Petite Marguerite	8	.....	.....	.....	8	
Souvenir du Congress	2	2	7	.....	11	
Tyson	9	.....	.....	.....	9	
Autumn.						
Belle Lucrative	8	.....	.....	.....	8	
Beurré Bosc	9	.....	.....	.....	9	Not in market.
Beurré Hardy	8	8	10	.....	26	
Beurré Superfine	7	8	6	.....	21	
Brockworth Park (Oct.)	7	.....	8	.....	15	
Buffum	4	.....	4	.....	8	
Duchesse d' Angoulême	6	7	8	.....	21	
Doyenne Boussock	6	7	7	.....	20	
Doyenne Gray	8	8	6	.....	22	
Doyenne White	8	8	7	.....	23	
Flemish Beauty	8	8	9	.....	25	
Howell	7	8	7	.....	22	
Kieffer	.....	6	5	.....	11	Succeeds best in southern Ontario.
Louise Bonne	5	5	5	.....	15	
Seckel	10	10	.....	.....	20	
Sheldon	10	7	7	.....	24	Not suited for north latitudes.
Swan's Orange	.....	9	6	.....	15	
Triomphe de Vienne (Oct.)	8	.....	.....	.....	8	
Winter.						
Anjou	10	9	9	.....	28	
Beurré Grise d'Hiver	4	.....	5	.....	9	
Clairgeau	2	6	4	.....	12	
Dempsey	.....	.....	.....	.....	.....	
Diel	4	5	.....	.....	9	
Glout Morceau	8	.....	8	.....	16	
Goodale	8	.....	10	.....	18	
Josephine de Malines	8	.....	.....	.....	8	
Lawrence	7	.....	8	.....	15	
Mount Vernon	6	.....	5	.....	11	
Vicar	2	5	3	.....	10	
Winter Nelis	8	.....	.....	.....	8	

DISTRICT FRUIT LIST.--APPLES.

AS AMENDED AT WINTER MEETING 189?.

Showing the varieties considered most desirable for planting in the various Agricultural Districts in Ontario.

DISTRICT No. 1.—Stormont, Dundas, Glengarry, Prescott and Cornwall.—W. S. TURNER, Cornwall, Director.
Summer.—Yellow Transparent, Duchess of Oldenburgh.
Autumn.—Alexander, Famuese, Gideon, St. Lawrence.
Winter.—LaRue, Pewaukee, Golden Russet, Ben Davis, Talman Sweet.

DISTRICT No. 2.—Lanark, Renfrew, City of Ottawa, Carleton and Russell.—JOHN CRAIG, Experimental Farm, Ottawa, Director.
Summer.—Yellow Transparent, Duchess of Oldenburgh.
Autumn.—Alexander, Montreal Peach, Wealthy and Haas.
Winter.—Pewaukee, Golden Russet, Scott's Winter, Talman Sweet and Edgar's Red Streak.

DISTRICT No. 3.--Frontenac, City of Kingston, Leeds, Grenville and Brockville.—DAVID NICOL, Cataraqui, Director.
Summer.—Yellow Transparent, Duchess of Oldenburgh and Red Astrachan.
Autumn.—Alexander, Wealthy and St. Lawrence.
Winter.—Golden Russet, Pewaukee, LaRue, Ben Davis and Red Canada.

DISTRICT No. 4.—Hastings, Prince Edward, Lennox and Addington.—P. C. DEMPSEY, Trenton, Director.
Summer.—Yellow Transparent and Duchess of Oldenburgh.
Autumn.—Alexander, Trenton, Gravenstein and Wealthy.
Winter.—Ontario, Hubbardson's Nonsuch, Pewaukee, Ben Davis and Cranberry Pippin.

DISTRICT No. 5.—Durham, Northumberland, Peterboro', Victoria and Haliburton.—THOS. BEALL, Lindsay, Director.
Summer.—Yellow Transparent and Duchess of Oldenburgh.
Autumn.—Alexander, Colvert, St. Lawrence and Gravenstein.
Winter.—Ontario, Hubbardson's Nonsuch, Pewaukee, Ben Davis and Blenheim Pippin.

DISTRICT No. 6.—York, Ontario, Peel, Cardwell and City of Toronto.—W. E. WELLINGTON, Toronto, Director.
Summer.—Yellow Transparent and Duchess of Oldenburgh.
Autumn.—Alexander, Gravenstein, Red Beitigheimer and Wealthy.
Winter.—Golden Russet, Pewaukee, Ontario, Ben Davis and Hubbardson's Nonsuch.

DISTRICT No. 7.—Wellington, Waterloo, Wentworth, Halton, Dufferin, and City of Hamilton.—M. PETTIT, Winona, Director.
Summer.—Yellow Transparent, Red Astrachan and Duchess of Oldenburgh.
Autumn.—Gravenstein, Colvert and Wealthy.
Winter.—Golden Russet, Ontario, Blenheim Pippin, Baldwin and Cranberry Pippin.

DISTRICT No. 8.—Lincoln, Welland, Haldimand and Monck.—A. M. SMITH, St. Catharines, Director.
Summer.—Duchess of Oldenburgh and Red Astrachan.
Autumn.—Gravenstein, Ribston Pippin and Wealthy.
Winter.—Blenheim Pippin, Ontario, Princess Louise, Golden Russet and Cranberry Pippin.

DISTRICT No. 9.—Elgin, Essex, Oxford and Norfolk.—J. K. MCMICHAEL, Waterford, Director.
Summer.—Duchess of Oldenburgh and Red Astrachan.
Autumn.—Gravenstein, Twenty Ounce and Fall Pippin.
Winter.—Blenheim Pippin, Ontario, Baldwin, R. I. Greening and Golden Russet.

DISTRICT No. 10.—Huron, Bruce and Grey.—A. MCD. ALLAN, Goderich, Director.
Summer.—Yellow Transparent and Duchess of Oldenburgh.
Autumn.—Gravenstein, Wealthy and Colvert.
Winter.—Pewaukee, Ontario, Baldwin, Hubbardston's Nonsuch and Cranberry Pippin.

DISTRICT No. 11.—Middlesex, Perth and City of London.—T. H. RACE, Mitchell, Director.
Summer.—Duchess of Oldenburgh and Yellow Transparent.
Autumn.—Gravenstein, Colvert, Alexander and Fall Pippin.
Winter.—Golden Russet, Ribston Pippin, Ontario, Hubbardston's Nonsuch and Cranberry Pippin.

DISTRICT No. 12.—Essex, Kent and Lambton.—N. J. CLINTON, Windsor, Director.
Summer.—Yellow Transparent and Duchess of Oldenburgh.
Autumn.—Gravenstein, Chenango Strawberry, Wealthy and Lowell.
Winter.—Ontario, Blenheim Pippin, Baldwin, R. I. Greening and Golden Russet.

DISTRICT No. 13.—Algoma, Simcoe, Muskoka and Parry Sound.—G. C. CASTON, Craighurst, Director.
Summer.—Duchess of Oldenburgh and Yellow Transparent.
Autumn.--Alexander, Colvert, Red Beitigheimer and St. Lawrence.
Winter.—Pewaukee, Golden Russet, Scott's Winter, LaRue and Wealthy.

APPENDIX III.

CONSTITUTION OF THE ASSOCIATION.

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 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 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 at 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 and 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' Report ; (3) Reading of the Treasurers' Report ; (4) Reading of the 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 the country, together with such other general and useful information touching fruit interests as may be desirable, and report in writing to the Secretary of the Association on or before the fifteenth day of September in each year.

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.

Proposed Amendments to By-laws—to be Voted upon by next Meeting.

Local Fruit Growers' Associations.

16. It shall be the duty of the officers and directors of the Fruit Growers' Association of Ontario to encourage the formation of local fruit growers' horticultural societies in affiliation with the Ontario Association.

17. Any one may become a member of such local society for one year upon payment into its treasury minimum sum of one dollar ; and a compliance with clause 18 of these by-laws shall constitute him also a member of the Ontario Association for the same term.

18. On the receipt of the names of such members, with the required fees, the secretary of such local affiliated society may transmit their names and post office addresses, together with the sum of eighty cents for each, to the secretary of the Fruit Growers' Association of Ontario, who will enter their names as members of that society, entitled to all its privileges, providing such names are sent in lots of ten at a time.

19. Each local society so affiliating with a membership of not less than fifty, shall be entitled to a visit from some member of the board of directors or other prominent horticulturist, once a year, at their own request ; it being understood that the railway expenses of such speaker shall be paid by the Ontario Society, and the entertainment provided by the local society.

20. The proceedings of such local Fruit Growers' Horticultural Societies shall, on or before the 1st day of December of each year, be forwarded to the secretary of the Ontario Society, who may cull out such portions for the Annual Report to the Minister of Agriculture for the province, as may seem to him of general interest and value.

21. These local societies, if formed in cities, towns or incorporated villages, may be formed under the Agriculture and Arts Act (see sections 37, 46 and 47) and receive their due share of the Electoral District grant for the support of such societies.

23. Each local affiliated society is farther expected to send at least one delegate to the annual meeting of the Fruit Growers' Association.

The director of the Fruit Growers' Association of Ontario of the Agricultural District in which such society is formed shall be, *ex officio*, a member of the executive committee of such local society and receive notices of all its meetings.