

REPORT
OF THE
FRUIT GROWERS' ASSOCIATION
OF THE
PROVINCE OF ONTARIO,
FOR THE YEAR
1881.

Printed by Order of the Legislative Assembly.



Toronto:
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1882.

REPORT
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MANAGEMENT OF ORCHARD

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ANNUAL REPORT
OF THE
FRUIT GROWERS' ASSOCIATION
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PROVINCE OF ONTARIO,
FOR THE YEAR 1881.

To the Honourable the Commissioner of Agriculture:

DEAR SIR,—It gives me much pleasure to transmit to you the Report of the Fruit Growers' Association of Ontario for 1881, containing so much valuable information on matters affecting this very important branch of industry.

The discussions at the winter meeting have been very carefully taken down by a competent short-hand writer, and will be found to be exceedingly interesting.

The publication of the *Horticulturist* has been continued during the year; this monthly medium of conveying intelligence on subjects coming within the scope of the Association continually growing in favour with the members.

The important subject of Forestry has been also carefully discussed, and much valuable information collected.

Trusting that the efforts of the Association during the past year will meet with your approval,

I have the honour to be

Your most obedient servant,

D. W. BEADLE, *Secretary.*

PROCEEDINGS AT THE ANNUAL MEETING.

The Annual Meeting of the Fruit Growers' Association of Ontario was held in the City Hall, London, on Tuesday evening, 27th day of September, 1881.

President Dempsey was in the chair.

The business of the evening commenced with the reading of the minutes of the last Annual Meeting, which were received and adopted.

The Treasurer's Report was next read, received and adopted, as also was the Directors'.

The President's annual address was referred to the Committee on Printing, for the Annual Report.

After the general routine business the meeting proceeded to the election of officers for the ensuing year, with the following result, viz. :—

President—P. C. Dempsey, Esq., Albury, Prince Edward Co. Vice-President—William Saunders, Esq., London, Middlesex Co.

Directors—Division No. 1, John Croil, Aultsville; No. 2, P. E. Bucke, Ottawa; No. 3, R. J. Dunlop, Kingston; No. 4, H. Young, Trenton, Hastings Co.; No. 5, Thos. Beall, Lindsay, Victoria Co.; No. 6, Geo. Leslie, Jr., Leslie, York Co.; No. 7, W. Holton, Hamilton; No. 8, A. W. Smith, St. Catharines; No. 9, C. Arnold, Paris; No. 10, A. McD. Allan, Goderich, Huron Co.; No. 11, John M. Denton, London; No. 12, B. Gott, Arkona; No. 13, Chas. Drury, Crown Hill, Simcoe Co.

Auditors—John A. Bruce, Hamilton; Angus Sutherland, Hamilton.

At a subsequent meeting of the Directors Mr. D. W. Beadle, St. Catharines, was appointed Secretary-Treasurer.

DIRECTORS' REPORT.

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

GENTLEMEN,—Although the year now closing has not been one as abundantly supplied with fruits of all kinds as was the previous year, yet we believe that the fruit grower will find the results of his labour to compare favourably with those of other tillers of the soil. We must not expect to escape the vicissitudes that attend upon enterprises of every kind.

Our own Society, we are happy to say, has continued to prosper during the past year. The attendance at the meetings has been very good, and the interest in the discussions well maintained. We obeyed your instructions and employed a short-hand writer to report the proceedings and discussions of our winter meeting, which was continued for two days, and have thereby secured an accurate account of what was said, which will appear in full in our forthcoming Report, and greatly add to its value.

The Midsummer meeting at Owen Sound was also well attended, and, through the kindness of the resident members, was made an occasion of much pleasure and profit. The *Canadian Horticulturist* has been continued during the year, and we think that the time has now come when we may safely venture to increase its size, and thereby add to its usefulness. There has been an increase in the membership during the past year of sixty, showing that we are gaining a little in public favour. The planting of fruit and forest trees at the Experimental Farm, Guelph, has been continued this year, and a large variety has been planted that we expect will in time become of great value in imparting to our young farmers a knowledge of the appearance and value of different fruits, such as will enable them to act judiciously in the planting of their own orchards.

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TREASURER'S REPORT.

The Treasurer begs to submit the following Report of the Receipts and Expenditure during the current year:—

<i>Receipts.</i>	\$	cts.
Members' fees	1,198	00
Sale of back volumes of <i>Horticulturist</i>	1	50
Advertising	2	00
Government Grant	1,800	00
	3,001	50
Balance at last audit	518	24
	3,519	74

<i>Disbursements.</i>	\$	cts.
Postage and telegrams	57	67
Directors' and Committees' expenses	576	47
Freight and express	15	91
Duties	17	25
Printing	151	70
Plant distribution, 1880	394	90
Illustration, <i>Canadian Horticulturist</i>	97	61
Guarantee premium	20	00
Short-hand report	55	00
Commissions	27	97
Rooms—holding meetings	8	00
Clerk	100	00
Plant distribution, 1881	279	72
Binding and mailing, 1880 and part 1881	248	50
Paper and stationery	197	21
Audit, 1880	20	00
Secretary's salary	200	00
Editor's salary	300	00
	2,767	91
Balance	751	83

<i>Liabilities.</i>	\$	cts.
Printing	325	00
Audit, 1881	20	00
Binding and mailing	65	00
Directors and Committees	135	00
Postage	15	00
Paper	190	00
	750	00

We certify the above to be a correct abstract.

JOHN A. BRUCE,
ANGUS SUTHERLAND, } *Auditors.*

THE PRESIDENT'S ANNUAL ADDRESS.

Gentlemen of the Fruit Growers' Association of Ontario,

The usages of your Association make it obligatory upon the President to deliver an Annual Address. Occupying, by a singular mistake of the Society, the position of President, I attempt to perform a duty that should have been given into abler hands.

Friends of Horticulture,—We meet again, after the labours of another year, to exchange friendly greetings—to look back upon the results of our toil, and with words of cheer to encourage each other to new endeavour. The lessons of past success or failure will alike instruct us, and if rightly learned we stand to-day on vantage ground to take up the work of the coming year. Our meetings during the year have been of more than usual interest, and well attended. The discussions, to those who had the privilege to take part in them, have been of a very important character, and I only regret that any of our members have been unable to avail themselves of these opportunities for receiving and imparting information. You, gentlemen, who have taken part in promoting the usefulness of this Association, have reason to feel proud of so great a work already achieved. The results of your labour are now to be found everywhere in very much improved systems of the cultivation of fruits. The orchard is beginning to receive some considerable share of the attention of the farmer. Finding that no insignificant part of the income of the farm is derived from the orchard, more extensive plantations are being made, and enquiry instituted for the varieties most likely to be remunerative. It is to be regretted that many of the older orchards were planted with varieties not profitable for market, or not calculated to withstand the severity of the climate, which had its effect to discourage the cultivation of fruit in many sections. In this your labours have been appreciated, aiding them to make better selections of varieties that are better suited to their soil, climate, commercial and culinary purposes. We now find among us farmers who are well informed as to varieties and the better methods of cultivation; and though it is true that some of them will tell you that they were never members of your Association, yet we find that the reading of our discussions, published, however imperfectly, in their paper, has been of no small service to them—so great, indeed, that if they would only reflect for a moment they must surely see that they have lost much by not attending our meetings, and participating in our discussions and interchange of ideas. Nor is it merely loss of practical information of no small value. Does it not help us much in our individual struggles to meet now and then with those who know the same trials—to grasp their friendly hand and enjoy their sympathy? And when we have told what little we know, garnered from our own experience, is there no pleasure in the thought that perhaps we have helped some toiling brother up his hill of difficulty?

CATALOGUE OF FRUITS.

It has been the opinion of some of us that a catalogue of the fruits cultivated in our country would be useful to the majority, but there are very great difficulties attending the publishing of such a work. Such is the effect of climate, for instance, upon the different varieties of fruit in different localities, that an apple which will succeed at Niagara is often found to fail in the more eastern counties. The culture of the peach is confined very nearly to only three of our agricultural divisions, while the grape and most of the small fruits have been found to succeed in almost every part of Ontario. Your Committee has asked each Director to make a report from his division upon the fruits cultivated therein. These reports will not only be of great practical value to the fruit-grower, but will largely take the place of a catalogue, and remain among our records for centuries, and become a history of the progress that is being made by your Association.

INCREASE OF MEMBERSHIP.

We often ask ourselves how can we best manage so as to increase our membership. We tell the people that they will get a copy of our report, to which they reply, "We get

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it from our member." Then we tell them that they will be aided in making their own place an experimental garden; that plants are annually distributed among the members; and to this they often reply that "Neighbour So-and-so received one and it died," or that it proved to be no better, or perhaps not as good, as sorts he already had; as if such things were not to be expected. Let me give you a leaf from my own experience in this direction. I have imported some hundreds of varieties of apples and pears from Europe, all of them supposed at the time to be far better than any we had, and out of all these I have now not more than five or six apples, and perhaps as many pears, that have proved to be of superior value. Should this, gentlemen, discourage us from continuing our experiments? If, out of hundreds, we succeed in getting one variety of great value, is not that a sufficient reward? Have our hybridists lived in vain because they have succeeded in producing but two or three really superior varieties in a life-time?

OUR PERIODICAL.

Gentlemen, we have undertaken the publication of the *Canadian Horticulturist*, and its free distribution to our members. I find it is being highly prized among them. By means of it we can disseminate an immense amount of knowledge. It is true that in its commencement we could scarcely see our way to undertake so great an enterprise, but the increase in the Government grant has enabled us, with the most rigid economy, to meet the expenditure. We hope next year to be able to print it in double columns and add eight pages to its size, thus making it as valuable as any other periodical of its kind published upon the continent.

The advantages which this Association offer to its members, I am happy to say, are being appreciated. There has been a gradual increase in our numbers for the past few years, and small as it seems to us who are anxious to extend its benefits to every one who tills a rod of ground in the Province, I find, upon examination, that we really number fully three times as many members as any kindred Association, not excepting the great American Pomological Society.

FORESTRY.

It is but a short time since the subject of Forestry was undertaken by you, and already you can begin to see the results of your labour. Questions are being asked as to the best way to ornament grounds by the planting of trees, or to increase the value of our farms by roadside planting, or by planting on lands that, being rocky or broken, do not admit of cultivation. Some have already commenced such planting, and who can compute the increase in value of every farm in the Province when our country roads shall have become avenues of stately trees, and our rocky fields and broken hillsides are covered with profitable timber? Attention has already been turned to the planting of the black walnut as a profitable timber tree, whose rapid growth, combined with the high price of its lumber, gives it a prominent position. The maple and elm and basswood, when planted along the roadside and thus given room for development, become objects of great beauty. Who of us does not enjoy not only the beauty of such trees, but the grateful shade they afford us when driving on such hot days as we have but recently experienced? And is not all honour due to those municipalities which are encouraging such roadside planting by the granting of premiums and the enacting of suitable protection?

THE GARDEN.

This has been too much neglected, particularly by our rural members. There is no part of the homestead more attractive than the well-kept garden. I know a person that prides himself on keeping his garden in good condition, and I have known persons to come long distances just to stroll around his garden and admire his beautiful blocks of roses and other well-kept flowers. I could always enjoy a visit to his well-grown pears, grapes, dwarf apples and plums. The small fruits were never neglected, and in their season became a source of attraction not only to the stranger who visited his grounds, but to his own family. His vegetables were always good, and he was never heard to complain that

it was a bad year for this or that, but with thorough cultivation overcame every difficulty that would arise, so that his crops were seldom failing. Thus his family has more attractions at home than abroad, and his table is always supplied with choice vegetables, luscious fruits, and a beautiful bouquet.

THE FRUIT CROP.

This season has not been an unbroken success. In many places strawberries appeared very promising, but a severe and cutting frost came about the first of June and destroyed the greater part of the crop. Notwithstanding this, the yield in some localities was never better, and the crop of raspberries and other small fruits has been good. Grapes have failed in some localities, being in bloom at the time when that June frost occurred, but the fine display of beautiful samples at the Exhibition prove that the failure has been by no means general. The apple crop is very short over nearly every part of the Province, and those who are so fortunate as to have a few hundred barrels of prime winter apples may look for remunerative prices. After such an abundant crop as we had last year, it would be expecting too much from our orchards that they should yield a full crop this year. Indeed, the fact that our apple trees generally bear in alternate years has become a recognized element in our calculations. The pear trees, in many sections, have been suffering from blight, in some more than was ever known before. It has been my privilege to visit several pear orchards this summer; some of these were in sod, some were neglected, and some were cultivated, but I can assure you that for profitable results the comparison was decidedly in favour of cultivation.

PROBABLE DEMAND FOR OUR FRUIT.

While our apples are being sought for in England, many of us seem to fear that there will soon be such an over-production that there will be no sale for our fruit; but let us bear in mind that while Britain requires fully two millions of barrels of apples per annum more than they ever grow, last year, when we had the largest crop that Canada ever produced, we were not able to send them two hundred thousand barrels. Our cities, at their rapid rate of growth, will require a large and yearly increasing amount to supply them. Our great North-West, I believe, will increase in population at a far more rapid rate than our supply, so that I can see no reason for apprehension that the demand will not for many years keep pace with the supply. As fruit-growers, let us extend our business, grow only those varieties which are best suited to our markets, and send to market only first-class samples, and we need have no fear of overdoing the trade.

PROTECTION.

While the manufacturer, mechanic and farmer are asking for protection, permit me to say that there is no class of producers that stands more in need of protection than the horticulturist. Why should he alone of all those who by their labour are contributing to the building up of this Canada of ours be left to struggle against such fearful competition? No sooner has he planted a tree or grape vine or strawberry bed, and with expectation full of hope is waiting for his returns, than, alas! he finds that he has a competitor in the field—a competitor that to others may seem small and insignificant, a mere tiny moth perhaps that one may crush between his fingers, or crawling caterpillar you could trample under foot; but it comes in such stealthy way, or in such overmastering numbers, that the hopes of a season perish in a night. Or when his ripening melons are giving promise of a golden harvest, a troop of boys swoop down upon his labours and leave but a wreck behind. Against these, and many such like pests, has he not great need of protection? To our Entomological friends we are under many obligations for the valuable help they have given us in pointing out the several methods of protection against our insect foes; but against these marauding boys, who will devise an effectual defence? I can only suggest that we induce the Legislature to pass an Act making every man a constable for the protection of the fruit-grower, as is the case in the neighbouring State of New York,

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The winds have often such unbroken sweep that they carry away the pollen, so that it cannot fructify the blossoms; or if these chance to set, they shake down the fruit before it ripens, or break the branches, or with wintry breath kill the fruit buds. Therefore, I suggest that in the planting of orchards we select, as far as possible, sites protected by hills or forests, for the protection nature affords will be found much more reliable than that of legislation. Where these do not already exist, a belt of trees planted to windward will be found not only a shelter to the orchard, but an ornament and improvement to the farm. Then there is the mildew, which will sometimes ruin our grapes, and we ask how to prevent it. My own experience leads me to suggest that the best protection against mildew is to plant those varieties known to be least subject to its attacks. No wise man will plant extensively any variety without first inquiring whether it possesses a healthy constitution, and foliage not liable to the attacks of mildew. By observing this simple suggestion one may often protect himself from serious disappointment and loss.

We have this season experienced a drought of unusual severity. How can we best protect ourselves from the serious effects of these long-protracted droughts? We have lately seen trees stripped of their foliage, fruits dropped prematurely upon the ground, and strawberry plantations nearly killed outright. Is there no remedy for these evils? Permit me to suggest that I think there is—that by the frequent stirring of the surface we can to a large extent prevent the ill effects of drought, and preserve our orchards and gardens in a growing state. If any doubt the efficacy of this method, I wish that they would give it a trial next season, by keeping up a frequent stirring of the soil during the whole period of plant growth, not waiting for the drought to set in before they begin operations.

Another matter of protection I must not leave unnoticed. It is one upon which I feel particularly qualified to speak, if considerable experience can be considered as constituting a qualification. Perhaps there are some in this audience who have not had the pleasure of sending their season's crop to market. The fruit was gathered with care, sorted with nicety, put up in clean barrels, and consigned to the commission man, and they waited for the returns—a draft, a cheque, a post-office order—and though this took place perhaps years ago, they are waiting still. If there be any such present they will know what I mean. Now, against such disappointment I think the fruit-grower may justly ask for protection. If I entrust a man with my money and he applies it to his own uses, he becomes a defaulter. If I entrust my fruit to a man to sell and he applies the proceeds to his own uses, why is he not a defaulter and a criminal? The fruit is not sold to him; he is merely my agent to sell my fruit; and when it is sold the money he receives for it is my money, and when he applies it to his own uses why should he not be liable to criminal prosecution? This is a case for legislative protection, and producers must make themselves heard in the halls of legislation until the law is so amended that middlemen who do not pay over the proceeds of products consigned to them for sale are treated as criminals.

The Council of the Agricultural Association has awarded a silver medal to the manufacturer of a waterproof boot, thereby indicating their sense of the injurious effects arising from wet feet. Not only do our sons and daughters, however, go into a state of premature decline as a consequence of wet feet, but the evil effects of wet feet may be often seen in the early decay of our most valuable fruit trees. I do not know that any one has thought of offering a silver medal to the manufacturer of waterproof boots for apple trees, but this I have seen—orchards, and not a few, dying of wet feet. The only remedy, however, with which I am acquainted is, not the use of a boot to protect their feet while standing in the water, but to first so drain the soil that there shall be no water in which their feet can stand. I cannot too urgently press upon your attention the truth that an orchard will not thrive in a wet, cold subsoil, and that if you want healthy trees you must protect their feet from the wet.

Gentlemen, for me to prolong this address would be but to weary you. I thank you for the courtesy you have shewn me in listening so patiently and so long to my desultory remarks. I trust that in my successor you will have one better able to interest and instruct you.

DISTRICT REPORTS.

The following reports were handed in after the reading of the President's address, and ordered to be printed in the Transactions of the Association :—

REPORT FROM DISTRICT NO. 1.

As requested by the Fruit Growers' Association of Ontario, I beg to hand in the following report :—

Flowers.—I am happy to say there is in our District an interest and taste for garden ornamentation, which goes on increasing. When I took up my residence in these parts, anything worthy of the name of a flower garden was a curiosity; now most houses have their flower plot—not a few of them that desirable little enclosure worthy of the name of garden. In addition to the old flowers (many of which, by-the-by, excelled in beauty the new kinds) we have geraniums, fuschias, peonias, zinnias, stocks, gladiolus, coxcombs, asters, balsams, verbenas, antirrhinums, etc., in endless variety. I had almost omitted the Drummond phlox, of which the man is said to have lived and said, "Let me have but one flower in the garden, it will be the Drummond phlox." But the list is only commenced. Add to it at least one hundred kinds more, the best picked from the best catalogues, and you will have some idea of the kinds cultivated in these cold regions. So much for flowers.

As for *Vegetables*, with very few exceptions every seed recommended in the Montreal and Toronto catalogues will grow and succeed here. Many of our farmers, to be sure, content themselves with a limited assortment of the more useful kinds, but in many gardens specimens are to be found of nearly all. For new kinds introduced lately, I must refer to a special list I am requested to send to Mr. McD. Allan, Chairman of Committee, to which I dare say he will give publicity.

In the matter of *Apples*, a report of kinds grown in our neighbourhood will also be found in Mr. Thos. Beall's returns, from particulars furnished by myself and others.

The following *small fruits* are commonly cultivated and succeed well here :—Strawberries, raspberries, blackberries, currants of different varieties. Gooseberries are grown, but not successfully, mildew being the chief drawback. Perhaps I am tempted to speak disparagingly of this fruit, having seen specimens in Auld Scotia, a month ago, thriving as I had never seen them do before. In a garden I visited near Glasgow, the bushes (I should rather say trees) were loaded to such an extent that my veracity would be questioned were I to venture an estimate of the quantity on each bush; but let me say that the man's teeth that didn't water at the sight of them needed readjustment. I asked my friend, the owner, how old these bushes were. He was an honest man (a minister, too); he assured me to his certain knowledge they were thirty years old at least.

Out-door *Grape Vines* do well with us, but require to be laid down and covered in winter. I am cultivating about twenty varieties. The hardiest varieties I have tried are the Delaware, Hartford Prolific, Burnet and Creveling.

I have trespassed long enough on the readers' time and patience, and crave their indulgence for omissions.

JOHN CROIL.

Aultsville, 14th September, 1881.

REPORT FROM DISTRICT NO. 2.

Strawberries have been a fair average crop, but have not yet been raised in sufficient quantities to supply the local markets, especially for Ottawa City. Owing to the duty of two cents per quart imposed by the Government, at the instigation of the Fruit Growers' Association, nearly all the berries brought here from a distance were raised in Canada. Prices ruled from ten to twelve and a-half cents per basket retail, extra lots fifteen cents. It is believed too much barn-yard manure is used in raising this fruit by the local gardeners here, which has the effect of making the top soil porous and dry. Thoroughly rotted sod, after a crop of potatoes, is probably the best preparation for setting the

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plants, and an application of phosphates, or bone meal, wood ashes and salt, having due regard to the quality and condition of the soil, would be found to produce heavier crops and better berries, with a less show of leaves.

Currants, red and white, when protected the previous year from the injurious attacks of the saw fly, have produced full crops as usual. It must be remembered, however, that a heavy yield is exhaustive to the plant, and good cultivators will return to the soil stimulating manures to insure good results in 1882. For this purpose a compost of night soil with dry earth is probably the best thing to use, and should be applied before winter sets in as a top dressing.

These remarks apply also to the *Gooseberry*, of which probably Smith's Improved takes the lead over the Houghton and Downing; where the European varieties cannot be grown.

Raspberries.—The cultivated reds and whites, which received careful protection during the winter of 1880–81, were very productive and gave fine fruit. The saw fly, from which they had hitherto suffered considerably, was not so injurious during the past season.

Black Caps did fairly well, but it is questionable if they will ever be made to produce as remunerative a crop as the reds or the strawberry; nevertheless, they were in good demand, and are gradually coming into favour. As a canning fruit they have few equals, as any good housewife can testify who has given them an impartial trial, and they make a thicker preserve than the reds or strawberry.

The *Saunders Raspberry* does well either preserved or canned; being of a sub-acid flavour, its individuality is not lost in the dead sweet of the sugar. Some seedlings are being raised from this variety which promise good results.

Apples are scarce; even the crabs are not up to their usual crop, and the trees of the latter have blighted badly. The twig blight has attacked, for the first time to any extent, almost all the varieties of apples in this neighbourhood. The partial crop of the fruit in the western part of Ontario will, it is feared, produce an apple famine in this locality.

Plums.—The wild sorts have been quite abundant, but, owing to the western crop of cultivated varieties being light, these have sold better than usual; anything like a good sample have brought forty cents per pail. The Greenfield—the largest red plum raised here—was sold at twenty cents per gallon. The Glass seedling sent out by the Fruit Growers' Association is fruiting in many localities, and those produced are unusually fine. The Yellow Orleans Gage, though too tender for a crop, is producing some fine and high-flavoured fruit, and the Horse plum is making a fair show. On the whole, plums in this section are doing better than they have ever done before.

Grapes are making a fine show, and ripening earlier than usual. Champions were well coloured by the 1st September, and were closely followed by Hartford, Miller's Burgundy, Aylmer Sweet-water, Chasselas of Fontainebleau, Creveling, Delaware, Burnet, Dempsey's 60, Lindley, Agairand, Concord, Dempsey's 25, Iona and Arnold, Othello, Autuchon, Brant, and Canada. Salem proved an entire failure, owing to mildew and rot. The grape crop of 1881 in this section has never been exceeded either in weight, earliness, or the area planted, which is gradually increasing. A few more such bright seasons as we have had this year will go far to establish this enterprise on a solid and lasting basis. Ottawa and its vicinity has shown itself fully equal, if not superior, to the far-famed regions of Western Ontario for the production of this fruit. One great lesson has been learned, and that is—to have fine and early fruit, the vines must not be allowed to overbear. Two bunches on each bearing cane are found sufficient even after the vine has attained mature age, and is in full bearing condition. The greatest curse the vineyardist has to contend with is the thrip. A good specific for this insect pest, for out-door vines, would be a most desirable acquisition to the grower of this sub-tropical fruit.

In conclusion, I have much pleasure in reporting that the cultivation of fruit is fast spreading about here, and for the production of small fruits and grapes I see no better locality in any part of Canada. Respectfully submitted.

P. E. BUCKE.

Ottawa, 1st September, 1881.

REPORT FROM DISTRICT NO. 8.

In reference to fruit in this section of Ontario, I must report a very fair crop in many lines. The strawberry crop was good, and good prices realized; currants a good crop; berries fair; plums very light—many varieties set good, but the curculio caused them to drop; pears a very fine crop—almost every tree that bore the name bore the fruit also, and generally smooth and free from snarls and imperfections. Oh, could we but banish the blight or find a remedy. Peaches—what shall I say? We all thought the crop would be a very light one, but when they came to mature I tell you they were unhandy to pack; three tiers were far too many to fill a basket, and two not quite enough—like the chicken, a little too much for one and not quite enough for two—and the quality all that could be desired, and prices satisfactory. Grapes a good crop, but are going to fail in many places for the want of rain, and will lack in flavour. Apples: The crop will be short—about one-third of an average I should say—and in many places small in size, on account of the extreme drought, especially on heavy land and where cultivation was neglected, and I fear the drought will injure their keeping qualities; the early varieties were not plentiful, but were of fine quality.

Flowers: I am not very well posted, but to judge from the many fine samples I should say the season has been a good one until now. Vegetables I believe are a very fair crop; I have heard very little complaint of the ravages of insect pests. The potato bug of course was very numerous, but our people have learned to combat them successfully. Forestry; Our forests, which are rapidly passing from our view, also show signs of this extreme drought; the leaves on many a fine old stately tree are showing the yellow leaf of autumn. I trust, Mr. Secretary, you will excuse this hurried and imperfectly prepared report, but after passing through two weeks of extreme heat, rushing one variety of fruit on top of the other, well may the fruit-grower say that "time and tide wait for no man."

Yours respectfully,

Grimsby, Sept. 7th, 1881.

A. H. PETTIT.

REPORT FROM DISTRICT NO. 10.

Soil.—This district, comprising the Counties of Huron, Bruce and Grey, rejoices in a variety of soil. In Huron a clay loam predominates, and along the lake shore we find it mostly a light loamy or warm sandy soil, and occasionally ridges of gravel and flats of dark loam. The subsoil is clay and gravel mostly. In Bruce we find clay, light and black loam, sand and gravel, pretty evenly distributed with the clay and sandy subsoil, and occasionally traces of limestone deposits. Grey varies greatly, but where soil fit for agricultural purposes exists the predominating kind is clay. Large sections are covered with limestone rock, interspersed with gravelly loam. In the vicinity of Owen Sound we find a mixture of sandy and clayey loam, with a subsoil of hard clay or rock.

Climate has completely changed in the last 30 years. Especially is this noticeable in the absence generally of late spring and early fall frosts, so that we are enabled to grow in the open air now fruits and vegetables that 30 or 20 years ago would surely perish either in early summer or before maturity in fall. The present season, however, has proved an exception in many sections, the late spring frost having made sad havoc among fruits and fruit trees. In the central sections of Bruce, and through Grey generally, as well as the inland portions of Huron, we find complaint of blossom killing. In Bruce the frost of June 6th cut off the strawberry bloom entirely, and the fruit crop generally of early blooming varieties was mostly all cut off; indeed the crop of apples, pears and plums this year in that county will be but a small fraction of the ordinary yield, with the single exception of crab apples. The extreme frost in February last killed thousands of trees and vines throughout this district. Only on the Lake Shore sections do we find growers free from these influences, partially or wholly. But the season now coming to a close has so far been an exception, and we hope to meet with such exceptions, if at all again, only at very long intervals.

Strawberries are grown largely over the district, both by regular growers for market and by amateurs for private consumption. Although there exists a diversity of opinions as to the relative merits of our many varieties, yet all willingly agree in testifying to the

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profitableness of the crop, especially in small garden plots for family use. Among large growers the Wilson's Albany has for years past been exclusively grown for shipment, but now we are glad to be able to report an advancement in taste, and soon the Wilson's Albany will have to give way to some finer and more palatable varieties. When pocketing our ten or eight cents per quart for the Wilson, we cannot help feeling a twinge of conscience at our gain, which will surely bring *internal* discord in the family of the city consumer. The fact is, Wilson's Albany is a good strong grower, a prolific bearer and a good shipper; but in order to reach the market and allow sufficient time there to reach the unfortunate consumer, the grower picks it before actually matured. It is picked when a fine lively bright crimson, and certainly looks very attractive, but it is not ripe, and has only commenced to acquire that true strawberry flavour which is so delicious and enjoyable. The fact is, that so long as growers pick and ship this variety as they now do, consumers who depend upon them will not be purchasing better than a third to a fourth-class berry. At its best we do not look upon it as better than second-rate. One Huron grower has an acre of Triomphe De Gand, and he finds ready sale locally for his crop in preference to Wilson's, which has to travel cityward now since the advent of this variety. There appears to be a desire among growers to find a berry that has all the good qualities of Wilson's Albany for cropping and shipping, together with a superior character in other respects. Sharpless is gaining in favour, and already has been shipped as far east as Toronto by way of experiment, and with gratifying results, having brought wholesale ten cents per box, while Wilson's Albany sold for six and seven cents. Arnold's No. 23 is spoken highly of as likely to prove a fairly good shipper. It certainly is a strong grower, prolific, and of extra fine quality. Crescent Seedling is variously spoken of as medium to good; some complain that it does not ripen evenly, while others say the difficulty is that as a cropper it cannot be depended upon. Col. Cheney and New Dominion are being tested largely, with very favourable results. In Huron the strawberry crop the past season was injured by late spring frost, and therefore was not much over half the average yield. The crop finds ready sale in our towns and villages, where most of the past season's crop was consumed. Small shipments were made to Mitchell, Stratford, and other towns. The price averaged ten cents per quart retail, and seven cents wholesale. In Bruce the crop was a failure, having been entirely destroyed by the June frost, so that the local markets had to import a supply from Hamilton and Oakville sections. In Grey, strawberry culture is largely on the increase, and now the section around Owen Sound produces sufficient to supply that and many other towns and villages in the county, besides making large shipments to other sections. Prices range from six to twelve cents per quart, depending upon samples and state of the market. Wholesale prices are as low as five cents. Probably there is no section of this district better, if so well adapted to the cultivation of strawberries as that in the vicinity of Owen Sound. The soil here upon which this crop is grown most successfully is composed in about equal parts of sand and clay, not too stiff to be difficult to work, and strong enough to give a luxuriant growth. Large quantities of the wild strawberry are still found in sections of Bruce, and bring good prices even in competition with cultivated varieties. The entire crop of this district would average about 2,200 quarts to the acre for the season, the largest average yield being at Owen Sound.

Raspberries have not been cultivated largely in any part of the district on account of the plentiful supply of wild fruit, which sells freely at from sixty cents to one dollar per patent pail. But it is altogether likely that growers will plant largely of cultivated varieties now that the market has been tested successfully with them. It was feared that the wild berries would make the cultivation of our fine varieties unprofitable, but those who have made a trial report that there is a rising demand for the finest fruit, and that raspberries can be cultivated profitably. Encouraged by this experience, we find growers planting freely of the finest varieties. Those that have been tested in Huron are Philadelphia, Franconia, Turner, Brinkles' Orange, Herstine, Highland Hardy, Brandywine, Arnold's Diadem, Clark, Kirtland, Cuthbert, of red varieties, and Doolittle, Gregg, Davison's Thornless, and Ontario, for black varieties. All of these have proved hardy along the lake shore. Of these varieties the Philadelphia is considered the best cropper and most valuable among the reds, and Gregg for black. It is found beneficial to shorten

in the canes early in the season, so that they become thoroughly ripe before winter sets in. This precaution is claimed also to be of great value for inducing the cane to branch out more than it otherwise would, and therefore give a larger yield. In Bruce we have only found a few isolated cases of raspberry-growing by amateurs for home use. In Grey, however, things are different. Growers report the prospect as very encouraging, and they find no difficulty in competing with wild berries in the local market. The first four red varieties above named are grown very successfully. The even fall of snow in winter protects some of the more tender varieties in Grey that could not be grown so successfully in any other part of the district for the want of that protection, unless we except the section of Huron in the Goderich vicinity. A friable clay loam suits the raspberry well. We have what is known as the Thimble berry in our local markets; perhaps the finest we have ever seen are grown in the northern parts of Bruce; each berry is actually as large as a thimble, and precisely of the same shape; they are jet black in colour, flavour wild, slightly sub-acid, and very pleasant. A dish of these with a slight sprinkle of sugar and good country cream would tickle the palate of a king.

Gooseberries have been tested pretty thoroughly in Huron, and now growers are satisfied to keep Downing and Houghton's Seedlings and Smith's Improved, discarding all else on account of the mildew. The finer foreign varieties have been tried, and coaxed in every imaginable way, but they would invariably mildew. In Grey, besides the varieties mentioned, we find Crown Bob, Ironmonger, Yellow Sulphur, Whitesmith, Roaring Lion, and other foreigners, growing and maturing perfectly. They are not troubled with mildew, possibly on account of their stronger soil, which inclines more to the clay loam. But they don't appear to feel encouraged by the local market demand for this fruit, and are therefore slow to spread their gooseberry plots. Outside consumers desiring this fruit could easily obtain an abundant supply on the Owen Sound market.

Currants of the red and white varieties can be found going very slow in company with the gooseberries on the back shelf of our local markets, and hence they are grown only by amateurs. Black currants, on the other hand, are in demand; the supply has never reached the demand, and prices rule high. Naples sells at eight to ten cents per quart, and Lee's Prolific at ten to twelve cents; and still we do not find a disposition to increase the breadth of acreage under this crop. But few appear to know that it is necessary to give any attention at all to the black currant. The fact, however, is that the fruit-grower cannot make more profit out of any crop on his farm than this when properly attended to. It is necessary to cut out all old wood from year to year, and work and manure the land well. Indeed, if an abundance of manure is not given to Lee's, the bushes may as well be rooted out and burned, as the fruit will dwindle away and lose also in flavour; whereas, if well manured, it will bear large crops of most delicious fruit, finer than Naples for preserving, and more prolific as a crop.

Blackberries have not been grown for market, and only in a few instances we find amateurs who have them. Kittatinny gives satisfaction in the Goderich district, but proves tender at Owen Sound; Snyder and Taylor have proved hardy at that point, however, but the former is considered too small to be valuable, and the latter is considered "best." Sheriff Moore, of Owen Sound, has a selected wild variety that succeeds admirably, and growers there are likely to grow this and the Taylor in preference to any others.

Cranberry culture has been spoken of repeatedly, and at one time we thought a large acreage would soon be under this crop on Maitland Flats at Goderich. The large supply of the wild berry from marshy lands has doubtless held the market, but now that many of these well-known cranberry marshes are being drained, the market will demand a supply of fruit by regular cultivation. We cannot imagine a more profitable use to put the Maitland Flats at Goderich to; and they are admirably adapted for this purpose, both in quality of soil and especially that they could be flooded without much expense or trouble.

Quince.—The quince bush looks like an outcast, a tramp, wherever we see it here. It is not cared for at all, but planted in a fence corner, beside a stump, or on some refuse spot condemned for all other purposes. It rarely receives cultivation or dressing, and if its branches are broken down or off by the winter snowdrift, the public opinion seems

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Cherries succeed well in all parts of this district, and the yield the past season was fully up to the average. Possibly we have no fruit tree that requires so little cultivation and dressing as the cherry. It seems to succeed best on our light soils, where no manure is used; indeed, manuring often has the effect of inducing too rapid a growth of wood, which often results in splitting the tree. For some years past we have been troubled with a disastrous fungus rot in the cherry, which carried away the crop before it reached maturity. This disease always seemed worse in the heart varieties. This year we had no trace of rot, but an equally bad enemy existed in the robin, which seemed to destroy the crop just as it ripened. Growers are taking the law fairly into their own hands now, and war has been declared against the robin and cherry bird. Fair notice has been given, and next season will witness a terrible mortality among these pests. Napoleon Bigarreau is a grand cherry, and those who know them would not be without Elkhorn and Black Tartarian. Elton is good; Kentish is largely grown for market—the demand for it is large for canning purposes.

Peaches have been grown for many years in the Goderich section, and now the crop is becoming important. The local markets are fully supplied, and an overplus for export in favourable years. This year the crop is not much more than a half yield, and owing to the extreme drought the samples are small. In this section peach-growing is sure to become an important industry. The light, warm soil is suitable, and the absence of severe early and late frosts generally ensures a crop. We grow a long list of varieties, but after all growers agree that the Alexander, Early Crawford, and Hale's Early are the most profitable. Old Mixon is good, while Mountain Rose has several friends. Prices have kept pretty even at \$1.50 for a basket, which is about \$3.50 per bushel. Beatrice is not held in as high favour as in former years on account of its small size. The public appear to be willing to wait for a larger peach than Beatrice, rather than pay a fair price for its extra earliness. Early Rivers comes in about the same time as Alexander, but is not so good a peach. Early Canada lacks in flavour. For later fruit we have large quantities of home seedlings that flood the local markets, and cut prices of late varieties down low. The crop this year being small, it is not probable the price will go under \$2 per bushel for late varieties. The peach is not grown for market in other parts of this district to any extent yet, but from present indications it is probable Owen Sound fruit-growers will do something in the cultivation of peach orchards. Already there are many amateurs who have grown the early varieties successfully, and so far trees have not suffered much from winter-killing. It is found to be highly beneficial to assist the ripening of the wood by *breaking* the tips early in the season, and then when growth has ceased take off these broken pieces with a sharp knife. If the tips were nipped off early, the next bud would push forward new wood, and destroy the object of shortening; but by merely breaking the tips, and allowing the broken ends to hang for a couple or three weeks until growth has ceased, a good object is attained, and the wood fully ripened. Some growers think the peach should be hardier and bear better where grown as a dwarf, but our experience is that best results are had in orchards of standards. In Bruce, peaches are grown in the vicinity of Kincardine, but more inland they have only been tried by few amateurs. With proper care and attention in planting on a northern aspect, mulching well, and shortening in the wood in the way indicated, we believe peaches can be grown successfully all over this district. It would be well for fruit-growers to pay more attention to the propagation of good early seedlings, as they are certainly hardier, and more prolific and longer-lived than our list of known varieties. It stands to reason that they should be, as they are "to the manner born." We have not seen the first trace of yellows in any part of the district, and this fact, no doubt, is because care has been employed in the selection of stock. For the past two years growers have propagated from home stock rather than import fresh, for fear of introducing the yellows.

Apricots and Nectarines are not largely cultivated, although the fruit is fine for canning and preserving, and the trees are hardier than the peach. In Grey we have seen some fine specimens of Breda and Early Golden. Besides these we have Moorpark, Barton and Stanwick, doing well in Huron. In Bruce we have seen, this season, good

samples of Barton, Early Golden and Moorpark. Several seedlings are scattered over the country of more or less excellence. We have one old tree (a seedling) inside the gaol wall at Goderich; despite bad usage and neglect it has withstood the storms of years, and as regularly yielded up a load of delicious fruit. One would imagine from the treatment apricots and nectarines receive at the hands of growers that they were closely related to the unfortunate, much-abused Quince.

Plums.—In Huron it has become disheartening to write of the plum. The curculio has so completely taken possession of our orchards that growers are inclined to prune their trees close to the ground. However, year after year passes, and we become more accustomed to the little Turk; it does not seem to grow worse—indeed some think it was not so destructive this year as usual, but this is a mistake. Some growers who jarred their trees the first two weeks have had a good crop of fine fruit, but where no care at all was taken, the curculio has taken the entire crop, or nearly so. It is not impossible to save the plum crop even here, and if growers would only believe it, the expense of doing so is not great. It is necessary to jar the trees every day, twice if possible, and destroy the insects. The method of jarring is too well known to need repeating. This jarring should be commenced as soon as the blossom is fairly formed, and kept up for two or three weeks. Some contend that it is not necessary to begin until the fruit has formed, but this is a mistake, as the little rascal can be found working or ready for work as early as the first formation of the blossom. In Bruce the curculio has been seen this year in several sections, but has not done much damage. But in Grey growers are not troubled at all. It is delightful to walk through an Owen Sound plum orchard of 1,500 trees and find no trace whatever of the curculio. This state of affairs is too good to last long; the Turk travels slow, but will surely reach that favoured spot. Black knot is as bad as usual, but no worse; it can be found wherever plum trees are. The knife remedy is always the best. Doubtless it is propagated largely through our seedling plums, so plentiful all over this district. It is a common thing to see suckers a few inches high covered with the knot, and instances are known where the knot appears several inches under ground on these suckers. The black knot bill is a dead letter. A good deal of difference in opinion exists among growers as to the best varieties for all purposes. In Grey we find large growers who vary very much. One says he would plant only Coe's Golden Drop and Lombard. Another, who has given thought and experience of many years to the subject, would place them as follows:

1. Yellow Egg.
2. Pond's Seedling.
3. Reine Claude de Bavay.
4. Lombard.
5. Fellenburg.
6. Bingham.
7. Coe's Golden Drop.
8. Washington.
9. Duane's Purple.
10. Victoria.

Another grower would take the following six varieties, for profit, in their order: Pond's Seedling, Yellow Egg, Fellenburg, Lombard, McLaughlin and Coe's Golden Drop. In Huron the Smith's Orleans is a favourite, as it bears young and regularly large crops, and is not so badly attacked by the curculio. Coe's Golden Drop and Washington are favourites also, and the Gages are sought after by preservers for canning. Indeed, the green and light-coloured plums are becoming more popular every year for canning, while most housewives are satisfied with Lombard for the other. General Hand is only worth growing for show purposes; the tree, although handsome and strong, is the worst bearer we have. Bleeker's Gage is very productive. Lawrence's Favourite is a good table fruit. Glass' Seedling, although only second in quality, is valuable; it is generally believed to be identical with the Quackenboss. In Bruce many growers favour Bradshaw, and one near Kincardine says he would plant 2,000 trees equally divided between Yellow Egg, Smith's Orleans and Bradshaw. Others again, who have shipped mostly to the States,

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say they would plant no blue or purple plums again, as there is more money in the green and yellow. Jefferson has been held in the front rank by some for many years, and still is a favourite here. The crop this year taken over this district has been about a half of the ordinary yield, and the average price is about \$2 per bushel for the seedlings and blues, and \$2.50 for the green and yellow varieties. The rot that was so disastrous the past three years in the plum orchards has not been seen this season, excepting in a very few instances.

Grapes along the Lake Shore are an abundant crop and samples fine, but more inland, and through Bruce and Grey, the June frost cut back the canes badly, and the crop will be light. Growers are coming to the sensible conclusion that they have been experimenting too much in growing a long list of varieties, and that for actual profit the varieties now grown in the country can be whittled down to a very few. Indeed, this applies to all kinds of fruits. A Huron grower, who has tested almost every new grape in the country, said lately that if he were planting a vineyard for profit he would confine varieties to the Concord, Delaware, and Eumelan. Although we find opinions vary greatly, all growers agree in placing the Concord and Delaware at the head of the list. Doubtless we have none that succeed so well over as large an area as these varieties, and they are always saleable in markets, local or foreign. There is a desire among growers for a white grape equal to the Concord, and opinions differ very much as to the relative values of those now grown. The only one that seems at all likely to fill the bill is the new white grape Niagara, which appears to fully come up to the popular desire as far as we yet know. One grower in Grey would be satisfied with Delaware, Eumelan, Rogers' No. 3, and Hartford Prolific; and another would add Concord, Lindley, Diana Clinton, Salem, and Rogers' No. 15, and then he says he could supply the market with both fruit and wine. These varieties are grown to perfection in that county, and also Creveling, Brighton, Northern Muscadine, Rogers' No. 5, and Burnet. The latter, though ripening a little late, is likely to stand high among varieties in the Owen Sound section. Indeed, that section is capable of producing out-door grapes of any variety popularly grown. Taking the district together, there is no variety grown in the open air in Canada but can be grown here. Some very fine Concords and Delawares are grown in the neighbourhood of Walkerton, and the largest bunches of Hartford Prolific we ever saw were at the Northern Counties Fair at Walkerton. They were grown in the vicinity of Kin-cardine, on a soil made up of a light sandy loam and a slight trace of clay with limestone subsoil. The bunches were shouldered and so compact that we doubted them, but a taste proved beyond doubt they were the Hartford. We find mildew on many varieties this season. The Burnet is badly affected at Goderich, and occasionally the Salem where it has an eastern exposure; Brant also is badly affected. At Owen Sound, Creveling, Brighton, Salem, and Rogers' No. 5 were affected worse than any others. The rot has not appeared this season in any part of this district, and upon the whole the thrip has not been so bad as last year. At Goderich, the vines can be left all winter upon the trellis without any danger of winter-killing, and growers are only too glad of the chance to do so, it seems; but for the past two years one grower tested the matter thoroughly, and finds it pays well to trim in the fall, and lay down the canes for winter. Last winter he laid down one from each trellis, and left the other up, and the result is that the cane he laid down carries four times the quantity of fruit that the other does in every case. This is the second year he made this test, and now he is convinced that it pays well to trim and lay down in the fall. The Catawba has grown well, and ripened a fine crop of fruit this season at Goderich. Prices from five to eight cents.

Pears.—Although this delicious fruit has been cultivated here for many years, it is evidently only in its infancy. The desire seems to be to get down pear orchards of the best paying varieties. We have never had difficulty in disposing of our pear crop at remunerative prices. The local market is well supplied this year, and a fair overplus for shipment elsewhere. The extra crop in the district finds a market in Toronto and London for early varieties, and Montreal gets nearly all our later kinds. Prices this year are \$1 to \$2 per bushel for early varieties, and late fruit will bring from \$9 to \$14 per barrel, it is expected. The yield this year will be over the average in some parts of the district, but taken all through will not be up to the average. Bartlett still holds

first place for summer, although Clapp's Favourite is growing fast in popularity as growers find its value. If left to ripen on the tree it actually has no value, for by the time it is ripe outside the centre is mealy or rotten; but if picked ten days before ripe, it will keep well, and when ripe is as delicious a pear as anyone could desire—quite sweet enough for the sweetest tooth, more sprightly than the Bartlett, and quite as juicy and melting. For canning purposes a medium-sized Bartlett is hard to beat; Osband's Summer is highly esteemed, and Rostiezer is very good. Doyenne D'Été is too small to be of value in the market. Taking an average of the opinions of growers in Huron, Bruce, and Grey, we place the list of summer pears that we would grow as follows in order of merit:—

Bartlett,
Clapp's Favourite,
Osband's Summer.

Tyson is also added by a number of growers. Ananas D'Été has several friends, but it has not been tried generally. Those who have Beurre Giffard speak well of it; but Souvenir du Congrès is not worth growing, or attempting rather, as it succeeds only occasionally. Striking an average again for fall varieties, we have for this district the following:—

Flemish Beauty,
Louise Bonne de Jersey,
Duchesse d'Angouleme,
Sheldon,
Beurre Bosc,
Beurre Hardy.

This list gets the majority vote, but yet we find many fruit-growers of experience give a preference to a Belle Lucrative and Beurre Superfin in place of the two last on the list. It seems cruel to leave Seckel off the list, but growers cannot get price enough for it to make money—they cannot find that high-toned class of consumers who want exquisiteness. Growers complain that many of the winter kinds are lacking sadly in quality, or that the season is too short to properly mature them. Their choice is:

Beurre Clairgeau,
Beurre d'Anjou,
Beurre Diel,
Lawrence,
Oswego Beurre.

Vicar of Winkfield varies greatly and lacks in quality. A prominent pear-grower at Owen Sound, who planted 93 Dwarfs and 21 Standards in 1863 to 1865, has noted his experience from time to time. He would not plant any more Dwarfs, having lost many by breaking off at the graft union, and others were blown over by high winds. He claims that their roots are too small when grafted on quince stock. Speaking of value, he says the Louise Bonne de Jersey bears the most regular and pays best, although the fruit is on the tart side for quality. Bartlett is one of the best. Oswego Beurre is very good, but cracks sometimes and often overbears. He likes Buffam, although some other growers there speak of it as too mealy, tasteless, dry, etc. White Doyenne, good and fair-sized; Glout Morceau is long coming into bearing, and even then of poor quality; the trees are often covered with bloom, and show little fruit. This variety and Beurre Diel and Vicar of Winkfield are his worst for blight. Seckel does not bear well with him. The result of his experience would lead him now to plant only Louise Bonne de Jersey, Flemish Beauty, Bartlett, Brandywine, Beurre Diel, White Doyenne, Beurre de l'Assomption, Tyson, Beurre d'Anjou and Goodale. Generally speaking, he thinks that large pears of inferior varieties sell better than small pears of better quality. Another grower tried pear-growing on light soil, and it proved a failure on account of winter killing and blight, but he claims that since he planted in good strong clay the trees have done well. He has now

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Brandywine,
Bartlett,
Madeleine,
Flemish Beauty,
Louise Bonne de Jersey,
Vicar of Winkfield.

This season will be marked among the dark days of pear-growing, on account of the blight; it appears to have attacked all kinds, and to have been especially disastrous on Flemish Beauty and Dearborn's Seedlings, in many cases cutting off entire trees of the former. The knife is still the only remedy we know of that is always reliable. At Goderich some growers who have tried a wash of linseed oil in spring report no blight this season, excepting in one instance on a Dearborn Seedling. Flemish Beauty is not subject to spotting and cracking here as in some districts. Some of the finest samples of pears in this district are found in the rolling clay lands in Bruce. The slug has been unusually plentiful this season on the pear leaves; but the season being so dry, dust has also been plentiful, and a few handfuls thrown over each tree effectually destroyed them.

Apples.—The apple crop has now reached into important proportions among the yearly returns of our crops, and greater attention is being paid to the selection of the best paying varieties, especially those suited to the European market. When orchards were young, and the apple market confined locally, growers vied with each other for the production of the largest number of varieties; agricultural and horticultural societies encouraged this emulation by offering premiums for the largest display. Now, however, these Societies are cutting off the largest collections, and confining more to plates of the finest specimens and small choice selections. The largest apple used to have more weight with judges, in gaining premiums, than any other point; whereas now, actual merit or quality of fruit gains the ruling. Out of 52 reports from leading orchardists in this district, Red Astrachan is placed first in the summer list. The reason most commonly given is, that it can be used both for cooking and eating, and especially that it takes well in the market from its fine appearance. As an eating apple, we find a large majority say it is only deserving of third or fourth place. Some would prefer Early Harvest, while others take Early Joe or Early Strawberry. Benoni has many friends, and so have Pomme Royal and Indian Rare Ripe. Colour, size and form combined do more, probably, to place Red Astrachan in the first place than actual character. As a cooking apple alone, Keswick Codlin has no equal. But we have too many early apples; our local markets are glutted almost every season, and prices rule low. This season they are selling throughout the district at from 15 to 50 cents per bushel. We shipped some this season to Sault St. Marie at \$2.10 per barrel, and at other lake ports they brought from \$1.85 to \$2.20 per barrel. It does not pay to ship to Toronto or eastern markets, as the supply there is usually beyond the demand. In order to reach Winnipeg in good condition, we have to pick on the green side and pack carefully. Where the barrels are handled much in transit the loss from shrinkage and (as a Chicago fruit dealer expressed it) mashing is large, so that we do not often venture to ship early varieties so far. Early Strawberry ships well, but it is too small to attract western buyers. Tetofsky is also too small and lacks colour. In Chicago and St. Paul they buy apples by "heft." The quality does not matter so much as a large amount of apples for the money. Quality is actually better appreciated in Winnipeg than Chicago. This whole district is overstocked with fall apples, and their variety is legion. This season the supply is greater than the demand. They are being bought at from 70 to 90 cents per barrel for best kinds, and shipped up the lakes, and to Winnipeg and the Western States. Prices realized range from \$1.90 to \$5.86, the highest prices being obtained in Winnipeg for St. Lawrence, Cayuga Red Streak and Gravenstein; Alexander takes well in Chicago; Duchess of Oldenburg averages well in all the markets; good samples of Maiden's Blush are saleable at fair prices in Michigan; Blenheim Orange is well liked in Winnipeg. Farmers are drying largely of fall fruit this year, and thus the season's crop will be put to good account. Doubtless our great North-West will improve as a market for our overplus of early and fall fruits. The only danger now in shipping there is, that the market is necessarily limited for the want of consumers. Freight is high yet, and will remain so until we

get more direct communication. It costs \$2.07 this season to send a barrel of apples from Goderich, Kincardine or Owen Sound to Winnipeg. Many growers are top-grafting summer and fall apple trees with standard varieties. The Fameuse, or Snow Apple, is shipped often as a fall apple, but oftener as a first of winter, as it brings a better price. Usually the Snow Apple has been spotted, but this season we find it comparatively free and the fruit well coloured.

Our list of winter varieties runs over the most of those cultivated in Ontario, but when we enquire for best value the list is cut down to very few varieties. Northern Spy is esteemed generally worthy of first place on our list. Taking again the fifty-two reports scattered over the district, we find the list of favourites few, compared with the list of varieties grown. It stands thus:—

Northern Spy,
Baldwin,
A. G. Russet,
R. I. Greening,
Ribston Pippin,
Wagener,
Mann Apple,
Fameuse,
Æsopus Spitzenburg,
Swayzie Pomme Grise.

Possibly there is no apple on this list that gives upon the whole less value to the grower than Northern Spy, and yet by a majority vote it gets first place—no doubt on account of excellence of quality. As a tree, it is a clean, thrifty, but not rapid grower, is long in coming into bearing, and when it does is a shy bearer. As age creeps on, it gives a poorer sample of fruit, and should it give a large cover in a season one half is invariably of poor sample. The Greening and Baldwin are reported as tender when young, in the vicinity of Owen Sound. Our crop this season is small, and the export trade will be limited, although good samples and prices will be obtained. Last year the crop was very large and the export trade was extensive. The experience gained by dealing with the mother country gives us the flattering belief that we know more about good apples than they do. Certainly, if we take their judgment from the scale of values given for our apples, it is far from agreeing with our ideas of intrinsic worth. Those who have not shipped to Britain, and contemplate doing so, would do well to select with regard to the rules of value laid down by purchasers in Britain. Our experience has been as follows: It does not pay to ship large apples. They want a medium-sized, high-coloured, well-formed apple; the fruit must be perfectly clean and free from worms. In order to obtain as thorough a test as possible, we shipped last year a few barrels of kinds and sizes obtainable here. The highest price we got was for Green Newton Pippin \$10.63 per barrel, which shows that they do not always judge by colour." Indeed it is hard to understand why this variety should rule so high, and probably we never will know more about it than that it happened to gain notoriety. There is nothing in its character to recommend it specially; indeed, it is oftener placed here as third in quality than higher. It is a hard apple to grow, as it tends greatly to spot. Swayzie Pomme Grise brought \$9.42 and \$10.11; the average Baldwin, \$4.07; R. I. Greening, \$3.86 and \$4; a special lot of the small Baldwins picked from the tops of the trees, whose colour was fine, brought \$9.13, they were labelled "special dessert." Northern Spy averaged \$5.17 for medium-sized fruit, large samples brought only \$3.72; a few barrels of medium-sized Spies specially packed, each apple packed in tissue paper and the barrel padded with brown paper, brought \$8.10; Mann apple brought \$5.54; A. G. Russet, \$4.94 and \$5.30; King of Tompkins County, \$4.56; Ribston Pippin, \$4.28 to \$5.34; Æsopus Spitzenburg, \$5.13; Wagener, \$4.72; Fameuse, \$2.30 to \$3.81; Swaar, \$3; Bourassa, \$6.40; Grimes' Golden, \$8.56; Rambo, \$1.96; Tallman Sweet, \$1.84 to \$2.05; Ben Davis, \$5.77; Roxbury Russet, \$4.57 and \$5; Red Canada, \$4.83; Norton's Melon, \$2.60 (doubtless this was bruised badly in transit); Belmont, \$3.20; Peck's Pleasant, \$3; Yellow Bellflower, \$2.88; Dominic, \$2.60; Blenheim Orange, \$4.81; Fallawater, \$1.83, and Montreal Pomme Grise, \$8.61 to \$9.13.

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Our fruit was carefully selected, so as to give only the best of each kind, clean and free from worms. In packing, two layers were first put down carefully, stem end down, and then filled in, shaking the barrel after every basketful was emptied in. The top was finished in the same way as the bottom was commenced, and then pressed down tight, and the bottom branded, so that when opened those laid in would appear nice and regular. Where fine samples can be got, it will pay to wrap up in tissue paper and pack carefully, filling all spaces with kiln-dried chaff, and topping off the barrel with a wad of fine swamp hay to press upon. All the fruit was shipped and arrived in Liverpool and Glasgow in good condition, excepting that some were bruised a little. Yellow Bellflower is a very bad shipper on this account; the slightest bruise shows a black spot which unfits it for market. Taking everything into consideration, the Baldwin and Wagener pay better than any two other varieties on the list. Both ship well; they generally average the correct size for the British market, for there they want only a dessert fruit; and the trees come into bearing early and bear regularly large crops. And yet as an eating apple, on the dessert table, we do not look upon Baldwin as unobjectionable. It is a medium or fair apple in January, but kept till March and later it becomes insipid and woody in flavour—indeed at any time the woody coarseness of the Baldwin is noticeable. When it comes down to a matter of excellence of character, our ideal for a dessert apple of this class is *Æsopus Spitzenburg*; there is no discount upon it in intrinsic value; on the value scale we would give it the maximum point. Although *Bourassa* brought such a good price last year, we would not advise growers to plant it for future value. It is a good apple when taken at maturity, but when kept becomes leathery and loses its fine fruity flavour. At present they do not know apples in Britain, and cannot appreciate high character sufficiently well to give us a scale of prices based largely upon character. As matters are now, we would not fear loss by shipping some fine high-coloured medium-sized seedling of worthless character; it would sell well on account of appearance; but of course it would never pay any shipper to indulge in such trials, as his character would suffer eventually, and his brand be looked upon with much suspicion.

Crab apples are cultivated freely all over the district, and this year's crop is like that of every year—good. There is always an overplus of this fruit which has hitherto gone to waste, or fed to the cattle and hogs. Last year, however, they were shipped to Chicago from Owen Sound and Kincardine, and brought good prices. One shipper at Owen Sound is making ready for a large shipment again this season. *Montreal Beauty*, *Hyslop*, and *Transcendent* are generally preferred for preserving whole, and the *Yellow Siberian* makes fine jelly. Blight affects the *Montreal Beauty*, *Transcendent*, and *Siberian* trees badly this year; in some instances we have seen the main limbs cut down to the trunk. Twig blight has been bad among apple trees, more especially the *R. I. Greening*. The codlin moth has been worse this season than for years, scarcely a *Greening*, *Keswick Codlin*, or *Baldwin* escaping its vigilance in some parts of the district. It is a pity that fruit-growers would not rise in their might and fight all the enemies to fruit culture; larger and finer crops could thus be obtained. But this text has been preached upon until it is threadbare, without effect. The disposition is to plant trees, and afterwards to let them take care of themselves. Growers will look for a crop yearly from an orchard that never gets cultivation or feeding of any kind. This is just the state of affairs that tends to induce disease and insect enemies. Our fruit-bearing trees should be cared for as regularly, with the proper foods necessary in the soil to produce the crop required, as surely as our fields are cultivated and fed to produce each kind of grain and roots.

Forestry will in a few years be one of our most interesting subjects. The original forest in Ontario is fast disappearing, and timber is becoming scarce. This season's fires have done more to force this subject upon the attention of the public than all the writing and discussion hitherto. Farmers are beginning to look at it as a matter of dollars and cents. It is generally conceded that farmers in Ontario cannot long compete with those in the Prairie Province in wheat-growing. Our attention must be turned to something else. What will that be? Doubtless fruit-growing will be some day one of the chief features of this Province, and cattle-grazing another. Forestry should be a third, and, when looked into carefully, no doubt but it will. Taken as a matter of crop, it is easily

seen by a rough calculation that large profits can be realized. Take, for example, the larch, which is a rapid grower, and in the course of a few years would be matured sufficiently to make railway ties. The elm also and the ash will grow in ten years large enough to be useful for manufacturing into the parts of implements they are largely used in; and so on with other kinds. Black walnut is very scarce, and in the course of thirty years would command a very high price, although it would be fit for many uses long before that. Beech, butternut, and cherry also are free growers, and soon mature sufficiently for use. At present there is a fair supply of many woods most commonly used in this district, but it is easily seen that soon that supply must be cut off. Already even the item of firewood is becoming serious, compared to thirty or even ten years ago. We pay \$3 per cord now for a poorer quality of wood than we got thirty years ago for \$1.25 to \$1.50. The subject of forestry commends itself to the serious consideration of the tillers of the soil, and we do hope the subject will be taken up in earnest soon and practically illustrated.

ALEX. McD. ALLAN.

Goderich, September, 1881.

THE WINTER MEETING

was held in the City Hall, Hamilton, on Tuesday and Wednesday, the 19th and 20th of January, 1881. There was a large attendance of members, and much interest manifested in the discussions.

President Dempsey called the meeting to order in a few well-chosen words of cordial salutation. The Secretary read the minutes of previous meetings, which were approved.

Mr. P. E. BUCKE presented the Report of the Committee on Fences:—

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

Your Committee on Fences, having examined into the subject, have the honour to report—

1. That the existing laws regarding fences are unjust to the landowner and occupier, because if he has no need for a fence around his farm society should not compel him to build one.

2. That if a farmer chooses to "soil" his cattle he should not be compelled to expend on fences a tax, estimated at \$2 per acre per annum, to keep his neighbour's or highway cattle off his property.

3. That no law should compel a land occupier to make a road or division fence to protect himself from the public at large; that the public are just as much interested in the welfare of the State as are the individuals of the public. These last, therefore, should be protected by a public law compelling individuals to enclose their own stock.

4. That although the public have a right to travel on the roads, they have no right to use said roads for a cattle run or a pasture ground.

5. That every farmer or property owner, either by paying taxes for road construction or repairs, or by the performance of statute labour, have a certain vested right in the roads surrounding his lands; and in newly-settled townships, or townships being less than half cleared, a majority of owners might say whether the public roads should be used for any other purpose than the legitimate travel, or driving of stock, when required, along them.

6. That during winter these roads are fenced in such a way that they harbour snow-drifts, thus blocking, to a considerable extent, the travel along them.

7. That the maintenance of fences is an excessive burden on the farmer now that timber is becoming scarce and dear, and it behoves the Legislature to make such provisions by law as will assist in doing away with such an oppressive expense.

8. That in the early settlement of this country, when cultivated lands were scarce, and there were no pasture lands for cattle, it was in the interest of individuals to fence in their crops and allow the cattle to run at large; now the case is different; the principal

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part of the country is cultivated, and the pasture and waste places are in the minority ; these therefore may be fenced, and not the larger tract of farm lands.

9. Therefore, your Committee, taking into consideration the above facts, respectfully suggest that in counties where a majority of the acreage of the soil is arable land, all cattle, horses, pigs, sheep, and geese be prevented by legislative enactment from running at large ; that owners of all kinds of stock should be compelled to keep them enclosed, or pay all damages that may accrue from their depredations ; that it may be the duty of any one finding cattle straying along the roads, streets, or any unfenced lot, when not accompanied by a suitable attendant in such county, to drive the same to pound ; that for every head of cattle so pounded the individual who owns such stock shall pay to the pound keeper, over and above all other fees or charges, the sum of 50 cents per head, to be paid to the individual who puts them in pound ; that all damages to trees by animals be assessed at the full damage done, having in consideration the age of the said trees and the number of years planted ; that such damage be paid by owner of said stock to the owner of said trees ; that suitable attendants be employed when cattle are being driven to market, or from one part of the country to another, so as to keep them from straying off the road ; that any one turning off the road into a neighbouring field, either on foot, in a vehicle, or on horseback, shall be liable to be apprehended as a common trespasser, and as such be amenable to the law in such cases made and provided.

Respectfully submitted,

P. E. BUCKE.
THOS. BEALL.

MR. BEADLE.—There is much in that report that I like ; I think it has the right ring in it. I am glad that our friends who have had charge of that matter have been able to see it in that light. There is one point, however, in regard to which I think the report is deficient. I take the liberty of saying so because I think that the Committee have failed to do as much good as we hoped they would when we put the matter in their hands. They have failed to give us any arguments, any facts, any statistics, or anything of that sort, to back up their report. Now, while I agree with all those articles in the main that they have given us, I think it would contribute very much to the value of that report if, when it goes abroad in our Annual Report, it contained some facts, some estimates, set forth in such a shape that our farmers, when they read them, should understand for themselves that what is stated therein is trustworthy. Now, I do not believe there is one farmer in the section in which I live—and I am pretty well acquainted with them—who has the slightest idea what tax he is paying in the way of fences.

MR. BUCKE.—We state two dollars per annum.

MR. BEADLE.—You state it as a fact, but you do not show it. I should like now, if the matter could be referred back to that Committee, to add to the report some arguments and facts and propositions that would demonstrate the truth of that calculation. I do not doubt or deny them—but what I should like would be this, that each farmer, as he took up that report and read it through, should be led to say, "Well, now, I had no idea I was paying such an amount of taxes as that to keep up a lot of fences." In the first place, the farms in our country are cut up, I think, with cross-fences to an absurd degree. I do not think our farmers know what a tax it is upon them to have a field for cattle here, one for sheep there, one for wheat yonder, and another for grass here ; nor what it costs them to have land occupied by fences which they might use for tillage ; nor what the wear and tear of the fences amount to, to say nothing about the first cost. What I would like that report to show would be some facts and arguments by which a man might calculate that so many acres of that farm are occupied by private fences ; what the cost of such a length of fence is on the average ; what its cost if it is a rail fence ; what its cost if it is a post and board fence ; and what its cost is in wear and tear. These are facts that can be got at, and if we are going to influence public opinion so that it will do away with these fences and throw our country open, so that it will look like one grand garden—look more as the country looks in some other parts of the world—we have got to convince the people that it is to their interest that this should be done. If any of the gentlemen here to-day have ever been in the County of Monroe, in the State of New York, or in the

neighbourhood of Geneva—along through that part of western New York—and have seen how much more beautiful the country looks stripped of these rail fences—crops growing right up to the roadside, so that you drive, as it were, right through fields of wheat—I think if they could once see the country looking like that, they would never want to go back to the old rail fences, or fences of any kind. I am told that these farmers have become so thoroughly convinced that it is to their advantage to have these fences all taken away, that those who make a special business of stock-raising and sheep-raising keep temporary hurdles, in which they enclose a piece of ground, and when the animals have eaten the pasture off this they move the hurdles to another place; so that they can keep up their alternations of crop, clover, grass, wheat, corn, etc., while at the same time they have their whole farm to cultivate. All they have to do when they wish to move their hurdles is to throw them on a waggon—they are very light, and are set up again very quickly. I was over last autumn in Cattaraugus County. I had occasion to drive the whole length of it, and I won't say that I did not see a fence—I did—but the people were fast taking them away. Here and there a pretty, substantial fence had been left; but where the fence had got at all rickety it had been taken away. The roadside was almost entirely clear of fences; and I could not help but think, "How beautiful a country this will be to people driving through it a few years hence, when these fences are all gone!" They have planted shade trees along their roads very extensively. I saw acres and acres of vineyards, not a fence about them, coming right up to the road; you seemed to be driving through a vineyard—grapes on the right side and grapes on the left. I would like to see this improvement widely adopted in our own country. I feel that we are behind the age in this matter—our neighbours have got the start of us. I know that if any of the gentlemen present here to-day were looking for a place in which to settle, and went into a country looking like that, it would have a charm for them that this country does not possess. They would give a preference to a country looking like that, in which there is no expense incurred in keeping up fences, but the whole landscape presents the appearance of one grand garden. I do not know whether any confusion ever arises from the want of landmarks; that was the only thought that occurred to me in regard to a possible difficulty in the matter. I move, That the Committee be requested to supplement their valuable report with some arguments and facts going to show why they have come to these conclusions.

MR. A. M. SMITH seconds the motion.

MR. BUCKE.—In the older countries of Europe—in Spain, France, and Italy—very few fences are to be found. I dare say that state of things has existed for a long time—no doubt since the wood has been taken away. I do not think we want to go into this thing quite so minutely as our respected Secretary suggests. I think the thing is so patent to everybody that the report will carry weight in the shape in which it is. The fact of the fences being so expensive is all, I think, that is necessary to be suggested to the public in order to get them to adopt it. The only thing that would, perhaps, assist the change would be a permissive Act, under which the people would not be required to put up fences if they did not wish to have them.

MR. BEALL.—I think the remarks made by our friend Mr. Beadle are quite correct; I believe that much good could be done by taking the step suggested by him.

MR. GILCHRIST.—This matter has been taken up in our own country by the people of the North-West, where they have a law now prohibiting the running at large of cattle. I was conversing with a young man from Pembina lately, and he tells me that people combine in employing a man to take care of their cattle—fences have become so costly there that they have to do that. The expense of a man to take care of the cattle is about fourteen dollars a month. Fencing is an institution we have inherited from the old country, where they occupy a great deal of land that might be made use of for a better purpose.

The motion is put and carried.

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QUESTIONS.

1. What new or little known varieties of apples have been introduced, and which of them promise to be of value?

MR. BEALL read the following paper, prefacing it with the remark that it is not strictly in accordance with the letter of the text.

BY WHAT STANDARD SHALL WE TEST NEW VARIETIES?

The first question on the list for consideration is:—"What new or little-known varieties of apples have been introduced, and which of them promise to be of value?"

In the present stage of apple culture in this Province, the latter portion of the question appears to my mind the most important, or rather it would be so if it read, "And which of these promise to be of *greater value* than those now generally cultivated?" for I can see no good result likely to arise from the introduction of new varieties simply because they are new. For unless they excel in some particular some of the kinds already grown, nothing is gained by their introduction. But how are we to compare them? I am not aware that we have any published standard of excellence, either of taste or of commercial value, and I would earnestly recommend the establishment and publication of such a standard without delay, for, in my opinion, this Association could not do any one thing which would more commend itself to the fruit-growers of Ontario, and also to those who desire to grow apples, than to establish such a standard as indicated. Besides those who are at present engaged in apple culture, there are thousands of people throughout our country who are desirous of planting apple trees if they could do so with any reasonable hope of success. But when they see so many of their neighbours who have spent much time and money in apple culture, and who have only succeeded in growing perhaps one tree out of every ten planted, and that one possibly some worthless non-descript variety, it is no wonder such persons abstain from planting. Yet they know that good apples are grown in their vicinity, but when they endeavour to learn the names of the kinds grown by their neighbours so as to obtain trees of the same sort, they are generally as much in the dark as before, because upon enquiry they find that the fruit, although good, does not resemble any of the kinds purchased by the owner. Or possibly his neighbours will give him half a dozen different names for the same variety. Who can be surprised, then, that the anxious enquirer after knowledge respecting apple tree culture should abandon his project in disgust? If such persons could turn to some acknowledged reliable authority, and there ascertain with a fair prospect of certainty what kinds can be successfully grown in their several localities, they would at once send their orders for such trees, and would not feel, as many do at the present time, that to grow sufficient apples, even for the use of their own family, it becomes necessary either to plant and cultivate a large portion of their land as an experimental fruit garden, or to rely entirely upon the veracity and the tender conscience of the ubiquitous tree-pedler.

There can be little doubt, therefore, of the necessity of some plan being adopted whereby the various kinds of apples may be compared with each other, so that the comparative value of any variety may be correctly ascertained for any given locality. A person desirous of planting would then be enabled to know what kinds to plant with a reasonable hope of reward for the labour and means expended. To accomplish this object, I would suggest that a catalogue of all ascertained varieties of apples grown in this Province be prepared, similar to that published by the State Pomological Society of Michigan, but adopting only the headings of the first ten columns and the last one, and substituting for those relating to locality those in the following sheet, and also that such a catalogue be prepared at once and published in the next Annual Report, and also—after a careful yearly revision—in each subsequent Report:—

APPLES: CATALOGUE.

Number.	NAME.	DESCRIPTION.						USE & VALUE SCALE 1 to 10.			PRODUCTIVENESS IN PERIODS OF 5 YEARS FROM TIME OF SETTING OUT.				REMARKS.		
		Size.	Form.	Colour.	Quality.	Season.	Origin.	Dessert.	Cooking.	Market.	First year fruiting after setting out.	Total quantity got 1st five years.	Average per year for 2nd five years.	Average per year for 3rd five years.		Average per year after 15 years.	
52	Duchess of Oldenburgh	L	r. o.	y. r.	v. g.	August	Russia.	6	9	10	2nd	1.0	2.0	4.0	.....	cks 60	Strong, healthy trees.
206	Tetofsky	m.	r. o. c.	y.	g.	"	"	5	6	.....	2nd	1.5	2.0	.....	.....	40	Strong, healthy trees.
166	Red Astrachan	m. l.	r.	c. y.	g.	"	"	7	9	10	5th	.5	1.0	2.0	.....	75	Fairly healthy.
188	St. Lawrence	L	ob. c.	y. c.	v. g.	Sept., Oct.	Quebec.	8	9	10	6th	.....	1.5	3.0	.....	50	Very healthy.
67	Snow	m.	r. ob.	g. y. r.	g.	Oct., Dec.	"	9	4	8	5th	.....	2.0	4.0	.....	40	Doubtful.
235	Yellow Bellflower	v. l.	o. c.	y. r.	v. g.	Dec., Mar.	N. J.	8	10	9	6th	.....	.5	1.0	.....	60	Very healthy.
79	Golden Russet	m. r.	r. ob.	z. ru.	v. g.	Dec., May	Eng.	8	5	10	5th	.....	2.0	4.0	.....	75	Healthy, but very liable to bark lice.
198	Summer Rose	r.	r.	z. r.	g.	August	N. J.	8	6	6	5th	.....	.5	1.0	.....	65	Not hardy.

It may here be observed that the varieties just named are those which succeed best in the immediate vicinity of Lindsay, with the exception of the Summer Rose, which was inserted to show its low commercial value as compared with others.

Now, to find out if a new variety promises to be valuable in any neighbourhood, the information relating thereto, similar to that contained in one line of this catalogue, will be required; and this information compared with that contained in the catalogue, referring to some apple of the same "season." To illustrate my meaning, we will compare the Yellow Bellflower with the Golden Russet. We find their "season" to be the same—nearly. Both are classed as "very good;" both rated alike for "dessert;" for "cooking" the Bellflower stands 10 and the Russet 5; for "market" they are nearly alike. So far, then, the Bellflower must be preferred. But let us follow the comparison to the end. Both kinds commence to bear about the same time, but neither of them within five years. From the fifth to the tenth year we find the Bellflower credited with half a bushel of fruit per year, while the Russet has averaged two bushels. Then, from the tenth to the fifteenth year the average yearly product of the Bellflower is one bushel, while that of the Russet is four bushels. Now, let us sum up the two lines and see how they compare with each other. We find the trees to be equally healthy; the fruit is equal for "dessert," but the Bellflower is as two to one for "cooking." Their "season" is nearly the same; they commence to bear about the same time. So far, then, there is not much difference between them. But let us see which is the more profitable of the two. At the end of fifteen years from the time of setting out, we find that we have gathered from the Bellflower a total of $7\frac{1}{2}$ bushels of fruit, which may have been sold at 60 cts. per bushel, thus realizing \$4.50, while from the Russet tree we get, for the same period, a total of 30 bushels, at 75 cts., or \$22.50. Therefore, while the Bellflower, from its superior excellence as a dessert and cooking apple, will merit a place in any orchard planted for home use, no one would think of growing it for profit in this locality.

The results may and doubtless can be shown to be very different in different places, but this will only be another proof of desirableness of having some means whereby an authoritative standard for taste, and also for profit, may easily be obtained for the apple for any given locality.

T. B.

MR. BUCKE—I move the thanks of the meeting to Mr. Beall for his excellent paper and more excellent suggestions. I have thought over this matter considerably myself. When reading over the Michigan Pomological Report, I have always thought it was the very thing to adopt in Canada, and I am very much obliged to Mr. Beall for bringing the matter before this meeting the way he has. I have much pleasure in moving "That the thanks of this meeting be tendered to Mr. Beall for his excellent paper, and that it be received and published in our Annual Report."

MR. PETTIT seconded the motion.

MR. BEADLE.—There are some suggestions contained in that paper which come within the province of the Directors to consider and carry out in their discretion; and it strikes me, as a member of this Association, that they should be requested to take them into their consideration. The suggestions are well worthy of it.

THE PRESIDENT—I fully agree with the suggestion.

The motion was carried.

THE PRESIDENT.—Some of these suggestions that Mr. Beall has made remind me of the English system of doing business of that kind. They call it an election of varieties, and they apply it to fruits, flowers, or anything of which they wish to understand what varieties are succeeding best in different sections of the country. In carrying out the plan they simply prepare a list of the varieties grown in the country—the leading varieties, or all of them as they choose. This list is sent to the different persons producing those varieties, and they are authorized to vote on so many of them. In the document there is a column for voting and one for remarks. When all the lists are returned to the Secretary, it is quite an easy matter for him to decide which variety is the most popular among the voters.

MR. BEADLE.—One apple which has been introduced into this country recently, and which I believe is going to take a stand amongst us by-and-by, is a very valuable apple—

and with the introduction of which to general notice this Association had something to do—it is Grimes' Golden Pippin. I find it to be a fact that it will grow in Lindsay to a very great size, and have its flavour very well developed in that climate; and I infer, if it will grow there, that it will grow throughout the larger part of our Province. Although until a short time ago I had not had the pleasure of tasting the fruit as grown in the Lindsay district, I had tasted it as grown in the Niagara district, and had eaten it as grown in London, and in one or two other districts, and had found it a very fine-flavoured apple indeed. We speak of the Newtown Pippin as a very good apple; but I believe if our English cousins got hold of a barrel of Grimes' Golden Pippin, they would soon settle on it in preference to the Newtown Pippin. I think, too, that in its size it suits the want of the English market better than the Newtown Pippin. As I understand it, our English cousins are not particularly fond of a large apple: they prefer an apple of about the average size of Grimes' Golden Pippin. The only thing I can see about that apple which makes me a little doubtful as to how soon it may find its way to the table of the wealthy, and of connoisseurs in Europe, is its want of a bright colour. A ruddy cheek or a skin splashed with red would add very much to its appearance. The Newtown Pippin, however, is quite green-looking when sent to market. There is sometimes a little blush on one side of it, but usually it has very little colour. I believe, therefore, that this apple is going to take a high rank among us. Old members of this Association must have the apple by this time in fruit; for the tree was distributed to them some years ago, and I believe it has proved hardy enough for a large part of the country. From my correspondence with persons in Nova Scotia, I find that it is very highly spoken of as a fruit adapted to that locality, and one which promises to maintain its high flavour.

The PRESIDENT.—Are there any other new varieties that you have tried or seen tested that are promising—the Wealthy, for instance?

MR. BEADLE.—I can merely say that I have seen it. I could not say much of its quality. I believe, however, that the Wealthy apple is going to be a very valuable fruit for extremely cold climates. It seems to be one of the apples that bear the rigours of our northern winter very well. The fruit is of good size and of handsome appearance, and my impression so far is that it is an apple of good quality, not, however, to be compared with Grimes' Golden Pippin. For our extremely cold sections, I consider it an almost invaluable fruit. I have seen and tested the Walbridge, another hardy fruit, that I think favourably of. My impression is that it will not prove to be a long keeper, though I know that the climate in which a fruit is grown has much to do with its length of keep. Grown in our district I would not expect fruit to keep so long as when grown in Lanark, Dundas county, or about Ottawa. While, therefore, I judge that this fruit when grown among us would not keep as long as we would like, yet I think it may turn out that it will keep sufficiently long when grown farther to the north. It is one of the extremely hardy varieties.

MR. HOLTON.—The question as to the value of new varieties of fruits, from different sections of the country, is one of very great importance. What is of great value here in the milder parts, probably would not be of very much value when grown farther north. I cannot say that I have had very much experience with the different hardy varieties. The Walbridge fruited with me this year for the first time. The apples ripened about November; unfortunately they were all stung; but they seemed to me to be apples that would keep well. The average size was about that of a Greening, and the colour one which would probably be very favourably viewed in the market. As to their flavour I can say nothing. An apple that I have had fruiting with me for a number of years, and which I look upon as a very valuable sort for the milder portions of Canada, is the Ohio Nonpareil. It is not perhaps a very new apple, but is new here. I have never seen it at any of our exhibitions; it is an apple that resembles the Gravenstein; it ripens about the 1st of November. The tree is a strong, vigorous grower—evidently will make a large orchard tree wherever the climate will allow it to stand without injury. I have no doubt the apple will be a very valuable one. I have known Grimes' Golden for many years, and I know no other apple better adapted to dessert or family use than it. There is one drawback to it, however, and that is the habit of shrivelling a good deal. It may be that my cellar is not perhaps cool enough, or I may have got them picked rather early; I cannot

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say that the defect is inherent in the fruit. If this objection can be removed, and if it was only owing to my method of keeping the fruit, that should be known, because if the apple can be kept firm it is certainly a very valuable one.

THE PRESIDENT.—About what is the temperature of your cellar?

MR. HOLTON.—It is about 40°.

MR. GILCHRIST.—I think it is well to know if any apples imported from England or Scotland do not succeed as well as our native apples. My brother sent me some scions from Scotland, and I have fruited one, the St. David. It is very prolific, and mine grew the second year from the graft. It is an inferior apple; as far as I have tasted it, I think it is unworthy of cultivation. I have given grafts to several people in the neighbourhood, and they have all said it is unworthy. It cooks well enough; but it has no quality.

MR. CROIL.—Any apple that would bear well on the Clyde ought to bear trebly well here; for my experience there was that the trees looked very miserable and very unhealthy, all moss-covered and stunted, and no crop on them. The Mackintosh Red is grown in our neighbourhood. I have a great many trees planted, but they have not borne much; the tree is well spoken of, however. I see that in Hoskins' last Montreal report it is compared with the Wealthy, and the preference is given to the Mackintosh. I have seen the original tree; they call it seventy years old, and it is still bearing, and I think myself the apple is good. I brought it up here three years ago, and it was set down as third-class. We were quite content with that, because an apple that would pass here as third-class we would place first-class—we are not able to grow as good apples as you.

MR. BEALE.—Is it an early bearer?

MR. CROIL.—No, I cannot say that it is—not in my own experience; but it is a regular bearer, I believe, and very hardy; a good keeper; in season I suppose till March.

MR. BUCKE.—I got the Grimes' Golden from the Association some years ago; but, although it has grown very well, it has never borne. I, however, grafted a tree from it, and from that I have had three crops. The tree is not a very large one. My apples are the same shape and size as a Grimes' Golden Pippin which I have seen exhibited here to-day, but quite russety; I was astonished to see the apple shown here so smooth in the skin; I cannot understand mine being so different, because the tree came from the Association; the colour is more golden than that of the apple shown here. I think, perhaps, there may be some mistake.

MR. BEADLE.—A little while ago I said that our cousins in England wanted medium-sized fruit; in order to support my position in that respect I will read what is quoted in the *Canadian Horticulturist*, page 160, as having been said by Mr. Cochrane, a large dealer in Liverpool, in his apple circular, which he has been sending to me regularly. Under date of October 9th he says, "Small, handsome fruit is preferred to large, and meets the want of a better class of buyers"—meaning men who will pay more for their apples.

MR. GILCHRIST.—I may state that in the old country apples are principally sold by the pound for using on the table, and that is the reason they want a showy, medium-sized apple. We know that we can better make a pound of medium-sized than of large-sized apples, and a showy apple we can sell better than a large. The showy apple always has the preference in the English market.

MR. HOLTON.—I have had a tree in bearing for three or four years which it may be interesting to people farther north to hear about—I mean the Haas. The fruit has a very high colour, and is a handsome flat apple of good size, as large as a Baldwin probably, but rather flatter. Perhaps at the north it might be considered of great value. It is a free grower, and bears young; but in our neighbourhood here, where we can grow almost all of the high flavours, I should not esteem it so highly for its flavour as some others. Pewaukee, Wealthy, Walbridge, and that class of hardy sorts, where they can be grown, are high-flavoured apples.

MR. BEADLE.—I have been eating the Haas quite freely this last week or two, and I am inclined to call that a pretty good apple; it is certainly a rich apple as it grows in our neighbourhood. These apples that I have been eating did not grow on my own place; one of my neighbours, who only lives a couple of miles from me, whose soil is a clay

loam, brought them to me. They are tart, but mild in flavour; the colour of the flesh is greenish, the juiciness of the apple is fair; I have seen fruit more juicy, but it is not a dry apple. I certainly would rank it almost very good; not best—there are very few apples that come up to best, to take the ordinary pomological rate of ranking—good, very good, best. This apple certainly appears to me to be a little better than what we call good. If it will hold that flavour generally—not only in the northerly, but in the more moderate climates of the Province—I believe that apple will prove to be a very valuable fruit. It appears to keep quite firm; these that I was eating were ripe, but they had been kept in a warm cellar; if they had been kept in a cool cellar they would have been too hard for eating. These apples would keep till spring; they are very handsomely mottled, and striped with red on a yellow ground; the shaded side, when the fruit ripens up, becomes a beautiful golden yellow. I am told the tree is a hardy one, though not the hardiest; of course, in Lincoln county we cannot apply the test of hardiness; I see that in the Minnesota reports they say it is not the hardiest. It cannot be planted in every locality; they have only one that can be planted everywhere, and that is the Duchess of Oldenburg. The Haas apple will, I believe, take a good place in the market.

MR. ARNOLD read the following paper on

NEW VARIETIES OF APPLES.

“Amongst the comparatively new and promising varieties of apples I would place Cox’s Orange Pippin first. The tree is hardy, a moderate grower, an excellent bearer, and the finest flavour of all dessert apples; good from October to January. Second, in my opinion, is Swayzie Pomme Grise. The tree is very hardy, and a good, strong, thrifty grower, a good moderate bearer, and with good cultivation grows to a good size for a dessert apple. The flavour is excellent, and in the opinion of many people its peculiar crispness and juiciness make it equal to Cox. Third on the list for a dessert apple is Arnold’s Beauty. The tree is the best grower of any tree I ever grew in the nursery, and though many people would not consider it equal in flavour to the two above-named varieties, all would admit that in appearance it is quite superior. The tree is so perfectly hardy, and such a constant and heavy bearer, that many would call it the best of all because it would pay the best. Fourth—As an apple for general cultivation and uses, especially for apple pies, I know of no apple superior to Ontario. Its large and uniform size and smoothness will always make it a great favourite in the kitchen, and its annual bearing all over the tree must make it a favourite with the orchardist. The following apples, although not equal to the above varieties, are quite superior to Baldwin and many other old varieties, viz., Grimes’ Golden, Dora, Benoni, Ella, Pomme Royal, Moyle, Centennial Russet, and one large, sweet russet not yet named.”

He said:—I find, in deciding the question of best, that it is generally the apple that pays the best which is considered the best; it is not the one that is the best flavoured, otherwise the Baldwin would have been kicked out of existence years ago.

MR. BEALL.—The Cox’s Orange Pippin, although it may not be considered by some people here a good apple, is accounted in England the *ne plus ultra* of an apple.

THE PRESIDENT.—I have no hesitation in saying I believe it to be the best apple I ever tasted.

MR. ARNOLD.—I never heard two opinions as to the flavour of it; everybody always pronounces it the best. I sent some of them to a friend of mine in London; he said that his children would eat no others while they lasted, and children are usually good judges of apples.

MR. MORRIS.—Of the trees that I have fruited, I think I would place the Wealthy, among the new apples, as the best for Canada; it has many good qualities. In Michigan it is very well thought of. It is an enormous bearer, and yields even when two years old. It is an apple very similar in character to the Fameuse. The Fameuse is another of the new ones that I could recommend. I am speaking now of apples that would class as good in our mild sections; but I think it would pay to plant these in any section. Another one that I would mention would be the Walbridge, a splendid growing tree, with a fine, large red apple—a thorough winter apple. There is another apple called the Stump.

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MR. BEADLE.—That is a Western New York apple.

MR. MORRIS.—Yes. It is similar in appearance and quality to the Sherwood Pippin. I can endorse what has been said about the Haas.

A MEMBER.—Do you fruit all these varieties?

MR. MORRIS.—Yes.

MR. SMITH.—There is another apple that has been recommended by our cousins across the line, which, though not exactly a new apple, I would refer to. I see it now classed by them among their "Ironclads," as they call them—that is, apples which are recommended for their northern climate. We here would not call it a very good apple, although it is a very good keeper; it is called the Mann apple. Some call it the Spring Swaar; it resembles the Swaar in appearance somewhat; it keeps nearly as long as the Roxbury Russet; it is a very good keeper, a good bearer, and is said to be adapted to sections where we cannot grow the Baldwin and Roxbury Russet. If it is as hardy as they claim it is, I think it is a very good apple.

THE PRESIDENT.—I am proud that we have among us to-day at least one fruit-grower from the United States. I have great pleasure in introducing to you Mr. Woodward, of Lockport.

MR. WOODWARD.—We in Western New York do not go very much on new apples; we stick to the old stand-bys that bring us the money. This apple that Mr. Smith speaks of is not to us a new apple; it was brought into the county where I live from Oswego County by a man named Mann. It is an apple that has never been appreciated. It is, however, free from the attack of the codlin moth. It is not a very rapid-growing tree, but it bears very large crops, though it seldom bears every year—it bears every other year. The apples are about the size of a middling-large Greening, which it resembles. It will keep better than a Russet, and has been raised as a cooking apple. It is perhaps as good an eating apple as some others. I have seen the Stump apple, and it is a good one; it ripens about the same time as the Gravenstein; I have never grown it.

MR. BEADLE.—Would the Mann be a profitable one to raise in Western New York?

MR. WOODWARD.—Yes.

MR. BEADLE.—I may state with regard to the Mann apple that it is one of those varieties that begin to bear very early. It often bears in the nursery. But I have never had an opportunity to form an estimate of it. It is not a tart apple; it is almost sweet—not quite sweet. Now, that is an apple that is not to my taste; I like a decided apple. It will keep as long as Mr. Woodward says, and a little longer; I have seen it in July in pretty sound condition. If the tree is as hardy as Mr. Smith says it is, it may prove to be a pretty valuable apple in our northern sections; but it never occurred to me that it would be very well adapted to those sections. There is no beauty in the apple to attract a buyer if sent to market. It looks about as much like a Greening as anything else at the time of the year when apples are marketed, and then when it gets ripe it hardly gets yellow.

MR. WOODWARD.—I never heard it classed, with us, anywhere, as a sweet apple. It is too sour for an eating apple. I would not place it as high as a Greening; but it is the best of the late keepers. It is very tart, and my experience of it is that it is a better cooking apple than any of the Russet class. It is not an attractive apple; it never gets golden in colour; it is like a dull Greening always. It is only valuable as a very late keeper, and in localities where better apples do not succeed so well.

MR. HOLTON.—There is another apple that I would like to mention, a western apple that I have fruited, which, as far as the flavour is concerned, seems to me to be very valuable; that is the Perry Russet. It comes from some part in the west. Though resembling somewhat the Roxbury Russet, it has not a great amount of russet on it. It is a very spicy, nice-flavoured apple, about the size of the Greening. I have only had it top-grafted; if there is any objection to it, it is that it seems to me to be a wretchedly poor bearer.

THE PRESIDENT.—I have tested a very large number of new varieties. In 1871 and 1872 I imported largely of Russian, German, French, English, Irish and Scotch varieties of apples, and out of the whole of them I found no early apple at all equal to the Grand Sultan, a Russian apple that matures with our Early Harvest. I grafted the two on the

same tree, and found them maturing together. The Grand Sultan will yield two bushels to one of the Early Harvest. It is not so good an apple; but it is equal to the Red Astrachan. It is conical in form, a whitish yellow apple, splashed and striped with red, making it a very pretty fruit, looking almost like wax. It produces a full crop every year, the tree bending under its load of fruit. Another variety is the Grand Duke Constantine. I was considerably disappointed with this apple, although the English people recommended it very highly. I have never yet seen anything in the form of an apple so pretty; but it is exceedingly difficult to grow here. The ends of the branches freeze during the winter, and then decay. It is a very slow-growing tree. The next variety is an English apple called the Cellini, a very pretty apple, conical in form, considerably above medium size—I may safely say prettier than any other apple of its season. It is a little later than the Duchess of Oldenburg. It is a keeping apple. To my taste it is a very fine fruit. The tree is pretty hardy; a good fair grower—rather a pretty grower, and very prolific. Next in turn would come Cox's Orange Pippin. With me it is an alternate bearer. The fruit hangs down on the branches, something like strings of onions braided up; and when we come to select the apples for market, we find nothing to reject. They are almost uniform in size. They run the evenest of any apple I have ever cultivated yet. These would be the main varieties of I do not know how many that I have tried, but a great many varieties at all events. They are the only varieties I have tried which are worthy of cultivation.

MR. ARNOLD.—Are you placing these apples in their order of merit?

The PRESIDENT.—No; order in regard to maturing. There is another apple that I should have spoken of, that is, the Sturmur Pippin, an English apple. It is a yellow fruit, rather flattish, with a greenish brown cheek to it, about the size of an ordinary Roxbury Russet, and about the shape of it. It will keep almost any length of time. They claim in England that it will keep two years. At all events, we have no difficulty in keeping it till July. It has a sharp, clear, acid flavour. In the summer, when it is hot, that is an apple a person would relish; but at this season of the year you would not want to taste it a second time.

MR. MORRIS.—There is an apple grown in our township which I do not think I have seen grown in any other section. I believe it is a local apple which was first put out by a small nurseryman there, Mr. Taylor, who was in the habit of picking up seedlings and cultivating them, and this one turned out to be very valuable. In our section we think there is more money in it than in any other apple grown there. It bears a heavy crop every year right along, and lately—during, probably, the last six or eight years—it has brought a higher price than any other apple among us, although in quality it is ranked as second or third-rate. The demand for it is caused by its superior shipping and long-keeping qualities. Montreal buyers claim it will ship to hot countries and stand longer voyages than any other apple they can get. Many of them are anxious to purchase the crops of this apple for years in advance, while those who have it will hold it back and sell their other fruit first. It goes by the name of the American Pippin.

A MEMBER.—I would ask Mr. Morris if it is not a nearly sweet apple?

MR. MORRIS.—Yes.

MR. BUCKE.—We have had a Russet before us several years; perhaps Mr. Holton may know something about it.

MR. HOLTON.—It is a Russet introduced by Mr. Bragg, I think. I have seen the apple, but I have had no experience of its keeping qualities. He is always representing it to me, however, as a long-keeping apple. I think it is about as large as the Roxbury Russet. I cannot speak myself as to the quality of the fruit. There was a committee appointed, I think, to examine and report on that apple.

MR. ARNOLD.—Mr. President, do you remember an apple exhibited at Philadelphia, a Russet apple which was awarded a medal, which came from the London District, and was named by some, "The Centennial Russet?" I think it was Mr. Saunders sent me some grafts of it, and from my experience of one year's fruit, I have no hesitation in saying it is one of the finest apples I ever saw. It fruited the first year. I had not many of them. It has a fine ruddy cheek.

The PRESIDENT.—I do not remember it. We have quite a number of native seedling

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apples that promise to succeed well; but there are other superior varieties already in cultivation that come at the same time, and I would not think it wisdom to multiply the varieties.

MR. BEADLE.—Respecting those apples whose names have been mentioned to-day, I think that for commercial purposes no person would need more than half a dozen, or about that number, of varieties. Now, I should like to know which half-dozen of those that have been mentioned I ought to grow, and which of those that I am growing I ought to abandon. I cannot see the necessity of introducing new apples if they are not superior to the older varieties.

The PRESIDENT.—I do not understand that the intention, in the discussion of this subject, is the introduction of new varieties. We are considering it simply in order that we may have an opportunity of exchanging experiences, and by that means be able to arrive at some idea as to what kinds are most likely to succeed in different sections of the country.

MR. ARNOLD.—That is a matter of opinion. The Baldwin is a good shipping apple, and a good keeping apple; but there are many better, and it is unlikely that it will ever come into constant use. Even Grimes' Golden would not succeed with everybody; but if they would succeed with everybody as they do with me, I am satisfied everybody would get a tree of that variety for the use of his own family, if for nothing else. Cox's Orange Pippin is a favourite apple in England; everybody there praises it.

The meeting adjourned till half past one, when

MR. ARNOLD read a paper on

NEW OR LITTLE KNOWN VARIETIES OF PEARS.

The most promising of all the new pears that I know of is the Goodale. This pear originated in the State of Maine. The tree is a very thrifty, upright grower, and, I am inclined to think, more hardy than any other good pear. The fruit is very large and beautiful, and the flavour is very good, and with me there is a good crop of fruit every year; its season of ripening is last of September to 1st of November. It is a much better shipping and keeping pear than the Bartlett. The only other new and valuable pear that I shall mention is Negley. This variety is an excellent grower, and quite hardy on pear or quince stock. A good bearer, and, in my opinion, the most beautiful pear grown. Season of ripening, September.

MR. WOODWARD.—You would not call the Goodale a new variety of pear, would you?

MR. ARNOLD.—Our subject is "New or Little Known Varieties." I do not know of any newer. I think it would be called a new or little known variety. The fruit has not been exhibited more than two years in Canada to my knowledge.

The PRESIDENT.—I do not remember seeing it at our exhibitions until last year.

MR. BEADLE.—It has been in the country, I suppose, ten years, and yet I do not believe there are a hundred people who have fruited it.

MR. ARNOLD.—I do not think you could say a hundred.

MR. HIRAM SMITH.—I fruited the Goodale this year, and am very much pleased with it, the first year of fruiting. I have fruited the Brockworth Park three or four years, and it has disappointed me; it resembles the Bartlett—it is not so large, but is a very sweet pear. I see there is great doubt expressed on the other side about it being a new variety. The tree is peculiar in having a very rough bark; it is hardy—almost every pear is hardy with us here.

MR. ARNOLD.—It is the most tender pear I have ever had anything to do with; it kills down to the ground almost every winter.

MR. BUCKE.—The Beurre d'Anjou pear was sent out by the Fruit Growers' Association, I think, some six years ago. My tree is alive, but it has never borne, and I never expect it to bear. I have several pear trees living, but I have never had a pear on them, and never expect to.

MR. MORRIS.—I have had one about six years called the President Drouard, a winter pear, and I would recommend it particularly for its freeness from blight and the good quality of the pear as well. During that time I have not seen insects or blight, either on the leaf or the tree, while even the Duchess alongside of it has shown signs of blight. It is

the least subject to blight of any pear tree I have grown, unless it is the Kieffer's Hybrid—of course I have not had that long enough to judge.

MR. WOODWARD.—I grow only the Duchess, and I do not experiment very much with the new varieties. The Goodale pear I am very much pleased with. I had the pleasure of meeting Mr. Goodale this winter, and talking with him; he is not the originator of that pear, I believe, but the disseminator—that is the way it came by his name. It bears a very good reputation in Maine, and is grown in large quantities there; perhaps there is no pear in Maine that their open market is more fully supplied with than the Goodale, and it brings a very good price. In New York we like it very much.

The PRESIDENT.—I do not understand that you are trying new fruits.

MR. WOODWARD.—No; I am growing fruit for money, and when you are growing fruit for money you cannot experiment very much. I do not live on my farm myself; I have my nephew on it, and it is about all he can do to look after the general farm and the old-established fruits. We do experiment on one sometimes.

MR. BEALL.—I was foolish enough some eight or ten years ago to experiment with perhaps thirty varieties of pears, and every variety failed with me except the Flemish Beauty; that, I am glad to say, succeeds well—so much so, that I have at present perhaps twenty-five or thirty trees, and expect to have more. In the neighbourhood in which I live the Clapp's Favourite is doing, I think, just as well, and will succeed just as well.

MR. A. M. SMITH.—I do not know anything about new pears, but I have some twenty-two different kinds of that fruit. This last spring there was a late frost, which had the effect of killing two of my trees—that is, the tops of them; one was Clapp's Favourite, and the other was the Sheldon. So far as Bartlett is concerned, we have lost several of them with the blight; all the rest of the trees have escaped. As for the Flemish Beauty, I have never seen the blight or anything else touch it yet. All the trees of that variety have done exceedingly well; the two that I have mentioned are the only ones I had any trouble with, and I am certain that in those cases the difficulty was owing to the late frost just at the time they were budding.

MR. BUCKE.—The Flemish Beauty at the Asylum at London is still free from blight, although almost all the other trees have been touched with it.

The PRESIDENT.—I have attempted to fruit more pears than I have ever fruited. A few years ago I imported 200 varieties of pears, and I would have felt very thankful if I had succeeded in getting ten out of them. I have fruited the Souvenir du Congrès, but the tree is so tender we cannot depend on it. I have also fruited the Beurre de l'Assomption, and it is likewise tender. In fact, that has been the case with every variety we have imported from France. A large list of Andre Leroy's varieties which I imported were perfect failures; they would not stand our climate at all. We imported a few varieties from Belgium, among the rest the General Todleben, which is a very fine pear, and has a very fine shape also, only it looks as if it had a suture down the side; the stem is an enormous length, sometimes three inches. The pear ripens in the end of November or the beginning of December, and it appears to be prolific. Most of our new pears have just proved perfect failures. The Brockworth Park is with me perfectly tender; it has frozen every winter almost since I have been trying to grow it; I could not recommend anybody to experiment with it. Indeed, there is scarcely any new variety of pear that I would recommend. As I have said before, there are only three or four varieties of pears that I consider worthy of cultivation in Canada, and the Flemish Beauty is one of the first ones I would cull out. Judging from my experience at home, I would place Clapp's Favourite on the hardy list.

A MEMBER.—Would you please tell us the three or four varieties you would prefer?

The PRESIDENT.—Of course there is quite a difference between the climate of Grimsby and that of the County of Prince Edward. However, if I was going to make a selection to-morrow of pears to plant for my own use, I would take Manning's Elizabeth, Clapp's Favourite, Beurre Hardy, and the Josephine de Malines. If I wanted to plant for market, I think I would be satisfied with the Clapp's Favourite, Bartlett, and De Malines.

MR. BEADLE.—The pears which I have been fruiting would hardly be called recent introductions; they were brought into America some time ago, though they are not

generally fruited it, grape. I come satis knew unde not unlike the same able to ma it was ripe after the Holton—l it is not as seen large The Goods fruited it ripening l A fault th there is no ripe. I li like a Seck in size. O fair crophe wards. I reports ha it, they ar trying the it yet. I again. I like that p variety be Many of o the cellar, some years a turnip, a sider that I consider it very fine-ke have no ta that; you and said, "The next y He said, "more than Josephine a winter p winter pear, but l for winter better. Th soil, and y The P Mr. A opportunit day, and t south. I r thing else. ket should

generally disseminated in Canada. For instance, the Brockworth Park pear, I have fruited it, and I think it is an old pear revived with a new name, like the Beaconsfield grape. I forget at this moment the true name of the Brockworth pear; but I have become satisfied, after seeing the fruit, examining it, and comparing it, that it is a fruit we knew under another name. The Souvenir du Congres is a large, handsome pear, shaped not unlike a Bartlett, not unlike a Bartlett in its appearance generally, ripening about the same time—sometimes a little before, sometimes a little after. I have hardly been able to make up my mind whether it comes before it or after it; some seasons I thought it was ripening after the Bartlett. Perhaps, taking it on the whole, it does ripen a little after the Bartlett; but when you come to talk about its quality, I am a little like Mr. Holton—I am not prepared to say very much about it; my impression, however, is that it is not as good a pear in quality as the Bartlett. It is a very showy fruit, and I have seen larger specimens of the Souvenir du Congres than I have ever seen of the Bartlett. The Goodale also, though an old pear, is not very much disseminated in Canada. I have fruited it very many years, and I like that pear very much. It is a juicy, sprightly fruit, ripening late—ripening in October, after the rush of autumn fruits is somewhat over. A fault that it may be said to have is that it is not very attractive in its appearance; there is not much redness of cheek to it; it still retains a kind of greenish hue when it is ripe. I like the flavour of it very much; it is not one of the highest-flavoured pears—not like a Seckel or a Beurre Bosc—yet it is a good flavoured pear. The fruit is very uniform in size. Of course, my trees are small yet, but so far the fruit is of a good size. It is a very fair cropper; it begins to bear young—not so soon as the Bartlett, but very shortly afterwards. I believe the tree to be very hardy. It was originated in Maine, and so far as the reports have come in to me from the members of the Association that have been trying it, they are very favourable to it in regard to this particular of hardiness. I have been trying the Mount Vernon, which was introduced a good while ago, but I have not fruited it yet. I think the President has tried it. An accident befel my tree, and I had to start again. I have also fruited the Josephine de Malines, but I have lost my tree now. I like that pear; it is not a very new pear, but I doubt whether there are fifty trees of its variety bearing in Canada. I think it is the best winter pear we have in point of flavour. Many of our so-called winter pears are made so by keeping them just about freezing in the cellar, so that we can manage to hold on to them till January. I made the remark some years ago that I had not seen a real winter pear that was worth much more than a turnip, and Mr. Barry handed me one of those pears and said, "I think you will consider that better than a turnip;" and after seeing it for several years, and testing it, I do consider it better. Winter pears are very variable in their quality. I will get some very fine-looking specimens—for instance, of the Vicar—but when they get ripe they have no taste. My friend, Mr. Arnold, once handed me a Vicar pear and said, "Taste that; you won't think that is a turnip." I tasted it, and I turned round to Mr. Arnold and said, "I wish you would give me a pail or a barrel of them, and I would eat them." The next year I asked Mr. Arnold, "Have you brought down any of those Vicars?" He said, "Oh, you must be content with those; you do not get such Vicars as those more than once in a lifetime;" and that is my experience. At present I would say the Josephine de Malines is the best winter pear we have. The Mount Vernon is supposed to be a winter pear, but I cannot make a winter pear out of it. The Beurre d'Anjou is another winter pear which I cannot make a winter pear of. The Beurre Diel is another winter pear, but I cannot make a winter pear of it. However, my soil is not, I think, the soil for winter pears; it is too sandy for pears; I think if it was a stronger soil it would be better. The Beurre d'Aremberg is an old pear which I cannot grow to satisfaction on my soil, and yet I have seen some fine samples of it exhibited at our winter meetings.

The PRESIDENT.—Have any of you ever fruited the Duchess of Bordeaux?

MR. ARNOLD.—I have fruited it, and I once spoke very highly of it, but I take this opportunity of changing my mind. I saw about half a peck of them in my cellar yesterday, and they are not fit to eat—they are withered up. I think they might do farther south. I never yet saw a man grow winter pears but his soil was too sandy or too something else. I think that any man who makes up his mind to grow winter pears for market should also make up his mind to take a great many seedlings. I was coming to a

winter meeting some years ago with some Vicar pears; one or two gentlemen said, on trying them, "That is a very fine pear;" and I saw one or two more running to the door and spitting; said they, "Call that a pear? It is worse than any turnip I ever tasted." There is no winter pear that I think reliable but the Winter Nelis.

The PRESIDENT.—I hope no person will be discouraged by the remarks that have been made in reference to winter pears. The Josephine de Malines is growing with me just as well as a Greening apple, and it keeps just as well. The Duchess de Bordeaux is doing with me about as it does with Mr. Arnold—it gets to about half its size, and shrivels up; it will attain about the size of a Russet apple, with a long stem to it, and in a short time it shrivels up. The Mount Vernon succeeds well with me.

MR. CROIL.—No pears succeed very well with us. I have tried the Flemish Beauty, but it does not amount to anything.

MR. BIGGAR.—There are very few varieties that I grow. I find that Clapp's Favourite is about as good a pear as I have, with the exception of the Flemish Beauty, but they are very apt to blight on light sandy soil.

The PRESIDENT.—Does the Flemish Beauty blight?

MR. BIGGAR.—It has not as yet, but I expect it will this season.

The PRESIDENT.—Perhaps it would be as well to tell you that the lowest figure I was ever offered for Josephine de Malines pears was \$6 a bushel, and I can grow them as well as I can the Flemish Beauty. I will suggest that each of you might grow a tree of that variety, and see how you succeed with it. I top-grafted all my trees at first, and then condemned them; but now I have changed them back again. I double-worked my trees on pear tops. I did that because I made a mistake at first, and wanted to work them back again.

MR. ARNOLD.—The Souvenir du Congres is with me a total failure in the nursery, but in one instance in which I grafted it on an old, worthless pear tree, it has in a measure succeeded.

BEST METHOD OF PUTTING UP FRUITS.

MR. A. M. SMITH reads a paper on this subject:—

"One would be inclined to think that the Association had already discussed this subject till it was exhausted, when we remember the number of times it has been before us. But should we visit most any of our markets in fruit time, and see the way fruits are brought in, strawberries and other small fruits for instance, in pails and pans (ready for jam, with the extraction of a little dirt and the addition of a little sugar), peaches and plums in boxes and barrels, apples and pears in meal bags—not particularly well shaken (the bags I mean, no such imputation would apply to the fruit, as the numerous bruises would testify)—we should come to the conclusion that there was a necessity for a little more discussion or missionary work, or something of the kind, in this direction. If men are so blind that they can't see the difference between getting 40 cents a bag for their apples shook from the trees and carried to market in bags, and 50 to 75 cents per half bushel for good, hand-picked fruit, in good, clean baskets, or \$2 to \$3 per barrel, I think it the duty of the Society to send out a missionary to enlighten them. But to come to the question: the best way of putting up fruits for the market. This depends upon the object you have in view—whether it is to make the most you can out of your present crop, without regard to the satisfaction of your customers or your reputation for the future, or to give satisfaction to your customers and your own conscience, and establish a reputation that will be of use to you hereafter. If the former object is your aim, in the first place get the cheapest packages you can, as near like ordinary ones as you can, and have them hold as much less as possible and look like them; this you can do by giving special orders to the manufacturers. Then put in all your fruit—good, bad, and indifferent—don't lose any of it—but be sure you get the good fruit on top of the packages, put the best side up and make it look beautiful—buyers will think it alike all the way through, especially if they have been dealing with honest men. In putting into barrels, have good fruit in both ends, as some folks look at both ends when buying—you can put all the poor stuff in the middle of the barrel. If you are not likely to have fruit

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enough, put in a pumpkin or two, or a few turnips, to fill up—they will be useful to the buyer, and he will never know who did it, and it will be likely to go to the old country. Don't put your name on, and you are safe. This course, carefully pursued, may insure you the most money for the first crop, providing you didn't happen to sell to the same party twice. In that case you could go to some other market where you were not known. But if your object is to satisfy your customers by giving them a good article, and establish a reputation for fair dealing and good fruit, I would recommend the following course: Get the very best packages of the different kinds wanted, and if you get quart baskets for berries and small fruits, have them hold as near two pints as possible; and if you get an order for half a bushel of plums or peaches, don't try to put them in a twelve-quart basket; or, if you are ordering barrels to be made for apples, don't tell the cooper to cut the staves a little shorter than for flour barrels, or to draw in the bilge a little; and when you put in your fruit don't put it in unsorted, just as it comes from the tree. Some of the gnarled and wormy specimens won't hurt the pigs; and if you make two classes after you pick them out they will sell for more than enough to pay for the trouble of sorting, and when you put them in your packages don't put all the best on top, but have it uniform throughout, and then you need not be afraid to put your name on it, or offer it to a man the second time. Pursue this course from year to year, and you will never fail to find customers for your fruit at a fair price."

Mr. BEALL moves, seconded by Mr. BIGGAR, that Mr. Smith's paper be received for publication.—*Carried.*

MR. BUCKE.—I have had some little to do with having some fruit brought down to Ottawa this fall, and what I am about to state I know to be a fact. It was shipped by some people about Grimsby. Before it was sent it was seen on the trees by the person who consigned it to Ottawa, and he was perfectly satisfied with it—he said it was beautiful fruit, and he made arrangements to get his winter stock there—some 800 barrels, I think. The fruit was put up all right; but unfortunately the shippers, it appears, instead of loading it on to the steamer in a proper cradle, so as to have it put on board nicely, without jarring, sent it down a slide of about 20 feet, and the consequence was that the heads came out of some of the barrels, the apples were very much shaken, and when they got to Ottawa, the man who had thought that he had made such a good bargain, opened the barrels to find that the apples were all bruised. Some, however, that had been deck loaded, came to hand in most beautiful condition. Now, the parties who sold these apples put them up well, and this agent expected to have them come down in good condition; but here was an irresponsible party, the shipper, afterwards destroying them almost. I think there ought to be some hold on these shippers, or that something should be done to prevent good fruit being wasted by them.

MR. A. M. SMITH.—That is a very important question, and one which might be brought up under the head of miscellaneous business. There has been considerable complaint this year about the way that fruit has been handled both by express companies and by railways and steamboats.

MR. ARNOLD.—I have seen a great many hand-picking apples; and yet the same men put them into baskets, and you will see them pouring them from the top of the barrel into the bottom. Now, what is the use of taking so much pains in picking them if you are going to pitch them into the barrels in that way? Then again, men often send their apples two or three miles to a railway station in a lumber waggon, over a rough gravel road. No matter how well apples may be picked, that will injure them.

MR. PETTIT.—We have found a little difficulty this year in shipping. There was a large quantity of fruit shipped from Grimsby, and arrangements were made for the railway company to leave a car to be loaded by us. Where there is a small lot of fruit to be shipped from a station, we have to do the best we can—throw it in a pile, and let it go. On two occasions this year we were very successful in shipping our apples. One steamer came that had a cradle, and it let the apples down very easily. Later on in the season we got a vessel which had not such accommodation, and the apples were very much injured. The only remedy I see that we have for this thing is for the growers, wherever the quantity of fruit shipped is sufficiently large, to combine, and by so doing they can always get such facilities. That is one object which we are aiming at, at present. As far as packages are

concerned, my experience in shipping is that there is nothing better for our soft perishable fruits, such as peaches, plums, etc., than the handled baskets we are now using. I think it would be an advantage, if there was something contrived like a straw mat, to be placed in the bottom of apple barrels, which would cost about a cent or two each, and our apples were then well shaken into the barrel—not pressed; I think we are over-pressing our apples in the barrels; I think a little change in that respect would effect something desirable. I have heard some of our growers speaking of getting up such a mat as I refer to, and then shaking the apples lightly into the barrels.

The PRESIDENT.—Do you find any difficulty in packing and shipping raspberries?

MR. PETTIT.—There are very few raspberries in our section of the country; and as far as strawberries are concerned, I believe we succeed very well in shipping them as far as Toronto. There were some shipped as far as Montreal; but there was a great deal of loss, on account of heat and the length of time on the way. I think perhaps it would be an error to have our basket for handling peaches too large. The more fruit there is together, the more the danger of its being mashed, because its own weight will mash it if not very carefully handled.

The PRESIDENT.—Do you think there would be any advantage in sizing it?

MR. PETTIT.—What is not fit to keep at home is not fit to ship. We always calculate to get our fruit a little on the hard side. It must be so if it is going a long distance; and if a soft peach and a hard one are put in the same basket, the soft peach must suffer.

The PRESIDENT.—In shipping such apples as the Northern Spy, you sometimes find two or three different sizes on the trees; do you find it any advantage to ship the smaller ones by themselves and the larger ones by themselves in different baskets?

MR. PETTIT.—I have not yet fruited the Northern Spy; and among the other varieties which I have—the Greening, the Baldwins, the Spitz and the Russets—I do not find any great difference in size. If they do vary any, I have never yet sorted them; I always calculate on sending those that are good and fair.

MR. BEADLE.—What we got from our worthy director from Grimsby is quite in keeping with some thoughts that have been travelling through my head, and to which I gave some expression in one of my articles in the *Canadian Horticulturist*, and that is this, that our fruit-growers are losing the benefit of their labours largely from not adopting a better plan of getting their fruit to market. Among our farmers about St. Catharines one man will have perhaps 50 barrels to place, another 20 perhaps, another not more than 15, and perhaps another will have 100. They fold their arms and wait for somebody to come around to buy their apples. It seems to me that is a very unwise thing to do. Perhaps somebody will not come around at all, and if he does he will want to get their fruit as low as he possibly can. I think our friends at Grimsby have set an example to the farming community—that portion of it by whom apples are grown—which is well worthy of being promulgated through the country at large; they have combined. There is no one man about Grimsby, as I understand it, who has an orchard of some thousand trees, as some gentlemen have in western New York. There, there are comparatively but few trees, and these in a great many hands. Now, it seems to me that if our friends in that locality would put their heads together and form a farmers' club, or a fruit-growers' club, and get one man to attend to the business of marketing their fruits, and, if necessary, send him to some of the city markets to find out where their fruits could be best disposed of, and what way they should be put up, they would find that it would pay them to give that man either good wages or a percentage on the fruit sold, and that they themselves were at the same time reaping an advantage from pursuing such a plan. I got a letter from Dr. Hoskins, of Vermont, lately, in which he said, "The people are discouraged in raising apples here; thousands and thousands of bushels of apples are rotting on the ground," and it seems to me that Mr. Bucke wrote me a similar letter, saying that there were thousands of bushels of apples rotting in Lambton, Essex and Kent. Such complaints remind me of what I was reading about a jury in California bringing in as their verdict "Served him right." It does serve these people right. Our farmers have somehow lived so isolated, that they have never got it into their heads that combination can effect something; but our Grimsby friends, at any rate, have found it out. At all events, they are trying the experiment, and so far as I can understand they are satisfied with it.

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MR. PETTIT.—We have organized a Joint Stock Company, and had it incorporated, for the purpose of selling our fruits—handling them ourselves. We have 50 odd stockholders in the company, and each stockholder is limited to one share. The company is not organized for stock speculating purposes; its object is to have one man from among us sent to sell our fruits. The fruit is shipped to Montreal. The business is managed through a board of directors. The agent deposits the money which the fruit realizes in the bank to the credit of the Company, and a cheque is issued to each shareholder for the amount of his share of them. During the past year we have handled a considerable quantity of fruit for a first transaction, and I believe the plan has given general satisfaction. Our stock is not all taken yet. Our capital is \$10,000, in 100 shares, and now at the end of the year I believe it is the intention of the Company to open the stock books for the whole amount, as we find we can now manage a much larger business than we started with. Our warehouse in Montreal—our agency—is open now to any fruit-grower who wishes to consign his fruit there, and he can depend on its being handled on the best possible terms.

A MEMBER.—Does that include all kinds of fruit?

MR. PETTIT.—All kinds of Canadian fruit.

MR. WOODWARD.—We pack fruit similar to the manner in which your people do. Our best method is to set the apples in our barrels stem end down, three deep—though some only set them two deep, and those who are careless only one—and having set them down carefully all around, we fill up the space inside as full as we can. For number one apples our best packers select only perfect fruit—it is not as good as at the ends, but the apples are all perfect, and nearly uniform in size. We use a basket made of staves, with a loose handle to turn down. We pick that full and then turn the apples into the barrel, which we shake pretty thoroughly. We also press the apples, but not enough to bruise them much. After that we have no difficulty about their getting to market without bruising. The trouble with our people is that they are Yankees, and the majority of them are not more honest than they ought to be, and they are disposed to get in all the fruit they can—they cheat the hogs. Last year we put up 500 barrels of Russets. They lay there till about the middle of March, and I then sold them to a man to go to Chicago. I told him he might take his own hands and pick them over. He did so, and then came and paid me for 497 barrels—a shrinkage of only three barrels in 500. If you put your apples up in that way you will have no difficulty in selling them, and the same man you sell them to will come back again for more. We find it a great advantage to put the name of our orchard on the barrel, and also the number of the apples. Our legislators are very much afraid of monopolies, unless they are railroad monopolies. A few years ago we thought we would establish an association at Lockport, so that we could market our own fruit. We asked our legislators to grant us a special charter, and in that charter we wanted the privilege of punishing our own members; but that the Legislature refused to do. We proposed that supposing there were twenty of us in the Association we would each have a card, and on 19 of the cards we would print 19 names, leaving a blank for one of the names; and we propose to have a stamp on the head of the barrel, by which we would guarantee that every barrel bearing that trade-mark contains as good fruit clear through as what was in the ends of it—if not, we would be responsible. The object of leaving a name blank in each card was this:—Supposing we three men were in the Association. When we joined we agreed to pay \$10 forfeit for each barrel that was not put up in accordance with the conditions determined upon. This money we asked the Legislature for the privilege of collecting without litigation. I would receive from the President a lot of cards on which my name was omitted from the list of names printed on it. I would write my name in the blank, and when I got through packing, I would throw one of those cards in each barrel, and it would be then sent forward to market. Then we would expect that when a customer bought a barrel of those apples, and found it was good all through as at the end, he would be very likely to look again for the trade-mark which was on the end of it. But if he happened to buy a barrel which was not good all through, we proposed to have him take the card he found in it, write to the man he bought it from, and that man would pay the damages and send it right back to us, and we would call on the gentleman whose name appeared there and make him pay the forfeit. I know that such an

organization as that would pay. I have found that if I could get into the same market two or three times, I could secure it for my fruit; but if we work in an isolated manner the dealers get the advantage of all we do.

The PRESIDENT.—How do you pack your pears?

MR. WOODWARD.—We usually pack our pears in half-barrels. If we can stem them we do so; if not, we lay them down and then press them, but not so hard as the apples; being in half-barrels, they do not require to be pressed so hard. The Bartletts are usually kept in ice-houses, and then sent forward in ice-cars.

The PRESIDENT.—Mr. Woodward reminds me of a company formed in Belleville; it is an organization for the purpose of packing and shipping the fruits of the members to the best markets. Each man has a card; all use the one trade-mark; and every man must have on his own fruit his own card. A request goes with every package that a description of the condition in which the fruit arrives shall be sent back. The way they manage the picking is this: After arranging a table with a cloth on it and a rim around it, they have the pickers empty the fruit out on it. The apples are then all carefully sized—they won't have two sizes in the same barrel, let it be apples, pears, or anything else. Of some varieties of apples they make three different sizes, and when they are shipped to Europe the smaller sizes often bring the most money; but when the sizes are mixed, it has been found—even when there are only two or three apples in a barrel which are different in size from the ordinary run of them—that there has been about three shillings difference in the value. In England, mixed sizes of apples will not fetch within three shillings of what the smallest apples—those that we would be inclined to cull out—will when all of the same size. By the use of the cards, the Association can easily weed out a chap that they find is guilty of any little trick. I was only a few days ago looking over the Annual Report, and I find that that little company has realized this year from two to three shillings a barrel for their apples more than the quotations in Liverpool. My last shipment was Golden Russets and Northern Spies; the packages were lined with printers' paper, and the apples arrived all right, and sold readily at 22 shillings sterling, half Golden Russets and half Spies.

MR. WOODWARD.—Instead of using tables, we have a suitable number whose business it is to attend to picking the apples, stemming them, and filling the barrels, and others whose business it is to head them. Each person picking up sorts the apples into different baskets as he picks them; and we endeavour to put the same sized apples in each barrel. We would as soon have a barrel of Baldwins of medium size or under, if they are sized, as one of larger ones. The person barrelling gets so accustomed to his work that as soon as he looks at the baskets he can pick out the size he wants. We like that plan better than using tables.

MR. BEADLE.—I would ask if any gentlemen who have been packing apples had any experience in wrapping each apple in soft paper? I have conversed with some who hold that there is a decided advantage in it in two ways—one is, that it evinces a care, which goes a good way with the purchaser; another is, that the apples are less liable to bruise. Having packed them with a little soft paper wrapped round each one, you can press them down, and they are less liable to move about than when the apples are left unprotected by paper.

MR. WOODWARD.—The only person I have ever known to undertake that in Western New York is Mr. Vick. He, for instance, buys two or three barrels of the best Northern Spies he can get, and sends them packed in paper in that way, and it is no uncommon thing for him to get \$15 or \$20 a barrel for them.

MR. ORR.—As to apples being injured by carrying them on waggons, I would like to ask Mr. Arnold if he could suggest any remedy?

MR. ARNOLD.—The only remedy I can suggest is having spring waggons for them—strong springs would carry very heavy loads. I have sent apples a long distance on two occasions wrapped in paper. I sent one barrel to Nova Scotia, and the person to whom they were sent was very much pleased with them. A friend of mine sent a barrel to Scotland, every apple in which was wrapped in a separate piece of paper, and every apple reached there in fine condition; and in consequence of his success with that shipment he

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expects to sell hundreds of barrels next year. He contends that if it pays to wrap oranges in paper it will pay to wrap apples in it.

MR. CROIL.—I have sent several barrels to Scotland wrapped in paper, one barrel at a time, and I have found that those apples rotted as well as what were not wrapped in paper; others I packed in sawdust, and they did not keep as well. I think we err very much in over-pressing apples; if they are thoroughly shaken it is sufficient. From the little experience I have had, I do not think packing in paper would save the apples.

MR. A. M. SMITH.—I think there is more in shaking than there is in pressing, a good deal. I think a great many people err in packing apples, placing say one tier in the bottom of the barrel, then filling up the barrel, and not shaking the apples sufficiently. I have had a talk with Dr. Watt, who has just returned from the old country, and he says he saw there apples that he had put up himself for some of his friends, and they were slack when they were opened; I think he said they were apparently sound if they had not been bruised by the shaking. I have bought apples before now of parties who had put them up, and apparently they were all right when I examined them, but after teaming them a few miles to the station they were loose in the barrel, although they had appeared to be tight in the orchard. This idea of sizing apples is, I think, a very good one, but one that is not generally understood among our farmers—they are apt to put all sizes in the same barrel, providing they are sound.

MR. BEADLE.—A little experience of one of my neighbours corroborates what Mr. Smith has just said. He sent some twenty barrels of Ribston Pippins to a gentleman in Nova Scotia; they were nice specimens of apples, well packed. He thought he had put them up all right, but when they arrived in Nova Scotia they were found to be loose in the barrel, and very much bruised. I did not see the apples put up, and could not tell what the matter was, but it just occurs to me that Mr. Smith has hit upon the real trouble—they were not properly shaken as each basket was put in. Had each basketful been well shaken, so that each apple would have found its own place, there would have been no other trouble. The gentleman, in writing about the apples, suggested that there was perhaps a shrinkage in the fruit itself, owing to evaporation; they were shipped in the latter part of September, if I remember right, and the gentleman in question said he thought it possible that they were shipped too early, and that evaporation was caused by the warm weather. I feel confident now that the shrinkage was from insufficient shaking rather than from evaporation. If such a thing as that takes place, it is possible that it may be remedied to some extent by wrapping the apples in paper, and filling up the interstices with paper. I have seen—I think in the *Scientific American*—that if paper which has been dipped in a solution of salicylic acid—an acid prepared from the willow, which is said to have great antiseptic qualities—and then dried, be wrapped round specimens of fruit, any decay which has started in an apple will be confined to that particular apple, and very probably arrest its further progress—for a length of time, at any rate. I want to ask if anybody has had any experience of the use of that paper or acid in arresting or preventing decay? I am told that if this acid is mixed in certain proportions with cider it will prevent its fermentation even in a warm climate.

MR. WOODWARD.—I am inclined to think that one reason of your apples shrinking is that you pack them immediately after picking them from the tree. We used to have the same trouble that you talk about now; but latterly when we pick them we either remove them to a barn or put them under straw, and leave them there for from three to four weeks—and they certainly do evaporate and shrink during that time, and they also become more yielding than when they were taken from the tree. I have not heard of any difficulty in regard to loosening in the barrels since this plan has been adopted in western New York.

MR. BUCKE.—On this subject I may read the following, which I find in the *Horticultural Magazine*:—

“In Covent Garden I hear a very good account of Canadian apples, and was surprised to learn that they were beating the American produce out of the field. There seems some reason for this, as the Canadian apples are better packed; the American barrels are usually ‘topped up,’ in market parlance—a layer or two of good fruit at the top, and then fruit of a poor quality below. On the other hand, the Canadian fruit is generally fairly

good throughout, the barrels are well packed, and considerably larger than those of the Americans. A very excellent apple, which has been coming in in large quantities, is what is called the Golden Russet; it has a high and rich flavour. In some sales lately Canadians, when compared with Americans, were in the proportion of over six to one. This must be very encouraging to the Canadians, and should teach the Americans to pack honestly if they wish to keep the trade."

MR. TENEYCK.—I think that in packing apples it would be well to have a piece of planking to shake the barrels on. The ground sometimes becomes soft, and then you cannot shake the apples as well on it as on plank.

MR. BUCKE.—It is the custom in England that everything from this side of the Atlantic is sold as American—it does not matter whether it comes from Canada or South America. But they are beginning to discriminate now between Canada and America.

MR. PETTIT.—In labelling the packages—of peaches particularly, but generally also of grapes and other small fruits—the grower is not as particular in putting on the names of the varieties as he is in the case of apples. I think it would be profitable in the end if he would place the name of the variety on all packages of fruit, whatever the description. The consumers would then become acquainted with the different varieties, and know which of them best suited their various tastes, or their ways of using fruit. All the yellow flesh peaches are palmed off for Crawfords. There are some kinds of peaches, —such as the Morris' Whites or the Barnards—which, for canning, are superior to the Crawfords; but the consumers all want the Crawfords. I shipped several tons of grapes to Ottawa, and I labelled them all very particularly. I put them up in fifty pound baskets, laid the clusters in lengthwise, and they gave good satisfaction. I also shipped between one and two thousand baskets of peaches, labelling the baskets particularly, and they too gave good satisfaction. I think if growers would adopt this plan with all their fruits, and thus let the consumers become acquainted with them in their varieties, the result would be of great benefit to both.

MR. BIGGAR.—I believe that almost all the black grapes that came to Toronto last season went under the name of Concords. They did not know any other name.

The PRESIDENT.—I noticed last year, in the quotations of the English markets, a variety of apple labelled "Phoenix," that commanded good prices. This year I have seen four varieties going to Europe as the Phoenix. The consequence is, that the English people will not want any Phoenix apples next season. This is practised only by the fruit buyers who go round the country.

MR. ARNOLD.—What is the size of Canadian barrels for shipping apples? We hear that the Canadian barrel is larger than the American. We asked our Legislature once to fix a size for barrels, and I forget whether they did or not. I think, if possible, we should have barrels of uniform size.

The PRESIDENT.—I recollect that we asked our Legislature at one time to regulate the size of the apple barrel, so that it would be something like the American barrel—one hundred quarts. They did so; but ours happened to be sized according to Imperial measure, whereas the American barrel is sized according to the Winchester measure, and consequently our barrel is a little the larger of the two.

MR. A. M. SMITH.—I would like to know what is the size of a basket of peaches, and I might also say of a quart of strawberries. I think there is more variation in them than in the size of our barrels a good deal. Some shippers send their peaches in twelve quart, some in fourteen quart, and, perhaps, some in sixteen quart packages. Now, if one man orders a basket of peaches from me, and I send him sixteen quarts, and his neighbour orders a basket from my friend Mr. Pettit, and he sends him twelve quarts, and if these two men happen to live pretty close together and they happen to notice the difference, there may be a little dispute as to the ownership of the larger basket. I think it would be a good idea to have a regular standard for a basket of peaches or plums.

MR. BEADLE.—I have often thought of this matter, and wondered how we could remedy it. Perhaps by some united action we may succeed. It is time there was some definite agreement as to the number of quarts that make a barrel, the number of quarts that make a basket, etc. It used to be supposed that a basket of peaches was about half a bushel; but it has got to be "about" a little smaller, and "about" a little less, until it

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is "about" anywhere now—we know nothing about the size of it. It seems to me that it would be a wise thing for us to appoint a Committee to consider this matter, and when they have agreed upon something, to get our Legislature to deal with it. I move, That the President be authorized to appoint a Committee of three to sit upon this question of measures; and that they take time with it, and report at the summer meeting.

MR. PETTIT.—Isn't the American barrel smaller than the Canadian?

MR. WOODWARD.—Our apple barrel holds one hundred Winchester quarts.

MR. PETTIT.—Ours, I think, holds a little more. Does the Canadian barrel, on the strength of the quantity in it, bring one cent more than the American barrel—the fruit being of the same standard of quality? I do not think it does. I think if a man wants a customer, and is shipping to him, he is going to give him as good value as he can—and he is not going to send him smaller barrels or smaller measures than it is to his interest to do. If you put peaches in a large basket, you cannot carry them to market well. If you put them in large baskets, you do not have so many baskets to buy; whereas, if you think you can get your fruit to market in better shape in smaller packages, you have to pay a little more for your baskets in doing so. I do not think a Committee could accomplish anything by sitting on this question. If a man will not put up his apples properly he is the sufferer, as he will learn sooner or later. In reference to packing apples, I think there is a great deal of neglect in that matter. I have been trying to practise on different fruits for the last two or three years. I keep a horse and buggy in the orchard while picking, and have the fruit taken in out of the sun and put in bins. I leave it there for two or three weeks, and then put it up in the shade. This last year I packed a barrel outside, and left it lying about an hour in the sun—I then brought it in and opened it, and it was like an oven inside of the barrel. I think that if we had cool places to pack our apples in, and then, as soon as they are packed, put them in a cool, shady place, and leave them there till the weather is cool enough to ship them from the country, we would find a great deal less slackness and a great many fewer rotten apples in the barrels.

MR. A. M. SMITH.—I do not know how it is in the English market, but I put up apples for a firm in New York for two years, and they were willing to pay me twenty-five cents a barrel more for apples which were packed in our barrels here than for those packed in American barrels across the line. And I understand it was the practice of this New York firm to transfer the apples from the Canadian barrels into their own barrels, and in that way they made quite a profit on the apples. In regard to baskets, I think that a twelve quart basket would perhaps be preferable to a sixteen quart; but if I were going to suggest a size, I would split the difference between the two, and choose a fourteen quart. I think it would be better for both consumer and shipper to have a uniform size, not only in barrels, but also in peach baskets and in berry baskets. In our market, St. Catharines, sellers are obliged not to break bulk. If they bring in berries in baskets, they must sell them in the baskets. But there is nothing to prohibit them selling them in any size of basket. The same remark applies to peaches; if they are sold by the basket, basket and all, it makes no difference what the size is. They may be sold by the basket—but if they are sold as baskets containing so much, and the measure does not hold out, they are liable to be confiscated.

MR. ARNOLD.—Several of our friends have been talking about Canadian barrels. I have asked the question whether there is such a thing as a Canadian barrel? We have various sizes of barrels.

The PRESIDENT.—If Mr. Arnold would only look at the quotations of the sales of fruit in Liverpool, he would see that the American apples regularly brought from two to three shillings less than the Canadian apples per barrel. I presume the difference in the size of the barrel has something to do with that. Our barrel is one-fifth larger than the American, if we use the flour barrel.

MR. BEALL.—Can anyone present give the size in cubic inches of the American barrel?

MR. WOODWARD.—The size of our barrel is $16\frac{1}{2}$ inches head, $28\frac{1}{2}$ inches in the stave, and 64 inches around the bilge. The dealers universally want a big barrel; the growers say the hundred quart barrel is the most satisfactory barrel they have ever used. If there was a difference of two or three shillings a barrel in England, and it was on account of the size of the barrel, still we would receive the most money for our fruit per hundred

barrels. If it is a fact that barrels chafe in crossing the water so that they often wear holes in each other, then the hundred quart barrel is large enough. This is a matter with which I think the Legislature has very little to do. They can establish a size for a package of fruit; but when they attempt to pass a law to fine me or any other man for putting fruit into a different sized package, I think they propose to do more than they have a right to do. If I choose to put my fruit in a nail keg I have a perfect right to do so, and if the buyer does not want it in a nail keg he is a fool to buy it in it. If a man should attempt to ship peaches to St. Louis in 16 quart baskets he would ruin himself, because he could not get any more for them than if they were in 11 quart baskets. The different local markets want different quantities in the baskets.

MR. WHITE.—In listening to this discussion I have become thoroughly convinced that it is high time something was done. There seems to be no standard for Canadian barrels. For all agricultural commodities there is a standard; and if there is not a law regulating this matter, I think it is quite time that we should ask the Legislature to make one. If I buy a hundred barrels of apples I want to know what I am getting; and the same if I contract for a hundred baskets of peaches. As our Legislature is sitting now, I do not see any reason why we should not ask them to consider the matter. As I understand it now, the buyer does not know what he is going to get until the barrels of apples or baskets of peaches arrive. How can I contract with a man if I do not know what I am going to get?

MR. WOODWARD.—With us the buyers make bargains as to the size the baskets are to be according to the market they are going to ship to.

Moved by the Secretary, Mr. D. W. BEADLE, and seconded by Mr. A. M. SMITH:

Resolved,—“That the President appoint a Committee to enquire into the best size of apple barrels and other fruit packages, and the steps requisite to secure uniformity of size in such barrels and packages, to report thereon at the next meeting of the Association.”

MR. ARNOLD.—I would freely endorse that motion if all was struck out after “apple barrels.” There is something in the experience of these gentlemen in packing soft fruits, which they certainly know more about than we do; and I know myself that when in certain conditions, soft fruits require small baskets. The only remedy I can see for that, if this motion is acted on, is that there should be baskets and half baskets. That could be done in the way of quart baskets, and in some cases we would have to send pints instead of quarts. I think if the gentlemen from Grimsby could agree among themselves, they would be better judges of what the size of baskets should be than anybody else.

MR. BEALL.—I have been anxiously waiting to hear some person state that the law as it stands has already defined something with respect to strawberry baskets. There is an impression in my mind that if it is not defined by statute law, a decision has lately been given in one of our courts making it imperative that the packages in which strawberries are sold shall be quarts. I would like if Mr. Woodward or somebody else can give me the cubic inches of the Winchester quart.

The PRESIDENT.—With respect to quart baskets, I think that any man who is shipping raspberries should be obliged to send them in quart baskets; but I think it would be very hard that when they arrived in the market he should be held for a quart in the basket. I presume that strawberries and raspberries would be better shipped in three half pint baskets. Nevertheless, that would not interfere with the regulation of the size. If peaches are better shipped in 12 quart baskets, I do not see why there should be anything to hinder that size from being fixed upon.

MR. WOODWARD.—The Winchester quart is $67\frac{1}{2}$ cubic inches.
The motion was then carried.

BEST METHOD OF PRESERVING FRUITS AND VEGETABLES BY DRYING.

MR. BEADLE.—Mr. President, I will try to introduce this subject, though I hope there are some here who can give you more information in regard to it than I can possibly do. I remember very well seeing, when I was a boy, pieces of apple, quarters or eighths perhaps, hanging on strings round the chimney corners in the old log houses of the country, or strung up on poles, sometimes outside the door and sometimes inside. After hanging there for a time like so many beads, they were spread out on boards and laid up

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in the sun. That was the method of drying that was in vogue in those days for apples and peaches—not often pears; there were not so many of them. I understand that that mode of drying has not altogether disappeared yet. I notice quotations in the market for dried apples and evaporated apples, and I suppose that the “dried apples” are those that I have just spoken of—dried on strings, where the flies, the sun, the smoke and the dust can get at them. I believe that is not the best way of drying fruit, if I can judge from the quotations, which, if I remember right, make at least double in favour of the evaporated fruit over that which is quoted as dried fruit. I have visited, at the request of the Board of Directors of this Association, several fruit-drying establishments, and we made a very elaborate report (which was published in our Annual Report), showing how fruit is evaporated. The apples are pared and sliced at one operation. They are put on a spindle, and when they come off it they are pared and cored and sliced, and all you have to do is to separate the slices, and the apples are ready for drying. Then the apples are placed on wire trays. Some think the wire discolours the apples.

MR. A. M. SMITH.—They are using galvanized wire now.

MR. BEADLE.—These are then placed on the framework near the fire, which rapidly evaporates the apples—takes out the superabundant juice, so that when the trays get to the opposite end of the inclined plane in which they are placed, the apples are sufficiently dry to be taken out and packed. They have lately adopted the idea of taking out all the colouring matter of the fruit by means, I suppose, of sulphuric acid—I suppose it is sulphuric acid. They put sulphur in and burn it, and the fumes of the sulphur take out the colour. By this process the fruit is made to look very nice. I notice that in New York it is quoted at pretty good figures, and I should think it must pay well, because I know that this year these fruit-growing establishments got their apples at about 15 or 20 cents—I should say an average of 16 cents at the furthest—a bushel, very fair apples—not such apples as we would send to Liverpool; and if I remember right, from 25 to 28 cents was the price per pound in New York.

MR. WOODWARD.—They are very low this year. There was one time this year that they were 11½ cents.

MR. BEADLE.—Whatever the quotations were, I remember saying to myself, “That ought to pay;” and I believe these drying establishments generally do pay. There has been one started this year in St. Catharines, and I believe that establishment has a branch at Beamsville. I believe there is none at Grimsby yet, but there is one at Fonthill now. This thing will spread; and I am very glad of it, because it will afford a market for a class of apples which ought not to be sent to market, but which enables a man who is anxious to sell all his apples to do so without cramming them into a barrel. There are several dryers manufactured. There is the Williams, the Alden, the Pacific, the California, and others; but the principle is the same in all—they extract the moisture and leave the apples in such a condition that they are ready to be packed up as soon as they come away from the dryer. By this process you can put a barrel of apples in a very small space, and when it comes to the consumer all he has to do, in order to make use of the fruit, is to put it into water, allow it to soak, say overnight, and by that time it is all swelled out, and can be made into pies or puddings; and I am told that it requires a very sharp taste on the part of the eater, when he is eating the pie or pudding, to tell whether it is made from apples just as they came from the tree or not. It is cleanly; it is sweet; it will keep for a length of time; it is good for shipping; you can send it any distance you want—round the world if you like—and when it is cooked it is almost if not quite as good as fresh apples. Not only does this way of preserving apples open up a way of using up a class of fruit that we do not want to send in the barrel to market as fresh fruit, but it also enables the grower to get a fair price for what he would otherwise less profitably feed to his pigs. I believe that we are going to have these establishments scattered throughout Canada so generally that they will be within the reach of almost all our fruit producers, and enable them to market their fruit better in the future than they have been able to do in the past. At all events, there will no longer be the same temptation that there used to be to get apples of a certain quality into the market surreptitiously.

MR. MORRIS.—I am interested in the dryer at Fonthill, but I do not know that I can add anything to what Mr. Beadle has already said. The one we purchased is a Williams.

We went to New York and examined the different makes, and after considerable enquiry we chose it. So far it has given every satisfaction, and I do not know how it could be improved. I am told that the fruit evaporated by the Williams is quoted at a higher price than any manufactured by any other evaporator. One way in which I account for this is: On the sieves of the Williams the fruit has to be spread in a single layer—you cannot put two pieces one on top of the other—and the consequence is that it dries evenly. In some of the other dryers, on the other hand, you can pile the fruit up an inch or two thick, and in that way it does not dry as evenly. I believe if these dryers come into general use, it will make a great difference in the quality of fruit that is shipped.

MR. BEADLE.—Can you describe the bleaching process?

MR. MORRIS.—With the Williams the fruit is bleached after it is put in the dryer. There is a little can in which the sulphur is burned, and then the sulphur runs into the evaporator through a little tube, and then it goes up through the fruit. In all the other evaporators that I have seen, I believe the fruit has to be bleached before it is put in the dryer; and when it is bleached in that way it keeps the premises in a dreadful smell. With the Williams you do not smell anything bad.

MR. ARNOLD.—Do you know whether the sulphur has any effect on the flavour of the fruit?

MR. MORRIS.—We cannot notice any difference, and we cannot tell any difference between the green fruit and the dry when it is cooked. We have tried drying pumpkins, and we have succeeded so well that we intend going into that next year.

MR. A. M. SMITH.—At present they are drying potatoes in St. Catharines. There the bleaching process is independent of the drying. The fruit is put into a box where sulphur is burned before it is put in the dryer. Before the fruit is dried you can taste the sulphur in the fruit; but the evaporation takes the flavour all out.

MR. WOODWARD.—I think that Mr. Beadle is wrong when he says that all the dryers dry by the same process. I think that they use two distinct processes; in one the green fruit is taken immediately over the fire—into the intense heat—first, and it is then gradually passed up through the moist air; or it is first put into the moist heat and then carried into the heat that is dryer. In the other they finish off over the greatest heat. I believe our people in western New York now regard the Williams, the Alden and the Seymour as essentially the same thing—as being the best dryers. We find it makes little difference in drying apples whether we bleach the fruit first, or burn the sulphur and carry the sulphurous acid gas up through the fruit; but in drying peaches we find that it makes a very material difference. The better variety of peaches colour very quickly after they are prepared for the dryer; and we now have a bleaching process—I think it is patented—by which we have the fruit passed right through the sulphur as soon as it is prepared, and it is then put directly on the dryer and immediately carried over the fire. I have never heard that this causes a bad smell in the room; there is a draught of air through the tube which keeps the fumes out of the room. There is no doubt that the same kind of fruit, after it is dried, becomes sweeter. I was at Rochester last spring with some gentlemen, and we took dinner at the Whitcomb House there, and I think we all took apple pie. I accidentally happened to get a piece of the apple that had not been thoroughly soaked, and by investigating closely I discovered that it was dried apples we were eating. I waited until after we had got out, and then I asked those gentlemen how they liked that pie. They said they liked it pretty well. I asked them what variety of apple they thought it was. They said they thought it was a Greening, but they thought it was a little sweet. I told them it was dried apple pie they had been eating; but they would not believe me till we had had the landlord go in and investigate and find out that it was dried apple pie. Last year these apples were selling at from 14 to 16 cents a pound in New York, and every man who had an apple dryer had a bonanza. This year they have been selling as low as 8½ cents a pound. They are now paying as high as 40 cents a bushel for apples to dry. It costs about two cents a pound to dry the fruit. About five pounds of the dried apples on an average are obtained from a bushel of the undried, and that pays very well. I have no doubt that of large dryers and small dryers there have been in operation this year in Niagara county more than 200. There are probably not less than 35 dryers that have been running 300 or 400 barrels a day each. An error which our people have been

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making is that they have begun to dry too early, and to dry unripened fruit. They do not seem to realize that the putting of that fruit into the market will create a prejudice against the evaporated article. It is bad policy on the part of the fruit-growers to attempt to force that kind of fruit into the market. Let the fruit get ripe, and then use only good fruit. We find there is a great deal of difference in the amount of the dried article which different varieties of apple will yield. Our experience is that no variety will give such a yield as russets—the quality is not so good. Our people are now keeping the different varieties of apples distinct, and when they pack the dried fruit they mark the variety on the boxes. I think that is a good plan, because the process of treating a Russet that is made use of in drying a Greening will not make the pie or sauce from both the same. Another great mistake that our people over there make is, that they do not leave enough of the apples to feed the hogs. One man told me that if he had known the great profit there was in drying peaches he would have put up eight or ten dryers and run them all through the season. He says he is satisfied that he could pay at least 30 cents, and he thinks, if they were good peaches, 50 or 60 cents for three-peck crates just for the purpose of drying.

MR. BEADLE.—Those who have read the *Horticulturist* will have observed a little article of mine as to how our neighbours dispose of their surplus apples. I should say that in the neighbourhood of Rochester the pigs do not get much apple sauce for their dinner. Everything in the shape of an apple was brought into a cider-mill there in sleighs, and then, in addition to that, other apples were being brought there in car-loads, and as they were being unloaded I heard the foreman telling the men to mix the frozen apples and all the others up together. There was an immense quantity of apples there in a great long building with cider-mill after cider-mill in it—I was told how long it was, and how much longer they were going to make it—and there they grind these apples up by steam, and press them by steam so as to squeeze the juice all out of them. Then they send all the way to Jersey and Massachusetts to get sand, and they put the cider on a bed of this and let it percolate through it, and then put it up in barrels and send it off. In this way, it seems to me, there is no chance for the pigs at all; every apple that has a particle of juice in it is squeezed up and used up. Why, it is used twice. After they squeeze all the juice out they soak the pummace in water, and then squeeze that out and—they say—make vinegar of it. I do not know about that; I thought perhaps some of it went into the cider.

A MEMBER.—Would it be profitable to dry plums sold at 60 cents to \$1.00 a bushel?

MR. WOODWARD.—With us they pay from \$1.50 to \$3.00 a bushel for plums for canning, and they told me they were unable to get as much as they wanted of the whiter varieties. I could not say as to drying. I do not think they ever tried drying plums with us at all. Plum-growing is in its infancy there.

MR. BUCKE.—I have a good many friends and relatives living in India, and they use a good deal of fruit out there, but they cannot grow the northern fruit there, and they get it from California put up in cans. In a climate like that, these dried fruits would bring a very good price; the canned fruits bring an enormous price. Any one can see that when fruit is going a long distance it can be more handily carried in a dry condition than in tins or cans. It would be a great thing for this country if we could control the dried fruit trade with India. We are now subsidizing a line of steamers to Brazil, and if we could send our dried fruit down there and to the West Indies I do not think the capacity of Canada for fruit-growing would be sufficient to supply those warm countries with it. Probably one of the best investments that a person could go into would be to put his money into the drying of fruit for the markets of hot climates—especially where there are Europeans who have been accustomed to the fruits of more northern climates.

MR. BEADLE.—I received a letter from an acquaintance in California a few days ago, in which he said that a neighbour of his had been drying apricots and canning them, or canning them and drying them—I forget which. He had received an order from England for 30 tons of canned apricots.

MR. BEALL.—There is a large vegetable drying machine at St. Marys, and I believe

the proprietors of it are going largely into the drying of potatoes, tomatoes and corn. I do not know anything about how it is done.

MR. A. M. SMITH.—The process of drying vegetables is very much the same as drying fruit. Mr. Beadle went in company with me to Rochester for the purpose of inspecting these drying machines, and we found that they had a large contract there for the drying of onions. Last winter a large drying establishment on the other side also dried a large quantity of cabbages, and at present they are drying potatoes in those establishments in which they are drying apples. Black raspberries are good fruit for drying. They lose about as little as any fruit, and they command a good price. I know parties offering to make a contract to pay six cents a quart for black raspberries—any quantity for years—for the purpose of drying them. I do not know whether they dry corn in these or not; I think it might be done. There is a community at Oneida, on the other side, who send out a great deal of dried corn. I think it is prepared by a similar process.

MR. WOODWARD.—We used to have several establishments in our county for drying corn. They claimed that they were very successful, but I notice that all those who were connected with the business have quit it. I think it is extremely difficult to dry corn so that it will retain its flavour. Canned corn is, I think, so much better that the dried corn cannot compete with it. In the edge of Orleans County, near our county, we have an establishment conducted by a doctor who has been experimenting, and who is making what he calls dry soup. He takes the different vegetables and puts them together in the proportions necessary to make a fine soup.

MR. BUCKE.—They dry carrots, I believe, at St. Marys, and say it is very profitable.

THE PRESIDENT.—There is a drying establishment at Belleville.

A MEMBER.—There is a very large one at Tilsonburg, drying apples.

SORGHUM.

MR. WHITE.—My next neighbour tried a small quantity of sorghum last year, and took it where a man had rollers, and had it manufactured into syrup. I had a quart of it on my table; it had a little peculiarity of taste, but it was very good syrup. In the Western States they are manufacturing it in large quantities, and it seems to be very profitable.

THE PRESIDENT.—I know a gentleman who has tried a small quantity of it this year. He had just temporary rollers for expressing the juice, he had only three rods occupied with the sorghum, and he had about 16 gallons of very fine syrup. I grew a small quantity of it for cow feed, and found it was very profitable for that.

MR. ARNOLD.—I would ask Mr. White if any sugar has been made from the sorghum in that part of the country?

MR. WHITE.—They are making sugar in large quantities over in the Western States; I see that in the paper.

MR. BUCKE.—There is a difficulty in granulating the juice from the sorghum. There is also a very great difficulty in granulating the syrup from the sugar beet. There is no difficulty in getting the syrup, because you just squeeze out the juice and boil it down, the same as you do maple sap, but when you come to try to crystallize it you require very expensive apparatus. Some person in the States got up a mixture to granulate the syrup; I have not heard whether that is doing very well. The real way to do it is to granulate it in the vacuum pan. And only a large company is able to do that. It costs about \$50,000 to get such a pan. Sugar could be made from sorghum by a company with a capital of \$100,000; at any rate the mechanical process to be gone through is not so expensive as that for beet sugar. For sorghum you do not require charcoal, and then it does not need to be washed, as beets have to be. I have no doubt that before many years are over we shall be making lots of sugar in Canada.

MR. BEADLE.—I see in a number of our *Canadian Farmer*, published in Welland, an account written by a person who had gone up to Tilsonburg and made an examination into this manufacture up there. I rejoice that the Company has been formed under Dr. Joy, as stated in that article. Dr. Joy is a practical chemist. He went into the United

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States and visited a large number of factories where they make the syrup and the sugar from the sorghum. There is no trouble in making the sugar if you know how, and this gentleman found out how. If my recollection is right, it takes 12 gallons of syrup to make 100 pounds of sugar. Dr. Joy found out what was the best machinery for crushing the cane, manufacturing the syrup, and the process of clarifying it and taking out the acids and other effete matter, whatever it may be, that is not wanted in the syrup, and they are now making both syrup and sugar, though I believe they have not made much sugar yet. They found so ready a market for the syrup that they have disposed of the largest part of their manufacture in that form instead of in the form of sugar. They have used up considerable seed there this year. They bought seed of the amber cane, planted 37 acres of it themselves, and they gave or sold seed to all the farmers they could get about them to experiment on the raising of this cane, and they used all the product of this up in the manufacture of syrup and sugar. The farmer finds that he can make a very good thing by growing the cane; if I remember right, he received three dollars a ton for it delivered at the factory. He can take off all the leaves and keep them for fodder, and he can take off the top and keep that for seed. He finds that the yield of seed is about thirty bushels to the acre, and that it is as valuable as shelled corn for feeding to his stock. The farmer is satisfied it is a good paying thing for him to grow the seed, and the Mill Company are satisfied it is a good paying thing for them to manufacture this cane into syrup and sugar. They say that about thirty per cent.—if I remember right—is the profit of this year's industry, notwithstanding all the disadvantages connected with it on account of its being a new enterprise; and so well pleased are they with their success that they are enlarging their operations. They are increasing their capital stock, and are going to have a large acreage of this cane planted next year. Another thing that the Doctor proposes to add to this industry, in connection with this establishment, is the manufacture of grape sugar. If you have read the *Canadian Horticulturist* lately, you will have seen something about a trial in which it came out in evidence how much money people were making by the manufacture of that kind of sugar. It was perfectly astonishing to me; the profits were immense. By growing the amber cane and manufacturing that into sugar, I believe we can certainly, after a time, produce enough sugar here to supply our people. I am satisfied, from all my reading about the matter, that sugar can be made more profitably in this country from the amber cane than from beets. Our Government some time ago offered a large bonus to any Company that would go into the manufacture of sugar from beets. I wish they would transfer it to a Company that would manufacture sugar out of cane.

MR. BUCKE.—The amount of sugar consumed in Canada is rather over than under thirty pounds per capita. At this rate, allowing seven cents a pound, there is about \$8,400,000 per annum sent out of the country for sugar alone. I find from some statistics quoted in the States that they get 180 gallons of dense syrup from an acre of sorghum, from which they make 1,800 pounds of sugar and 44 gallons of syrup, and this it is possible to increase to 2,400 pounds of sugar and 55 gallons of syrup. The Ontario Government one time offered a bonus of \$95,000 to encourage the manufacture of beet root sugar.

The meeting then adjourned for tea.

BEST SOIL FOR APPLE TREES.

MR. BEADLE.—There are some soils that apple trees will grow in very well, which are not so well adapted to the peach. My observation leads me to this conclusion, that if I were to find a soil of what I would call medium texture—not all sand—not the heaviest clay, yet having a certain amount of clay in it—largely abounding in lime, so that the water passing through it would get impregnated pretty strongly with it, and be what you would call pretty hard water,—I would prefer that soil for apple trees. Most of our apples are better flavoured, firmer in texture, carry better, I think keep better through the winter, when they are grown on a soil of that character. I think I have noticed a difference—a very marked difference—in the quality of some varieties of apples, due to the soil upon which they were grown. As an illustration, take the Swazie Pomme

Grise apple. I think it is not by any means merely imagination on my part which makes me think I can almost tell you the soil on which the tree which has borne the fruit I am eating has grown—that is, within certain limits. Grown on a light sandy soil, it is not nearly as nutty in flavour as it is when grown upon a pretty strong limestone soil. Along the Niagara River I have seen and eaten apples of that variety, which were very fine in flavour indeed. They were a very spicy fruit—perhaps spicy is the word instead of nutty; and yet there is a sort of nut-like flavour to that apple, reminding one almost of a hickory nut, when it is grown upon a pretty strong limestone soil, which gives it a very high quality. I think the trees are longer-lived, grow more uniformly—not so long a growth perhaps in the season—upon a pretty strong clay soil, than upon a watery sandy soil. Therefore I think the trees grown upon such a soil are better calculated to endure the rigours of our climate, especially when we get northward. I do not think it matters very materially what the character of the surface soil is except perhaps during the first years of a tree's life; the roots soon get through that and get into the subsoil. Yet, if I could fix the soil to fit all exactly, I would choose that after you get down pretty well, say two or three feet, the soil should be sufficiently porous to under-drain itself. That is the soil I should like for a healthy growth of apple tree. We all know that a tree which must run its roots into a cold, wet subsoil, will soon become sick, and after a while it will die, so that when I speak of the subsoil I mean the upper subsoil. An apple tree will grow and flourish on well-drained soil of any texture. I have seen it growing upon pretty light sand, and I have seen it growing upon stiff clay; but I think if I were to be allowed to choose between stiff clay and sandy soil, I would choose stiff clay.

MR. LESLIE.—It seems to me that Mr. Beadle has covered the whole ground in the remarks he has made. There is no doubt that a tree having cold feet, as the saying is, cannot succeed well at all. At the same time, I would fear to go to the opposite extreme. Mr. Beadle says that he would like land that drained itself. Well, I remember once that we had a very beautiful field of young trees, which afterwards mildewed and blighted, and refused to grow; and I found, after getting through the surface soil, that they had got down into the white sand. The field was drained so effectually that the sap was drained out of the trees, and there was no possibility of their growing. From my experience in the growth of apple trees, I would say a nice clay bottom with a surface of fine sandy loam was the nicest soil you could possibly have, not only for an apple tree, but for almost any other tree.

MR. WHITE.—Up in the county that I live in, we find that trees bear better and flourish better on gravel with quicksand bottom. The gravel there is perhaps eight or ten feet deep; the roots never go through it. The apple grows very abundantly there, and we generally have a very fine crop. There are more apples grown on that soil than on any other soil that I know of. Still, I have seen very fine apple trees on clay loam. I agree with Mr. Leslie that a cold wet clay at the bottom is not good. I know one man along the lake who has ten acres, and he has shipped as many as a thousand barrels a year.

MR. YOUNG (Trenton).—I have had a little experience in fruit-growing, and it leads me to think that a clayey loamy land—that is, a clay bottom with a sandy top—is a good one. That is the character of my own soil, and the trees are doing remarkably well on it. I notice that on those soils in which there is too much sand the trees do as well for a time, but they do not hold out as well as where the land is a little stronger. But I have not had much experience in these matters.

MR. ARNOLD.—With regard to wet feet, I thought that what Mr. Leslie said covered the whole ground. Neither animal nor plant likes to have its feet in cold water. If I had a choice of a soil for apple trees, it seems to me that I would have a mixture of about half clay and half sand, and then I would get the vegetable food in, in some way, in the shape of manure—old rotted sods to the depth of two or three feet. After that nothing would suit me better than a bed of limestone gravel. I believe that lime is necessary for the growth of trees—you cannot get good healthy trees without it. In our section of the country the bottom is limestone—beds of limestone, in many cases, to the depth of at least 200 feet. As regards the surface soil, a young tree should have the surface clean; nothing should be growing upon it but the apple tree. If it is very young, the

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soil can be kept in that condition either by cultivation or by mulching. Some advocate some kind of mulching on the soil; some stir the soil instead; I would not be particular which was done.

MR. SAUNDERS.—With regard to this question of a choice of soil, I think that most farmers buy their farms without considering the fruit subject. As a rule, they omit to make the best use of the soils that they have, and for their encouragement I should like to endorse the remark of Mr. Beadle, that the apple tree would grow well on any ordinary soil, provided it was well drained.

MR. WOODWARD.—My ideal soil for the apple tree would be one in which, at the surface, clay and sand were mixed, the sand predominating; and I would have that growing gradually heavier till I got down about fifteen feet. Then I would like to have that as stiff as possible.

MR. PAGE.—When this question was first mooted, the thought occurred to me, was it in reference to the growth of the tree, or with reference to the fruit after the tree was grown? I find—and I think you will agree with me on that point—that the soil which is just right for the growth of the tree may not be the soil which is just right for the growth of the fruit after it attains its maturity.

MR. SAUNDERS then read the report of the Delegation to the Michigan Pomological Meeting.

MR. BEADLE moved, seconded by MR. BUCKE, That the Report be received with thanks, and published in the Annual Report.—*Carried.*

REPORT OF THE DELEGATION APPOINTED TO REPRESENT THE FRUIT-GROWING AND FORESTRY ASSOCIATION OF ONTARIO AT THE WINTER MEETING OF THE MICHIGAN STATE POMOLOGICAL SOCIETY.

Your Delegation appointed to meet with our Michigan friends on the occasion of the winter meeting of the State Pomological Society, started for Ann Arbor by early train on Monday, the 6th of December. Owing to some irregularity in the running of the trains, we were delayed on the way, and did not reach our destination until about 10 o'clock that night.

The first session of the Society was well attended, and opened with music. First there was a quartette of horns, followed by a piece of vocal music sung by six voices; an eloquent address of welcome was given by Mr. P. L. Page, and a response by President Lyon; following which was another quartette of horns.

Prof. W. J. BEAL, of the Agricultural College, Lansing, read a paper on the Oaks of Michigan, illustrating his remarks by large diagrams, on which were drawn the leaves, flowers, and fruits of several of the species.

Prof. J. P. STEER, of Ann Arbor, followed with a paper on the Migration of Birds, in which he enumerated the different species of birds found in Michigan, and gave many interesting details relating to their habits, with an account of their migrations to warmer climates during the wintry months.

After a general hand-shaking of the members the meeting adjourned.

Ann Arbor is a very pretty town of about 8,000 inhabitants; the streets are lined with handsome trees, and there are many substantial residences, especially in the suburbs. The Michigan University buildings, which are situated here, are very extensive, and there are at present attending this institution nearly 1,500 students. There is also a very large and handsome Court House, newly built, in which the meetings of the Pomological Society were held. On entering the spacious court room on Tuesday morning to attend the 9 o'clock session, we found a large audience present—from 150 to 200—and this good attendance was kept up throughout all the sessions—varying from 150 to 300—and at the closing session there must have been fully 400 present. Your deputation was very hospitably received, and shortly introduced to the meeting, when we had an opportunity of assuring our Michigan friends of the cordial interest felt by many of our

members in the doings of their Society, and that the desire for a more intimate intercourse had prompted our Directors in sending us to meet them on that occasion.

On looking around the room we were struck with the completeness of the arrangements. On an elevated platform in a conspicuous part of the room was arranged the display of fruit, which was of a most tempting character. The entrance to the hall was tastefully decorated with evergreens; bouquets of freshly-cut flowers were arranged on either side of the desk in front of the presiding officer; while another room was specially set apart for the exhibition of green-house plants. To vary the proceedings, there was a piano, an organ, and several sets of singers and instrumentalists, some of whom gave us excellent music, the musicians being called on several times during each session. In addition to the delegation from Ontario, Ohio was represented by Dr. Warder, and New York by Messrs. Woodward and Hooker; there were also representatives present from Illinois, and many delegates from the Agricultural Societies throughout Michigan.

The first paper on Tuesday morning was by W. W. TRACY, of Detroit, on the Difficulty of Maintaining Good and Pure Seeds.

Dr. WARDER, of Cincinnati, next read an excellent paper on the Ornamentation of Public Cemeteries, detailing at some length the principles which should guide in the planting of such public grounds, and referring to a large number of suitable and unsuitable trees for the purpose.

Tree Pedlars were next discussed and anathematized, and many of their evil ways exposed and vigorously denounced. While it was admitted on all hands that there were some true and worthy men among them who deserved support, there were also a great number of scoundrels, whose only object was to make money out of their unfortunate victims. On the other hand, it was urged that on the whole tree pedlars had been a benefit to the community, and that in a great majority of cases the change from bare barn-yards and other bare surroundings to nicely-ornamented grounds, planted with trees and shrubs, had been effected mainly through the energy and push of the pedlars.

The afternoon was spent in visiting the University, where every attention was shown the members by the professors belonging to the institution. The museum, library, and other points of interest were visited, but most of our time was spent with Prof. Steer—an accomplished and enthusiastic naturalist—in examining his wonderful collections in natural history, made by himself during several years' sojourn in southern countries. In this way time flew rapidly, and soon the shades of evening put an end to sight-seeing. Subsequently we were privileged to visit the microscopical class, where there were some twenty or thirty students, with as many microscopes, studying the tissues of plants, and making beautiful microscopical drawings of their cellular structure, under the charge of Prof. Spaulding and Mrs. Dr. Storrs. We were also shown through the extensive and very complete chemical and pharmaceutical laboratories, which are under the charge of Prof. Prescott, an eminent chemist, and a gentleman widely and favourably known for the distinguished service he has rendered to his favourite science.

During the evening session, Prof. DANIEL B. PUTNAM, of Ypsilanti, read a paper on School Gardening, in which he drew attention to the present neglected condition of school grounds, and the necessity of reform in this direction. He remarked that school trustees cultivate, plant, and adorn their own grounds, while those of the school are left a barren waste. It was argued that beautiful surroundings tend to refine the manners and elevate the conduct of children, and that to cultivate a taste in this direction would give a higher moral tone to schools; that good buildings and well-laid-out grounds were powerful educators.

Prof. WINCHELL, of Ann Arbor, also read a paper on the Climatology of Michigan, and its bearings on fruit culture, which was illustrated by large coloured climatological maps. The advantageous position of Michigan, surrounded as it is by large bodies of water, was dwelt on, and the beneficial lake influences demonstrated by many detailed observations. Lake Michigan alone has a superficial area of 20,000 square miles, and the presence of this large body of water to the west and north-west, over which most of the cold winds pass, and another large body of water on the other side, did much to maintain a moderately uniform temperature, cooling the atmosphere in summer, and much lessening the severity of the cold in winter. The Professor thought that, since the lake

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was in some places as much as 900 feet in depth, it was probable that some of the warmth of the water was derived from the internal heat of the earth.

On Wednesday forenoon a paper was read by Mr. S. W. DORR, of Manchester, Mich., on the Danger of Overdoing Fruit Culture in Michigan, which was followed by an interesting discussion, in which many members took part.

Mr. SCHUYLER, of Chicago, did not believe there was any danger of overstocking the market with good fruit; a large quantity of green fruit was shipped, which was of inferior quality. If growers would pay more attention to grading their fruit, and ship only that which was first-class, they would realize double the price they now get, and save considerably in freight. The second grade of fruit should be dried, and there is any amount of demand for dried fruit, which can be shipped to all parts of the world.

Mr. H. C. SHERWOOD, a large apple and peach-grower in Watervleit, Michigan, believed that if large growers were careful to ship only good fruit, properly branded, so that the public could recognize those which were reliable, they would not be long in seeking out the best qualities, and when found would be willing to pay good prices for them.

JUDGE LAWTON, of Michigan, speaking of the peach trade, referred to the immense number of diseased peaches offered on the markets, gathered from trees afflicted with yellows, and thought that legal power should be sought to enable the various city and town authorities to seize and destroy such fruit, it being unwholesome.

Mr. CHAS. ARNOLD, of Paris, Ont., concurred in many things which had been said, and did not think there was any danger of overstocking the fruit market, provided good fruit was offered. He suggested that fruit should be packed with greater care, and that fruit-growers should seek to know the wants and wishes of the customers they propose to supply, and endeavour to grow such varieties as they would esteem most highly.

Mr. WOODWARD, of Lockport, N. Y., did not think it was possible to overstock the market with good fruit, and thought that abundant crops and occasional low prices were a great benefit to fruit-growers, as it introduced fruits into families who were usually unable to purchase them, and thus created a taste for fruit, which must lead to an increased demand in future years. He thought that people generally did not use in their own families half the amount of fruit they ought to do; they should have it constantly on their tables, as it was promotive of health. He referred to some fruit houses in Lockport which seemed to succeed well. The process of preservation consisted in surrounding the fruit with an atmosphere of carbonic acid gas, so that the ordinary action of the air in hastening decay was prevented.

Mr. J. LAMAN, from the Lake Shore, a large peach-grower, thought that the overstocking of the peach market arose mainly from the fact that growers planted too many Early Crawfords; if they would pay more attention to planting earlier and later varieties, so as to keep the market fairly stocked the season through, the whole fruit crop could be disposed of at reasonable prices.

Mr. HOOKER, of Rochester, N. Y., referred to the extensive use of fruit-dryers in his neighbourhood, whereby all the surplus stock of apples was worked up without waste, so that the idea of surplus fruit, or an overstock of it, was not thought of. He stated that their evaporated apples were coming into extensive use all over the world.

Prof. BEAL, of Lansing, Mich., suggested that since there were a great many inferior apples grown, it might be desirable to top-graft them, and in this way the crop of fruit would be temporarily lessened by the withdrawal of the inferior sorts, and that when the full crop was again ripened, it would consist of apples of that desirable character which would command a ready sale.

Following this, a lively discussion was kept up for some time on the relative merits of the different fruit-dryers or evaporators in use, and the more general introduction of small family dryers urged, so that every farmer might be in a position to preserve his own surplus fruits, without incurring the delay and trouble incident to taking them to any of the larger drying establishments. It was also stated that the light colour of the dried fruit was due to the use of a small quantity of sulphur which was burnt, when a powerful bleaching agent—sulphurous acid gas—was given off.

Prof. COOK, of Lansing, read a paper on Insect Enemies and Modes of Fighting

Them, in which he recommended the use of London purple for the codlin worm on the apple, the poison to be mixed with water, and showered on the fruit while young by means of a syringe or sprinkler. The Professor referred to some experiments he had made with this mixture on a Transcendent crab tree laden with fruit in support of his views.

MRS. REYNOLDS, of Ann Arbor, also read a paper on the Origin and Advantages of Association; and Mr. MCNAUGHTON, of Jackson, one on the Cultivation and Uses of the Less Common Vegetables.

In the evening, following the election of officers, the several Committees presented their reports—on Flowers, Plants, and Decorations, by W. Saunders; Fruits Exhibited for Premiums, by G. H. LaFleur; Other Fruits, by H. C. Sherwood.

The Committee on Fruits for Premium awarded the prize for the best five varieties of apples for market to the following:—Baldwin, Northern Spy, Red Canada, Jonathan, and Ben Davis—the latter variety being put on this list, not on account of its good quality, but from the fact that it ships so well. Best five varieties for cooking:—Rhode Island Greening, Baldwin, Bellflower, Æsopus Spitzenburg, and Northern Spy. Best five for dessert:—Newtown Pippin, Hubbardson's Nonesuch, Jonathan, Wagener, and Belmont.

The display of apples was excellent, consisting of some 200 plates of the following varieties, viz.:—Baldwin, Yellow Bellflower, Ben Davis, R. I. Greening, Fallwater, Smokehouse, King of Tompkins County, Mother, Jonathan, Vandevere, Seek-No-Further, Cole's Quince, and one or two other old varieties. The apples were well coloured, and very fine specimens. The Yellow Bellflowers were equal, if not superior, to any we had ever seen.

Several seedling apples were exhibited, and one named McLellan attracted considerable attention. It was a very pretty, medium-sized, red apple, strongly resembling Fameuse in size and shape, but of a much brighter red; we did not, however, think it equal to Fameuse in flavour.

The apples exhibited by your delegates received their due share of attention and praise—the Cox's Orange Pippin and Swaizie Pomme Grise being without doubt the highest-flavoured dessert apples exhibited.

There were very few pears shown, and these not of extra size or appearance. The varieties were Lawrence, St. Germain, Beurre Diel, and Vicar of Winkfield.

Only three varieties of grapes were observed, viz., Salem, Rogers' No. 15, and Niagara. The latter were shown by our indefatigable friend, Mr. Woodward, of Lockport, N. Y., and were decidedly the finest in appearance, and will, in time, probably displace the imported white Malaga, and be pronounced by most people superior to that variety in flavour.

In addition to the above-named fruits, there were shown many sorts of dried fruits and some twenty different kinds of fruit jellies, the latter by Miss Fletcher, of Ann Arbor, who gave by request some excellent practical instructions as to their manufacture, and also as to their nutritious and medicinal qualities.

Your Delegation are of opinion that we might, to our advantage as an Association, copy some features from the Michigan meeting. The introduction of music to enliven the proceedings was a great attraction; also the large and conspicuous display of fine fruits in full view of the audience, as well as the ornamental plants and flowers. In these and perhaps some other matters we might follow their example with profit.

We cannot close our Report without referring to the very kind and unlooked-for hospitality of the residents of Ann Arbor in freely opening their houses to entertain the visitors and strangers, who were so cordially received as to be made to feel perfectly at home wherever they went. We shall always look back to our visit to Ann Arbor with pleasure.

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GRAPES.

A discussion then ensued with regard to grapes, the President calling on Mr. Beadle to introduce it.

MR. BEADLE.—I hardly know where to begin on this subject; but perhaps I may start with varieties of grapes. There is one grape in particular that I had my attention called to by one of the members, who at exhibitions showed it among the early grapes—the Janesville. I published a letter from him in the *Horticulturist*, and that has called out some other remarks in regard to that variety. I do not know anything about the Janesville personally; but I got the impression a long time ago, from those who had grown it, that it was a grape of inferior quality—ripening early, to be sure, but of such a character that if we could get another grape to ripen about as early, ten to one that we would get a better one. I have never planted it, and therefore I cannot speak from personal experience of it. The earliest grape with me for some time past has been the Hartford Prolific, but I never thought very highly of it. It had a good many faults. It dropped badly from the cluster; it had not a very high quality—rather a tough pulp. However, it would sell, because it was pretty early. Then there came to my notice next after that a grape called the Champion, which was earlier still than the Hartford Prolific—in fact, so far as my own grounds are concerned, it was the first to ripen. It would sell at from fifteen to twenty cents a pound in the market on account of its earliness. But I quite agree with a remark that I heard a gentleman make, that there was but one fault to find with the Champion, and that was this, that it was good for nothing when you got it. Yet were I living away up at the North Pole, or somewhere where the Champion was the only grape I could get to stand the climate and to ripen, I would probably plan it because I could not get any better. To my taste it is a very poor grape—very poor in flavour. Some of my neighbours planted it, and for quite a while did very well with it; but they came to the conclusion that they must take it up and plant something else, because they only got two or three days' sale of it before some other grapes were brought into the market from farther south that knocked it endwise. The next variety that ripened with me was Moore's Early. I have tried it for two or three years, and I find it ripens about the same time as the Champion. In point of quality I call it as good as the Concord; some say it is better. I am hardly prepared to call it better; but I do not hesitate to say that I call it as good as a well-ripened Concord, and that is not a bad grape. I have not fruited it in quantity enough yet, nor have any of my neighbours, to enable me to tell how it will take in the market; but for whatever time we may have an early grape in the market before it gets into competition with those from farther south, I am inclined to believe that Moore's Early will take a place before any early grapes that we have thus far had. The next grape in ripening that I have had my attention called to, is this one at Lockport, which no one has got but the Lockport people, and which they are determined, I believe, no one shall have but the Lockport people. That grape, I find, ripens about with the Hartford Prolific. I so find it, not that I have fruited it in my own grounds, because I have not got a vine of it, but I was over at Lockport last year about the time that the Hartford Prolific was being gathered for market, and ate of that grape then, and preferred it to the Hartford Prolific. I saw it two or three weeks later this year, and it had improved by ripening. Whether it keeps improving until the frost comes and takes all the leaves off I do not know. It has a good eating quality when the Hartford Prolific begins to ripen, and I believe it would be preferred to the Hartford Prolific, sent to market with it. There are some other new grapes that I do not know much about. The Duchess grape and the Pocklington grape I do not know anything about only from having seen them at exhibitions. They are white grapes, and from what I have seen of them I think they are grapes of a good quality. As to their time of ripening I cannot say anything. About the time that the Hartford Prolific begins to get ripe, some varieties of the Rogers begin to get ripe also. There is the Massasoit, the No. 3 if I remember right. The clusters on it are not very large; some of the bunches are very fair, while a great many of them are small. The berries are very good. That variety, like all the rest of the Rogers grapes, is best when just ripe; if the fruit is

left hanging on the vines till dead ripe, I do not like it ; it loses very much of its sprightliness. Then there is the Wilder, Rogers No. 4, and Rogers No. 15, another red grape, which I like very much. They get along about the time that the Concord becomes ripe. I like the Concord fully as well as I do any of these Rogers grapes. No. 15 I think I like the best of any of the Rogers grapes I have eaten. It has a peculiar flavour : I suppose it has some of the native flavour toned down. It reminds one a little of some of the Muscat grapes of Europe. Not that the comparison is a very happy one. It is more liable to mildew than most of the Rogers grapes ; yet I find they will all milder more or less—some one season, some another. This last season has been a very bad one for these Roger grapes mildewing about St. Catharines. I have said nothing about the Delaware. You are all familiar with it—a very small grape, but a grape of good quality, and a very pleasant-eating table grape, used somewhat for wine. About making wine I do not know anything. Coming down among the later ripening grapes, I value the Iona very much—if I could only always ripen it ; that is where the rub comes. There will be seasons when I cannot ripen it. I consider that grape just about the very best for flavour that we have ; and if I could get it to ripen about the time of the Champion, the Hartford Prolific, or even the Concord, I would be perfectly satisfied—I would think I had the *ne plus ultra* of grapes. Of course I would want it to stand the climate well. I am now just speaking of the quality of the grape. Among the more acid grapes, the Clinton is one that I value because of its keeping qualities when it is fairly ripened ; and it always ripens with us—I do not know that it ever fails unless it has been allowed to overbear so that it cannot ripen. It is prone to bear very heavily. I find that it will keep if you just lay it in a cool place. Put it away on a shelf, on a dish—you need not pack it at all ; only put it where it is cool and dry. I generally put them up in my attic, and they keep there until this time. I think they improve by being kept ; the tartness tones down until at this time of the year, if you are fortunate enough to keep any till this time, they are just a nice, sprightly, fresh-flavoured grape. They do not cloy ; there is not so much sweetness about them as to make you tired of eating them. They are always juicy, sprightly and fresh. Since I published in the *Horticulturist* an article in regard to the Burnet grape, I have received several letters about it, most of them saying they think we have made a mistake as to it—one that it is not hardy enough to be grown in more northern sections of the Province. Others say that even when it is grown it is only fit for the amateur. The skin is very tender ; breaks so that you cannot carry it to market ; and it has several other defects—I forget what they all are now. I will publish the letters I have received giving the testimony in regard to it.

MR. GILCHRIST.—This season in Guelph has been the most favourable I have known for twelve years. We have ripened the Clinton this year quite successfully, and we have not done that for ten years before. There were no June frosts to interfere with the grape, and consequently we have had a nice crop of them this year. Mr. Benham has been trying to grow grapes for forty years, and has been more successful this year than any year yet. Last year he ripened the Champion, which was the first grape he ever ripened ; but I think he planted wrongly. He planted up against his barn, where the sun always strikes, and it was very soon in leaf in the spring. At the Model Farm they have planted grapes, and they have ripened for three years. They have planted them where a current passes through, and in that way they have been more successful than those who have planted against the wall.

MR. CROIL.—We find the Hartford Prolific the earliest grape with us. The Delaware and the Clinton ripen with us very well.

THE PRESIDENT.—The Concord, in our section of the country, is a perfect failure ; I have never had a vine of that sort succeed yet.

MR. BUCKE.—I had hoped that when our esteemed Secretary got on his feet to say a few words about grapes, he would have said something about the Burnet grape when he was dealing with the excellencies of the Iona.

MR. BEADLE.—The reason I said nothing about the Burnet was, that I have never eaten a bunch of the Burnet in my life. I have not yet fruited it.

MR. BUCKE.—I got a Burnet grape from the Association, and I can speak very highly of it. It has been fruiting now with me for the last two years, and this year it

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had a very heavy crop on it—so heavy, in fact, that I had to remove a great many bunches from it. I think I never had a grape that grew so well as the Burnet. It was fully fifteen feet long, and it was about three years ago that it was sent out. Not only did the Burnet grape bear, but I had some layers from it this year that bore also; and I find it is one of the strongest growing grapes we have. I think the flavour of it is all that has ever been said about it by the Fruit Growers' Association. I consider it is a very great acquisition to the country; and I am perfectly satisfied that the more it is tried the more people will like it. Of course you cannot expect a young vine to fruit as well as an old vine, or to ripen its grapes, perhaps, as early; but I claim that the Burnet grapes will ripen quite as early as the Concord; and they are a long way ahead of the Concord in flavour. The Burnet is certainly the best-flavoured outdoor grape that has been grown in Canada to my knowledge. There have not been a great many fruited about Ottawa; but all who have fruited it are very much pleased with it. This has been an exceptional year for grapes; but I hope that in other years the Burnet will ripen as well as it has done this. It is so very thrifty that care will have to be exercised that too many branches are not allowed upon it.

MR. BEADLE.—How hardy do you find the vine?

MR. BUCKE.—The Secretary talks about hardy grapes: we do not know what people mean by a hardy grape, unless it is one free from mildew. All grapes are hardy with us in Ottawa. Even the indoor grapes, if they are covered with soil, escape injury by frost in Ottawa. Although I have heard the term "hardy grapes" often used, I never could make out what was meant by it. The wood always comes through the winter well when it is protected. We cover all grapes. We always put from three to six inches of earth over them, and I have never lost any by frost yet. I have a Creveling which I consider quite as early as the Hartford. I do not think anything at all of the Hartford; I think it is a miserable thing. It ripens pretty early; but as soon as it ripens it drops; and it will not do to cut a bunch of grapes off the vine before they are ripe, because they will not ripen like an orange or an apple. We consider the Creveling a good grape. The only objection to it is that it does not set very well; still, it gives good bunches. I have a Lindley, and I esteem it very highly. It is a very good bearer, and it is a very nice grape. It ripens fully as early as the Concord—I think a little earlier. We have the Champion down there also, and we do not think much of it. It is early, and of course it is a good grape to sell, and people buy grapes without knowing much about them. I have the Othello, and it produces perhaps the biggest bunches of any grape grown at Ottawa. It is not an early grape; it requires the frost to bring it to perfection. It bears a very heavy crop. I have also the Eumelan, which was sent out by the Association. That is also a very fine grape; but, like the Creveling, it does not set well. I also have the Miller's Burgundy. It is a foreign grape—no cross of any native grape in it. It is one of the nicest grapes to eat that we have; but it sets so that unless it is thinned it is of no use. Still, it is a very fine grape; and I think everybody ought to have a vine of it. It is also an early grape; it is very nearly as early as the Champion. It is a very fair grower. I think it would be a very good grape as a parent to hybridize from. It has all the qualities of a foreign grape; it is thin-skinned, has no pulp, and is very sweet. It is larger than the Delaware, although it is not a very large grape, even when it is thinned. I find my grapes all do well. I do not find any variety more tender than another.

MR. BEADLE.—In this climate we are not in the habit of taking down our grape vines in the fall and burying them. I suppose ninety-nine hundredths of our grape growers leave their vines on the trellis all winter. I mean by a hardy grape vine one that will remain on the trellis all winter, and grow the next spring—not be dead. I have seen the Isabella, which we ordinarily esteem a hardy grape, so badly injured by the frost that half the buds would not break in the spring. I mean by a hardy grape vine one that will bear the winter, and the buds of which will start in the spring—very near to the ends of the vine, at any rate, if not entirely to the end. Most of these foreign vines, such as Miller's Burgundy—although Miller's Burgundy is perhaps as free from that as any—succumb after a year or two to the mildew. They do not seem to be able to stand our summer. I do not know what is the reason; but the mildew attacks the foliage; and once the

mildew has gone through the leaves pretty generally the wood is not ripened, and when the wood is not ripened it will not stand the winter. Sometimes, however, these foreign grapes will stand for one, two, three and four years, and produce good crops of fruit. I have seen enthusiastic Europeans bringing over those grape vines with them, and they have told me what good grape vines they had got; but all these beautiful foreign grape vines—and to this I have never known any exception in our climate in the County of Lincoln—are sooner or later attacked with mildew or disease of some other sort. I have a Miller's Burgundy which grew over my smoke-house, and though latterly the smoke-house has been removed the vine is still there. There is a Privet hedge near by, which it runs over; and some years it matures, and some it does not; it matures about every other year. When it does mature I get a pretty fair crop off it. The foliage is comparatively free from mildew, but the fruit becomes mildewed.

Mr. ARNOLD.—I used to cultivate Miller's Burgundy, and thought very much of it; and although it is considered a foreign grape, it is quite different in foliage from any foreign grape that I know of. It never mildewed in the foliage with me, but mildewed very badly in the fruit, and was so thin in the skin that the wasps punctured it very badly. I think it is one of the finest grapes that can be used for pollen to be placed on some other grape. If I were going to cross again, I would prefer Miller's Burgundy to any. I would like, if we had the power, to annihilate some grapes, and the Hartford Prolific is one that I would put out of existence if I could. It is a grape that promises all the year till you are going to pick it, and then it is on the ground. There is another grape I would like to put with it—that is, the Northern Muscadine; and another is Perkins's. These grapes have no redeeming qualities. Rogers' No. 3 is quite as early with me as the Hartford Prolific.

Mr. SAUNDERS.—There is no accounting for tastes. There were some friends in my garden this summer; there were Northern Muscadine, Iona, Concord, Delaware, and some other varieties of grapes growing there; and I was surprised at these friends going for the Northern Muscadine—they thought they were the best grapes of the lot. It has a strong rank flavour, and I fully agree with Mr. Arnold that any person whose taste is cultivated in regard to grapes would not want to eat it. With regard to the Janesville, mentioned by the Secretary, it bears a good crop every year; it is early, and is a fair quality of grape. I have not had an opportunity of comparing it with the Champion; but I should think it was a great deal better than the Champion, from what I know of it. I was favourably impressed with the grape as a grower and cropper, and also as to its quality. As far as quality is concerned, if I was to have my choice of all the grapes I know to eat, I would take the Burgundy in preference to any other, although it has been a slow grower on my ground. I think that of all the grapes that have been introduced for many years the Burgundy stands at the head for flavour, in its freedom from pulpiness, and in that very nice combination of acid and sweet that it has. Next to the Burgundy I would place for my eating the Canada, when it is sufficiently ripe. But, as I said before, there is no accounting for tastes; and my taste would perhaps not coincide with that of many gentlemen present. I like a grape with a little acid in it. I would rather eat the Clinton when it is fully ripe than the Delaware; I think there is more character in it. The Eumelan has done very well with me, but I think it is a poor quality of grape. It is not a good grower, but it sets fairly well. The Creveling I think very highly of; and although it sets its bunches rather poorly, yet it bears so many of them that on the whole you get a very good crop off a vine of that variety. I think it is among the pleasantest grapes to eat that we grow. I have tried the Burgundy grape Mr. Bucke speaks of, and with me it has been a very slow grower. It is very short-jointed in the wood, and seems to retain its foliage very well, and perhaps it may turn out better in a year or two. Iona does not ripen well in our latitude, and for that reason I have never thought much of it. I was surprised to hear the Secretary speak of it being so high flavoured. I have never had it develop enough, perhaps; but I thought it a watery grape. The Seneschal I have never fruited; but I have eaten it during this year, and I think if it is hardy enough the matter of its being thin-skinned won't prejudice people against it, because we want grapes for the amateur as well as for market, and the largest proportion of our members are persons who grow their fruit for home consumption. Another grape that I like very

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well is the Brant. It has fruited now with me for two years; and it has a pleasant acid flavour somewhat similar to that of the Canada, but I think is hardly so sprightly. It bears a long bunch, and fruits very well. The Rogers' Hybrids have been a failure with me during the past year. I think the No. 15's mildewed about as badly as any—or perhaps the Salems the worst of all; they have all mildewed badly. If we had many seasons like last, I do not think the Rogers would remain in fashion for many years. It was not only in my vineyard that this was the case, but in all the vineyards around London. I do not lay any of my vines down in the winter.

MR. WOODWARD.—We have got a great many new grapes with us, and a good many I regard very highly. I was glad to hear the testimony of the Secretary to the merits of the Moore's Early. I think of all the black grapes we grow in Western New York, I regard the Moore's Early as the best. The Champion we only grow as a curiosity. A friend said to me once, "There is one good thing about the Champion, and that is that the birds won't eat it." Anybody with a human taste would prefer the Moore's Early to the Champion. There is one grape that has been mentioned here that we regard very highly, and that is the Brighton. It is a Hybrid grape, and we think that all Hybrids want to be treated differently from those that are purely native. Where the Brighton will succeed it will please almost everybody's taste. You want to eat it when it is ripe; by hanging on the vines it becomes rather pasty. I do not think one would be safe in planting the Brighton largely for a market grape; its propagator does not claim it to be a market grape. In the first place, Mr. Moore crossed a Hamburg and the Diana, producing a grape that was a good deal too tender for our climate. Then he crossed that Hamburg-Diana on the Concord. It will succeed with good care in a great many places. The Ulster Prolific and the Poughkeepsie Red are good grapes. The Poughkeepsie Red is about as good as the Delaware. These are both seedlings from the Delaware. Of the white variety I never saw a finer show than was made in Mr. Ricketts' grounds this year with the Lady Washington; and he is not a very good cultivator either. His grapes were not receiving very high care; but this variety looked very well, and if it proves to be as good everywhere as there it will be a good grape.

MR. BEADLE.—Does it seem to be subject to mildew?

MR. WOODWARD.—It was not mildewed there, but it was on a high sloping hill. I saw no grapes on the Hudson this year that were mildewed. The Lady Washington is about as early as the Concord—perhaps not quite as early. I do not believe its parentage is properly stated. Mr. Ricketts claims it to be a seedling of Allen's Hybrid with the Concord; but any man who saw a cluster of Lady Washington and a cluster of Montgomery side by side would be willing to swear that it had Montgomery blood in it. I have seen clusters of them that you could not tell apart. I saw the Duchess on its own ground, and it did not make as good a show there as I saw at other places.

MR. BEADLE.—How does the Duchess ripen as compared with the Concord?

MR. WOODWARD.—About the same time—not any earlier. They say they have had a very dry season on the Hudson River, and that that accounts for its not presenting a better appearance. I saw the Duchess in several places where it looked very much better. I saw the Prentiss growing, and I thought very highly of it. It produces a fine cluster—not very large, but of a very good quality. It is not any earlier than the Concord, but I would not like to say it is any later; I do not know enough about it. The Pocklington I have not seen in bearing myself. I have seen the fruit in several places; but I have not seen it on the vines. I do not think it is as early as the Concord. When we were at Albany, at the State Fair—which was from the 13th to the 17th of September—right close by there was a gentleman showing grapes who lives near Mr. Pocklington. I was surprised at not seeing the Pocklington grape there. I expressed that surprise to this gentleman, and he said: "It is no wonder to me; it is not ripe." And he was showing grapes from very near that vicinity.

MR. PETTIT.—The varieties that I have cultivated chiefly have been the Concord, Diana, Delaware, Brighton and Champion. The Champion is a grape of a quality that I do not consider extra at all. Its earliness is its main feature. I have fruited the Pocklington this year for the first time. It gave me two bunches of very nice grapes, and they ripened quite early, I think earlier than the Concord. Of course it is a very

young plant; this is its second year. I fancy the fruit will ripen earlier as the vine gets age. I consider the fruit very fine—indeed, extra. I have not noticed the Pocklington fall any; we scarcely gave it a chance to drop any. Quite a number of my friends were at my place, and we devoured them; they were thoroughly ripe.

MR. MORRIS.—The Secretary speaks of the Rogers 15 as the best of the Rogers'. I would differ from him there; I would place No. 8 as the best. And as for the Iona, which he speaks so well of, I do not think it is worth room. I have a great many vines of it; and I get so little fruit and so few bunches that I have dug most of them out. The Seneschal bore with me this year, and the bunches are very fine in appearance; but I think the quality is very bad. In point of quality I would put the Brighton first of all. I think it is the best grape I have tasted; and that is the character I have got of it from most American grape growers I have talked to. With regard to the Pocklington, of course I am interested in that, and do not want to say much about it; but I will say this: it is a grape that has been run down very much by parties interested in other new grapes; at the same time I believe it has carried off more honours at leading Horticultural Exhibitions than any other new grape out.

MR. SAUNDERS.—What time does it ripen as compared with the Concord?

MR. MORRIS.—On Mr. Charlton's grounds, in Rochester, it ripened about the same time as the Concord. It ripened there a week earlier than at Sandhill, its own grounds.

MR. WOODWARD.—The Niagara was never yet entered for premiums at any exhibition.

MR. WELLINGTON.—The Brighton is, I think, a grape that is hardly good for the shipper; but is rather one for table culture, by the amateur. I think it has no equal as an outdoor grape. As to hardiness, I think it will stand very closely alongside the Champion. Another new grape which has not been mentioned is called the Early Dawn. I have not seen a great deal of it, and am not interested in it; but I have noticed that it is very early, and of good quality. It is something like the Brighton as regards thin skin and lack of shipping qualities. But the main point to be decided now is as to its hardiness; that is the test that is applied to most of the new fruits that we are bringing out now. There was a remark made about the Pocklington not being shown. This year Mr. Pocklington met with the misfortune of having all his grapes, or nearly all, destroyed by a severe hailstorm, so that there was nothing left but a few small clusters, and he was unable to make any display. Mr. Pocklington is under the disadvantage of ripening his grape in a section of country not adapted to fruit culture, while most other new varieties are brought out in a section favourable to them, and are thus given a chance. The Pocklington fruit that has been shown, has been shown at a disadvantage on that account. This season for the first time we ripened the Pocklington in a favourable locality, in Mr. Charlton's grounds, and it ripened alongside the Concord a few days earlier than it was fully ripe. It hangs well, does not drop, and is a good keeper. I ate Pocklington grapes two years ago, late in the season, after the snow fell, and they were then sound and of good flavour. The vine I consider as hardy as any of the vines that have yet been put out. I think it will stand any place that the Champion will. The place where it originated is a good test for it on that point.

THE PRESIDENT.—I fancy that I have been perfectly successful this year in grafting grapes; so much so, that when I pulled one vine up—a Brighton grafted upon one of Rogers' Hybrids—I found that the graft had so completely taken that you could scarcely discern where the union was. The secret of success in grafting grapes lies in one thing that we must do, and that is, lift the vine that we are going to set the scion on, and then set it back again. This appears to check the flow of sap that drowns the graft. You may depend on perfect success if that is properly done. Every scion that I put in last year not only lived, but grew well. I would rather have a good cutting with one eye than have two poor vines. With respect to varieties, I think very much of the Brighton grape; but if it is just ripe to use to-day, you must not leave it till to-morrow. It deteriorates in flavour very quickly. It appears to have a dryness, a lack of sprightliness, when it is a little over-ripe, or, as we term it, fully ripe. It is sufficiently early with us. I have never been in the habit of either praising the Burnet grape or running it down. I have originated the vine, and I have been willing to allow it to stand on its

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own merits. On my grounds there has never been a grape that would compare with it for a moment. This is the first year that we have ever placed any quantity of the fruit of it in the market; and although it has been brought into competition with Delaware, with Concord, with Brighton, with nearly all of the Rogers' Hybrids, and with many other fine grapes, I think I am perfectly safe in saying that it commanded fifty per cent. more in Belleville market than any of them. The first grapes in the market were the Champion and the Hartford Prolific; and the people had become so satisfied with grapes when these were gone that they did not want to see another black grape. The first few bunches that we put in the market they would hesitate about buying; but as soon as they commenced tasting them, there was no difficulty at all in getting fifty per cent. more for them than the others brought.

MR. ARNOLD.—Years ago I used to graft grapes in various ways; and I have put little pieces of cutting—no matter what kind—on a little piece of root, put that in the hot-bed, and there was no difficulty whatever about growing them. I have sometimes found that when you stick one graft into each root there is such a flow of sap that it kills it; but by putting several grafts in a large root I have no trouble.

THE PRESIDENT.—In our section of the country any boy ten years of age appears to understand grafting; and we graft the grape the same as we would an apple, pear, peach, plum or any other variety of fruit—whip-graft it. We take off a stub, split it, sharpen a scion, and put it in just the same as you would in stem-grafting. You can just graft it as you please; only the union should be placed beneath the surface. I have tried without wax and with wax. I used cotton covered with wax, the same as the nurserymen use, when I whip-grafted; and some I grafted with just matting, and I could not see any difference. I took the vine I grafted entirely up when I was grafting it. If I were going to graft a new variety that I was just going to make a cutting of, I would take a vine of a strong, healthy-growing variety, lift it out of the ground, preserve all the fibrous roots possible, and after setting the graft, plant again.

A MEMBER.—In the same place?

THE PRESIDENT.—Oh, where you like; it does not matter. I think where a nurseryman gets a large lot that are unsaleable, it would pay him to graft on them.

MR. ARNOLD.—I pay no attention to the bark in grafting grapes. The sap of the grape vine, as I understand it, rises all through the vine. My method has been, if I have a large vine two inches through, to cut the roots off here and there all round it, and stick in a scion to every root. You check the flow of sap by putting in so many grafts; and I think that by tying it with a good strong string in the fall, nine out of every ten of them will grow. If you cut the roots off a long distance from the original stock, you will not be troubled with the suckers of the original vine.

MR. BUCKE.—Mr. President, there is one remark you made that I must take exception to. You say the Burnet grape is the best market grape to have; I find it the poorest, for the simple reason that they like them so well at home that I never get them to market at all.

MR. GILCHRIST.—I have seen the grape budded in the fall very successfully. I bud before the leaves fall.

The meeting was then adjourned till the next morning at nine o'clock.

Wednesday, January 19.

The meeting was called to order at 9.30 o'clock.

MR. A. M. SMITH read the following report of the Committee on Fruits on Exhibition:—

Your Committee on Fruits on Exhibition beg to report as follows: Charles Arnold, of Paris, shows five varieties of his hybrid seedling apples: No. 1, an apple of the Spitzenburg flavour and size, but more like the Baldwin in shape and colour, but is somewhat russeted, which mars its appearance; very good in quality. The Ella, another apple something of the same class, which has been before described by com-

mittees of the Association. A sweet Russet, of no extraordinary merit. Fine samples of the Ontario, which will fully sustain the reputation given it by the Association. Also, fine samples of Arnold's Beauty, which is indeed a beautiful apple in appearance, of a mild sub-acid flavour. Thomas Beall, of Lindsay, shows good samples of Yellow Bellflower, Snow, Golden Russet, and Grimes' Golden, which show that good fruits can be grown in that section. A. H. Pettit, Grimsby, shows Strawberry Pippin and another red apple, name unknown; also, beautiful samples of the Northern Spy. A. M. Smith shows the Grimsby Beauty, a beautiful apple in appearance, somewhat resembling the Maiden's Blush. John TenEyck, Grimsby, shows a large sweet seedling apple of good flavour. W. T. Pettit, Oakville, shows a small dark red seedling apple, very beautiful in appearance and fair in quality, which would doubtless sell well in market. P. C. Dempsey, Albury, shows the Winter Peach, a large apple somewhat similar to Gloria Mundi, but not quite as large. Also, five varieties of winter pears, Beurre de Gheline, Bergamot d'Esperin, Doyenne de Hiver d'Alençon, Beurre Gris de Hiver and Josephine de Malines—the latter a pear of very great excellence for a winter pear.

A. M. SMITH.

A. H. PETTIT.

E. MORRIS.

Mr. HOLTON moved, seconded by Mr. ARNOLD, that the report be received.—*Carried.*

Mr. WOODWARD.—If it be in order, I would suggest to the mover of the resolution which was offered and passed yesterday with regard to packages for fruit, that he move that that matter be reconsidered, and that then the committee be instructed to act in concert with any committee that may be appointed by the Western New York Society and by the Michigan Society, so that, if possible, we may secure a uniform size in the packages. If they would establish a uniform size for the apple barrel, that would be the end of it. We have continual warfare on our side with regard to that. It is claimed on the one side that it is too large, and on the other that it is too small; but I think the dealers, the fruit growers, and all would be satisfied if a uniform size could be adopted.

The PRESIDENT.—I cannot see that it is necessary to reconsider that motion, but only to give that committee instructions to act in the matter. Another resolution is all that is required.

Mr. ARNOLD.—It is very annoying to a man when he is buying apples to have one person sending him only two bushels and three pecks for a barrel, while another sends him three bushels. It is not only so with regard to apples, but also with regard to potatoes.

Mr. A. M. SMITH moved a resolution that the committee act in concert with any committee that may be appointed by the Western New York or by the Michigan Horticultural Society, which was carried.

REPORT OF COMMITTEE ON VEGETABLES.

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

Your Committee appointed at last winter meeting beg to report the result of their labours, as follows:

The magnitude of the work before us, were we to go into researches connected with all the different varieties of vegetables, was at once seen, and knowing that we could only give a certain amount of time and study, have devoted ourselves to a general view of the subject, which we place before you, hoping it may serve to inspire further thought and study upon this important feature in our agricultural productions. No dinner table can now be said to be complete without a good array of vegetables, although, to a great extent, their quality has been overlooked by many housekeepers in their selection of these valuable additions to their tables. Watery, solid potatoes, stringy turnips and beets, with tough and woody parsnips, are among some of the unwholesome dishes people are treated to, in which case the cook generally gets the credit of having little

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knowledge of her work, while at the same time the fault lies in the quality of the vegetables themselves, which quality is due, not alone to the particular variety of each, but to the soil upon which it is raised and its manner of culture. This being a fact, it will not seem out of place to urge upon agriculturists the importance of a more thorough study of vegetables, the method of culture that will tend to develop their best qualities, and the varieties that experience has proven to be the best.

We will draw your attention first to what is the leading and most valuable vegetable grown—the potato. This valuable and well-known esculent is a native of the mountainous parts of tropical America; was taken to Spain and Italy in the sixteenth century; in its wild state it was not more than about an inch in diameter, with insipid flavour and quite unpalatable.

The first varieties used in this country came from Europe; the quality was then very poor, but now, by cultivation and the production of new varieties, by planting the seeds, by grafting, by hybridizing, etc., it has become of excellent quality, and an indispensable article of food.

By its valuable qualities, and its general consumption everywhere, the potato ranks in nearly all countries as a leading food staple. It may, therefore, be discussed with interest and profit. There may be some other crops grown on a larger scale, yet no product of husbandry is more variously useful, or more generally raised by farmers, and none, if we except wheat, more universally consumed by the people. This being the case, it follows that there is much importance to be attached to the culture of this crop. The average yield of potatoes in this Province is less than one hundred bushels to the acre, although six and even eight hundred bushels have been raised off an acre of ground. No crop, perhaps, appreciates good cultivation and soil more than the potato, which will be seen from the fact that while the average yield is not over one hundred bushels, it is possible to raise eight hundred. It is said that the man who will make two blades of grass grow where but one grew before, is a public benefactor; we say, then, that the man who can make eight hundred bushels of potatoes grow where but one grew before, is also a public benefactor. Not only is the potato a good article of food for the human family, but it is valuable as food for domestic animals as well. At the late Centennial Exhibition at Philadelphia, there was a collection of 500 named varieties of potatoes exhibited; out of these, however, there are comparatively few varieties which it is necessary for farmers to attempt to raise. In this Report we propose only to notice some of the leading and new varieties, and in doing so give you such information as we have been enabled to gather from observation and study, together with what we learned through the experience of leading potato growers, and will attempt to describe accurately each variety noticed, besides presenting samples.

Alpha.—A seedling from the Early Rose; tubers of medium size; oblong; somewhat flattened, with eyes slightly depressed; colour, a clear white with a slight tinge of red about the eyes; flesh very white; fine grained; dry and firm, with flavour decidedly excellent; is good any time through the year when still green and growing; stalks short and close-jointed, seldom exceeding a foot in height; leaf broad, light green, with a glossy upper surface; tubers cluster at the base of the stalk. The Alpha has been awarded the highest honours both in Britain and the States for general excellence; it has been thoroughly tested in Canada, and succeeds well. It is, however, not very productive. Mr. J. H. Rowe, of the Township of King, in the County of York, has grafted it into the Burbank Seedling, which is both a very productive and fine potato, and he hopes to obtain from this union a valuable potato for general cultivation.

Breese's Prolific.—Vines medium height, bushy and spreading; tubers large, regular and smooth, slightly oblong and somewhat flattened; colour a dull white, inclining to russet; eyes slightly depressed, and containing a pinkish tinge; flesh white and firm; it cooks quickly; is very mealy, and of excellent quality; matures about two or three weeks after Early Rose, but is not so prolific as was at first claimed.

Beauty of Hebron.—Appears to possess almost all the requisites for a first-class potato; it is very early, about a week before Early Rose, and ten or twelve days before Snowflake. Its growth is rapid and luxuriant—so much so that the Colorado beetle has usually but little effect in checking its growth; the tubers, shaped like Early Rose, are

smooth, slightly tinged with pink around the eyes, which turns a pure white in winter; flesh solid, and so far has shown no tendency to rot; the yield is enormous, the tubers lying closely together in the hills; when cooked they are mealy, and of rich delicate flavour. It has been well tested, and the reports from all quarters are so assuring that we have no hesitation in concluding that this variety will very soon supersede the justly popular Early Rose. The only point that can be mentioned thus far against it is a tendency to grow knobby in strong land, but even this can be overcome by carefully selecting the seed.

Burbank's Seedling.—A seedling from the Early Rose; tubers large, long and slim; eyes few, and slightly depressed; flesh white, fine grained; dry and floury when cooked. It is very productive, and commands a high price in the market, owing to its general good size and fine appearance. Is not early—at all events not so early as at first claimed.

Blue Pink Eye.—Is an old variety coming into cultivation again in some sections; it succeeds admirably on new land, but is apt to run out unless seed is frequently changed from opposite soils.

Blue Kidney.—Stem upright and compact, about two feet high; tuber medium, and slightly curved; colour very dark-bluish purple, with fair flavour. The kidney family are apt to run out soon, and often succeed best in dry seasons.

Brownell's Beauty.—A large handsome potato; oval, red; clusters closely around the stalk in the hill; easily dug; is a good cropper, but not generally popular for the table.

Bermuda.—A new seedling, which is not likely to find its way into the market. It is not worthy of general cultivation.

Black Heart.—An English variety; is being tested in Ontario, but thus far has not given promise of superiority.

Brownell's Superior.—Is a sure cropper; its tubers are medium to large, elongated, oval or cylindrical; colour dark, or copper colour; very uniform and handsome in appearance; skin very smooth; eyes few and small; veins strong and healthy; it ripens late. Not a desirable potato for table, but excellent for cattle.

Buckeye.—Is being introduced into some sections as a new and very excellent variety, but it is an old variety and has nothing to recommend it for cultivation.

Compton's Surprise.—Oval oblong, with eyes sunken, brow prominent, colour reddish purple, flesh white and sound. Mr. Rowe reports this as a truly surprising variety; he says that the last spring he planted eighty sets and only three came up, and when he peeled them for use at least half the potato would be wasted. Others place it at the head, and as first-class in quality and production. Wants good soil.

Climax Early.—Uniformly large, long, cylindrical; skin white; eyes sharp, shallow; flesh white and firm; early, prolific and hardy.

Centennial.—Upright vines, strong, vigorous and medium height; foliage dark green, strongly resembling the leaves of a raspberry; tubers are compactly clustered around the stalks; easy to dig; medium and uniform size; shape nearly round and somewhat flattened, never rough or prongy; eyes few and of a deep red colour; medium early; flesh fine in the grain, white, and when boiled or baked of a lightness and purity seldom equalled, but is not at all prolific.

Calico.—Upright stem, nearly three feet high; tuber round and slightly flattened; colour light brownish-red, with a small portion of white near the stalk; mealy, medium flavour; fair cropper, but would not recommend it for cultivation yet, until better tested.

Carter's Red Skin Flour Ball.—A heavy cropper; answers well for late use and winter; keeps finely; seems to be free from all disease; quality fair; it has not yet been tried on a variety of soils or sections of Ontario.

Canada.—Medium tuber, oval; stem about two feet high; cooks well, but a poor cropper; it is a hybrid, and will likely never be of value for extensive cultivation.

Dunmore.—A new seedling from Vermont; white skin and white flesh; it has been represented as extra fine in its native place; of large yield, large tuber, floury and good in quality; in appearance it resembles the Peerless; it has not yet been sufficiently well tested in Ontario to warrant us in recommending it to any one, but by another season we may be better able to speak of its standing in this Province.

Early Rose.—Was the first of Mr. Bresee's seedlings; it came out in 1868, and has

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been the standard for earliness, quality and productiveness from that time down to a year or two ago, when we began to hear of complaints; the fact is now evident in many sections that it has seen its best days. It certainly has been the potato for the million, but is failing.

Early Ohio.—A seedling of the Early Rose, and similar in colour and generally, excepting in shape, it being a round oblong; it is several days earlier and more productive than the Early Rose; quality fine; thus far reports are nearly unanimous in giving it a high recommendation for more extended cultivation.

Extra Early Vermont.—Resembles the Early Rose in many ways; is earlier by ten or fifteen days; fully equal in quantity, and a good cropper on rich soil.

Early Durham.—An old variety resembling Early Rose, but yield is small, although table qualities are good; it is not, however, worthy of general cultivation.

Early Peachblow (Foster's).—Very productive and excellent for table; has not been sufficiently tested yet to recommend generally.

English White.—An old variety, late; stalk large and spreading, tubers long and round, with deep eyes. It is not valuable for extended cultivation.

Early Snowflake.—Ripens about a week after Early Rose; uniformly symmetrical, medium size, skin white, with a russet tinge, flesh fine-grained; snow white when cooked; flavour fine, mealy, delicate; one of the best cookers; a fair even cropper, with even-sized tubers.

Eureka (Brownell's).—Has been tested fairly in several sections, and all concur in reporting it unworthy of extended cultivation.

Early King.—Stem strong and short; medium tuber, kidney shape, eyes shallow; flesh white; table qualities appear good, but is a poor cropper.

Fern Hill (Paxton's).—A new seedling resembling Burbank in shape; tubers medium to large, skin pink, eyes shallow; yields well and comes in early; mealy and good flavour; worthy of cultivation.

Fluke Kidney.—Late, productive, good keeper; will be fully tested and reported upon in two years or so.

Fox's Seedling.—Early, round, and said to be productive and very good; will be tested and reported next year.

Golden Russet.—Medium early, nearly round; eyes deep, waxy; not worthy of cultivation.

Grange.—A new seedling; stem short, leaves broad; tubers large and kidney-shaped, eyes deep; yields well, and very fine for table; good keeper, late, and likely to be a popular potato.

Garnet Chilli.—An old and well-known variety, but really not worthy of cultivation as there are so many sorts superior to it in yield and general qualities.

Hanlan.—A new seedling of 1879; stem about two and a half feet high; kidney-shaped, medium to large; flesh white; eyes few and shallow; fine flavour, very dry and very productive. It is worthy of a full and fair trial, as it promises well.

H. J. Hill.—A new seedling of 1879; stem stout and bushy, tuber oval; white and rough-skinned; medium size, keeps well, mealy, late. This is being tested.

Harrison.—An old variety, a seedling of 1860, from Cusco; kidney-shaped, white, smooth skin; grows large, yields medium, ripens ten days earlier than the Garnet Chilli.

Harlequin (or "Variegated Early Rose").—Was discovered several years ago in a field of Early Rose; it only differs from that variety in the *foliage*, which is described as variegated with different shades of white and yellow. But we find that the variegated qualities are a humbug, and the Harlequin should not be among the recognized varieties.

Hundred-fold.—Late; excellent for table; productive; resists disease. It is under test and will hereafter be reported upon.

Irish Lumpers.—Upright stem, tuber large, slightly oblong and flattened; colour whitish, waxy; bad flavour; might be valuable for cattle.

Irish Apple.—Stem strong and spreading, about two and a half feet high; tuber hollow at both ends, colour bright red about the eyes, the rest bright; mealy, good flavour and healthy. Highly recommended.

Jackson's White.—A northern variety; medium late; large, irregular, round to

longish; skin white and smooth, eyes deep; flesh white and finely grained; good table quality, good keeper; productive in some localities.

Irish Calico.—Upright stem about two and three-quarter feet, tuber round or slightly flattened; rough colour light brownish-red, with small portions of white near the stalk; mealy flavour, medium, healthy.

Improved Peachblow.—A cross between the Jersey Peachblow and Excelsior, it has some of the characteristics of both parents; the vines and leaves have the appearance of Excelsior, and the tubers resemble the other parent; quality is fully up to the old standard Peachblow; late, but earlier than the Jersey Peachblow, and productive.

J. H. Rowe.—A new seedling of 1880; upright stem about two and a half feet, tubers large, oval and rather flattened; very prolific; cooks well, mealy and fine flavour; promises to be a good table variety.

King of the Earlies, or *Bresee's No. 4*.—Very early; pink skin and white flesh; good for forcing, but so far it has proved a shy yielder.

Late Rose.—Was first offered in the fall of 1871; ripens two or three weeks after Early Rose; it has proved very productive, hardy, healthy, and an excellent keeper, retaining its good quality later than almost any other variety; it is entitled to be classed first class, and we readily recommend it for general cultivation; table quality is very good to best; flavour stronger and more decided than Early Rose.

Matchless.—Is from a seedling of the Early Rose, fertilized with the White Peachblow; tubers generally round, somewhat oblong, and occasionally flattened; very handsome and symmetrical in form; skin slightly russeted, pale red, except the eyes and seed end, where it is much brighter; flesh fine-grained, pure white, quality very good; cooks through evenly and quickly; a large cropper, keeps well, eyes slightly depressed, ripens with the Peerless. Altogether it should be placed among the best market sorts.

Mammoth Pearl.—Originated in Ohio; selected from over 2,500 seedlings; a very rapid and strong grower that the Colorado beetle could have very little effect upon; table qualities good, free from disease, handsome in appearance; skin white; flesh pure white—when cooked it looks like a ball of flour; eyes few, and even with the surface; oblong in shape. Ripens in August; productive to very productive; in many cases reported it has produced about double of many first-class varieties.

Perfection.—Stem medium height; tuber kidney-shaped; skin red; eyes few and shallow; size, medium; not likely ever to become popular.

Patterson's Victoria.—An English variety, considered one of the best in cultivation in that country; possessing good qualities for table, keeps well, and retains flavour. Has not been thoroughly tested yet in this country.

Pink Cups.—A new seedling; tuber resembles an Old Cup, but much larger; yields well, but table and general character not yet fully tested.

Pride of America.—A new hybrid from Vermont, closely resembling Snowflake in both appearance and quality, but ripens a few days later. It appears to be adapted to a great variety of soils, which cannot be said of the Snowflake; size large; very productive, with very few small tubers, all being a good, marketable size; keeps well, and so far shows no signs of disease; flesh very fine-grained and white; cooks well; dry and floury; considered to be without a fault as a table variety.

Purple Chilli.—Large broad stem; tuber, kidney-shaped; skin dark purple; eyes deep; medium to small, waxy; yield only medium.

Porter's Excelsior.—Pale straw colour; rough skin; flesh white; flavour fine; strong grower, and prolific under some circumstances only; tubers are inclined to be small, unless under favourable circumstances; flattish-round in shape. This is the earliest variety grown in Halifax.

Peerless.—Skin dull white, occasionally russeted; eyes shallow; flesh white and firm; grows to a large size; oblong; very productive, but not of first quality on heavy soil; it is placed among the best for general cultivation.

Ruby.—Stem short and stout, with broad foliage, thick, and a deep dark green; tubers oblong, and slightly flattened; colour red; eyes slightly sunken; flesh white, waxy, fine-grained, but inferior as a table potato.

Rennie.—A new seedling of 1880; stem stout and spreading; tubers elongated,

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oval; skin bright pink; eyes full; flesh white, with pink circle a short distance from the skin; yields well; good keeper; promises well, but must be fully tested yet.

Rivers' Royal Ashleaf.—Not yet tested properly, but seems very early and of good quality.

Scotch Forty-fold.—A very prolific and fine quality variety in its native land, but not yet properly tested here to pass judgment upon it generally.

Sutton's Magnum Bonum.—A new English variety, considered there the best. The originator says of it: "It is now undoubtedly the most useful potato for general cultivation, combining great productiveness with excellent cooking qualities and late-keeping properties; it is invaluable both for the gentleman's and cottager's garden, as well as for field cultivation. The tubers are uniform in size, and of true kidney shape; the eyes few, very small, and almost level with the surface; skin russeted; flesh firm, and of excellent flavour; the vine is dark green, very robust in growth, which enables it to withstand disease better than ordinary kinds; it cooks well as soon as the tubers are large enough for the table, and it may be kept till most other varieties are useless." So far as tried it gives promise of being a good potato; we would not yet fully endorse the originator's statements. There are other varieties quite distinct from this, also called *Magnum Bonum*.

St. Lawrence.—Stem about two feet high, rather upright and full; tuber kidney-shaped, good size; colour red, and smooth; fair cropper; keeps well; medium late; would class about second-rate only.

Snowflake.—A sport of the Early Snowflake, and fully equal to that variety in quality and appearance; ripens three weeks later, and is productive.

Success.—A new variety, resembling Early Rose; yield fair; cooks well; ripens about same time as Early Rose. Not yet fully tested in Ontario.

Strawberry.—Stem short and stout; tuber medium, and uniform in size; shape nearly round, symmetrical; colour bright red; eyes few, and mostly at the seed end. This variety is grown mostly for exhibition, and cannot be looked upon as valuable generally.

Sutton's Red Skin Flourball.—Is valuable for its long-keeping quality; it is excellent, late in spring, when most other kinds are without flavour and worthless; it crops well, and resists disease; round in shape.

Schoolmaster.—Robust growth, large tubers, rough skin, delicious flavour, and good cropper; medium late.

Silver Skin.—A new variety—a cross of Early Rose and White Peachblow; resembles the Peerless in many respects, but is earlier and better in quality, and generally more reliable as a cropper; tubers medium to large; skin smooth and silvery white in light, clean soils; very few small tubers; slightly russeted; flesh very white, and grain fine; flavour good, mealy; free from disease; keeps well.

Trophy.—Tubers medium size, regular, elongated, oval, somewhat flattened; eyes few, almost flat upon the surface; skin reddish, slightly russeted; flesh fine grain and white; two weeks later than Early Rose. Upon the whole, however, when tested, the reports go to show that it is not likely to be valuable for general cultivation.

Washington.—A new variety; tubers long, and somewhat flat; eyes almost on the surface; colour of a rusty hue; flesh fine-grained; quality good; productive; strong vines, dark green; tubers closely clustered about the stalks; a few days later than Early Rose. Has only been tested one year in Ontario, and then under adverse circumstances; another year will test its value for this Province.

All the foregoing varieties have been tried, and are now grown, by Jonas H. Rowe, of King, in York County, who is a good authority upon potatoes. Mr. Rowe has adopted a new method of grafting, which, he says, is going to be very valuable, as he can bring in a new variety by thus crossing in one or two seasons, that by the system of seedlings, or pollen crossing, might take several years to prove. His method is a secret known only to himself, but his results have proved it valuable.

Allan's Hybrid.—One of the kidney varieties, a cross between Scotch Kidney and the old Pink Eye—it follows the kidney very closely; it is not a very large cropper, but fair; colour pure white; quality the best; mealy, hard to boil, as it cracks open easily. The peculiarity with it is that it succeeds best in dry seasons.

Ashleaf Kidney (Blue).—Rather delicate in growth, and a small cropper, with many small tubers; kidney-shaped.

Ashleaf Kidney (White).—Very similar to the blue variety, and not popular or likely to be.

XXX.—This is a new variety, being introduced in 1880; is fit for use very early; firm; cooks well; a red-skinned potato, rather deep eyes; promises to be a good variety, but not sufficiently tested to fully recommend.

White Peachblow.—A seedling of the old Peachblow; very late; large, irregular in shape; skin white and smooth, with bright pink eyes; flesh white; cooks very dry and mealy.

SWEET POTATOES.

Yellow Nansemond.—Is probably one of the best varieties for this Province; succeeds well, very prolific, and grows as large as six pounds in weight often.

Bermuda.—Is a fine-flavoured variety, but appears to require a longer season to reach perfection than the other; it is not so prolific, nor so sure a cropper.

Early Peabody.—A white potato, smaller in size than either of the above, and not so prolific, but of good quality.

There are several other varieties, but after testing, these three in the order given are considered as the best. The only difficulty to contend with is to get a long enough season to bring them to perfection—to get out the plants as early as possible, but not so early as to endanger them by frost. A good plan is to put down the tubers in an ordinary hot-bed, and when the sprouts are about three inches long, take up the tuber carefully, and with finger and thumb nip each sprout off close to the tuber; plant these sprouts out in the field or garden, and put down the tuber for another set of sprouts. Sweet potatoes succeed best in thoroughly well-tilled soil, deep cultivation, and under-drained, well-manured with rich compost; light soils are preferable; after well working it drill up well, and plant the plants about a foot to eighteen inches apart in the top of the drill; they want all the sun-heat they can get. The vines will spread rapidly, and soon cover every inch of the ground with a thick netting, but they should be cut back from time to time to throw as much nourishment as possible to the tubers, and hasten them to maturity; care should be taken, however, not to cut back the vines too severely, as thereby injury may be done by leaving too small a quantity of leaf or lung power to feed from the air the needed nourishment.

Peanuts.—Can be grown successfully in any of our warm, light, loamy soils, but do not think they have been tested sufficiently to judge whether or not the cultivation of them could be made profitable.

There are many other worthy varieties of potatoes, but those we have given, comprising most of the new potatoes, is a sufficient list, large enough for general culture. In the cultivation of potatoes there are, as in other crops, several points to be considered—the soil, the kind of manure required, the manner of planting, cultivation, etc. The soil acknowledged to be the best for potatoes is a rich loam, sandy, and neither too wet nor too cold; cool, moist soil will produce larger potatoes, but more liable to rot, and not so good a quality. In our opinion, a nice clover sod turned under is a good preparation for potatoes; if barn-yard manure is applied, it should be old and well-rotted at the time of planting; bone-dust, ashes, plaster, and such fertilizers can be used to advantage. A very common error is to plant too much seed, which, besides being a great waste, produces many small potatoes; two, or at most three, eyes in a hill, with a proper proportion of flesh to each eye, is sufficient—the tubers will be of more even size and a greater weight produced. Cultivation should be commenced as soon as the sprouts begin to break the ground; a good plan is to cover with the hoe as they are breaking through, thus smothering the weeds and leaving the hills clean; as soon as up, the cultivators should be started and kept going.

The main fertilizing ingredients with which the potato-grower must concern himself are nitrogen, phosphoric acid, and potash. Nitrogen being taken largely from the air, needs less effort to supply. To grow 100 bushels of potatoes without exhausting the soil would require an application of about eleven pounds of phosphoric acid, and thirty-four

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pounds of potash. The most common source of supply of potash is obtained by the application of wood ashes, of phosphoric acid, pure fine bone-dust, bone-meal, and Peruvian guano.

DISEASE.

The most fatal disease of the potato crop is the rot, which is hard to account for; very hot, wet weather sometimes induces rot. The crop can frequently be saved by digging as soon as disease shows itself, even though the tubers are not fully ripe, and pitting up in the field, or in some dry place.

INSECTS.

The Colorado potato beetle is the most formidable insect to the potato crop yet known; can, however, be kept well in check by hand-picking the old bugs before they lay their eggs, which they deposit on the under side of the leaf. After the slugs appear, dusting with plaster in which Paris green is mixed is the best plan to kill them. Several machines for picking bugs have been invented, but, so far as we are aware, have proved of little use.

CHINESE YAM.

This valuable vegetable is but little known. The stem is of rapid growth and of creeping habits; is valued very much as a flowering vine, having many small white flowers, growing in clusters. The tubers are something like sweet potatoes, of a pale russet colour, oblong, and larger at one end; they are valuable for food, the flesh being very white, having a rich taste; may either be boiled or roasted. The tubers remain in the ground over winter, and continue to grow the next season; will grow to the length of two feet or more the second season, and if left to grow, will in four years attain very large size. They increase from small tubers that grow on the vine above each leaf; these should be saved in the fall, and kept where they will not freeze. The cultivation of the yam is worth a trial.

Of other vegetables we might go into an extended description of each kind, and the manner of cultivation, but this will probably be unnecessary; we will therefore refer to some of the most prominent, giving varieties which, through experience, have been found best for cultivation in this Province.

LIST OF VEGETABLES.

Asparagus.

Conover's Colossal.

Beets.

Pine Apple (Henderson's).
Egyptian Blood.
Blood Turnip.
Long Blood.

Beans.

Dwarf Wax.
White Wax.

Cabbages.

Henderson's Early Summer.
Jersey Wakefield.
Winningstadt.
Flat Dutch.
Marblehead.
Red Dutch, for pickling.
Drumhead Savoy.

Carrots.

Scarlet Intermediate, for table.
Early English Horn.
White Belgian, field culture.
Long Orange.

Cauliflowers.

Lenormand's.
Early London.
Dwarf Erfurt.
Extra Early Paris.

Celery.

Henderson's Dwarf White.
Sandringham Dwarf White.
Boston Market.

Corn.

Crosby's Early.
Stowell's Evergreen.
Mammoth Sweet.

Cucumbers.

Early White Spine.
Improved Long Green.
Early Green Cluster.

Lettuce.

Early Curled.
White Cabbage.

Melons.

Green Nutmeg.
Skillman's Fine Netted.
Mountain Sweet.
Black Spanish.
Long Island.
Phinney's Early.

Onions.

Wethersfield Red.
Danvers Yellow.
White Silver Skin.

Parsnips.

Hollow Crown.

Pumpkins.

Large Field.
Mammoth.

Radishes.

Early Scarlet.
Long Scarlet.
Black Spanish (Winter).
White Russian.

Squash.

Hubbard.
Early Bush Crookneck.
Vegetable Marrow.

Tomatoes.

Dempsey.
General Grant.
Trophy.
Acme.

Turnips.

Nimble Dick.
Early White Stone.

The root crops—carrots, turnips, mangold-wurzels, beets, etc.—have become of great importance in Ontario, and in stock-raising districts are almost considered a basis of successful farming. With good roots, fed in warm stables, cattle can be wintered cheaply, and come out in the spring in a thrifty condition. The sugar beet ranks high as food for cattle; in fact, we believe it is coming into more general favour each year. In the old country the mangold-wurzel is taking the place of turnips, from the fact that it is not subject to the ravages of the turnip fly—an insect that frequently destroys the turnip crop there, and is becoming a formidable enemy here. We are confident in saying that were more roots raised and fed, land would be kept cleaner and in better tilth, besides the roots being healthful for stock during the season of dry feed. Vegetables of all kinds are also looked upon as wholesome food for the human family; and while in this Report we have attempted to give some general ideas upon the culture and value of our vegetable productions, we hope the study of this subject may be further continued by other Committees, to report at future meetings of this Association.

W. PEMBERTON PAGE,
Chairman of Committee.
P. C. DEMPSEY.

MR. BUCKE.—I have great pleasure in moving that the thanks of the meeting be tendered to Mr. Page for his very able paper on Vegetables. He says that Paris green should be mixed with plaster. I have always found water better to mix it with, for the simple reason that if you put it with plaster or anything that blows about, the party putting it on is apt to inhale it. I think if you put on a teaspoonful to a pail of water, and sprinkle it on with a few twigs, it can be done safely. Paris green is a cumulative poison; it remains in the system; and if you only breathe a little now, a little to-morrow, and so on, you may at last have enough in the system to either destroy life or materially injure the constitution. Therefore I think great care should be taken with Paris green. It is a very insidious thing; it might injure people almost without their knowing it. I would be very much obliged to Mr. Page if he could tell us where the yam is to be had. I think several of us would like to try it, and if it is a success it might be sent out by the

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Association. I do not think the sweet potato has been a success in Canada; the season is not long enough for it. I move that the paper be received, adopted, and printed.

MR. A. M. SMITH seconded the motion.

MR. PAGE.—I shall reply first to Mr. Bucke's remarks on the plaster and Paris green. I believe there is a great deal of caution necessary in applying Paris green to potatoes; but his plan of applying it with water would be a pretty slow process if you had three or four acres of potatoes to go over, and water to draw—as many would have to do—over two or three fields. If used carefully in plaster, the Paris green not only kills the bugs, but the plaster with the green seems to have a beneficial effect upon the tops of the potatoes. I have noticed, after putting this mixture on the potatoes, that they would assume a very green colour, look rank and healthy, and grow well. With regard to the Chinese yam, I raised some myself last season. I procured the tubers from Bliss & Son, of New York, of whom I presume any amount of tubers can be got. I obtained some small tubers, not over an inch in length, and the vines grew from those tubers ten or twelve feet in length in the one year. The vines look something like those of a sweet potato. I trained them up on a trellis, and they made a very nice vine. They did not flower with me last season; I presume they will flower the second season. It was the first time I ever raised a yam, and it was an experiment with me.

MR. ARNOLD.—I used to use Paris green with plaster of Paris, but I came to the conclusion that the bugs were not foolish enough to eat plaster of Paris if they could get out of it. I have since used flour, but at length have adopted Mr. Bucke's plan, and when you have not to carry the water too far it is the best one. It is over thirty years since I planted the Chinese yam, and I have not been able to get rid of it since, although I have tried several ways. It is perfectly useless. It has been rejected by every man who has tried it.

MR. SAUNDERS.—I have had Paris green tried on large patches of potatoes, and I have found by experience that there is less trouble in applying it with water than in applying it the other way. It is much easier to apply it with water, and, besides that, much more economical—you use less of the Paris green. The method I have adopted is to have a man carry a pail full, or three-quarters full, of water in one hand, and a corn broom whisk in the other, and in that way he can sprinkle it about as fast as he can comfortably walk among the vines. As to the plaster being beneficial to the potato, that is no doubt correct; but it might be applied separately from the Paris green altogether.

MR. CROIL.—I can endorse the opinion that with the water is the best way to apply the Paris green. I use a common watering can, with a very small rose, and I find it does it a great deal better, more quickly and neatly, than a whisk. Some say that Paris green hurts the stems. I am inclined to think it does if it is put on too strong; and it is often put on too strong. A teaspoonful in the pail is quite sufficient; but the common thing is to put in a tablespoonful.

MR. BEALL.—I have tried both plans, and I like the whisk altogether the best, because we can throw it underneath the vines with the whisk where we could not throw it with the sprinkler. I like the plan of using water much better than using plaster. I find that when the first application is made there are any number of eggs on the under side of the leaf. These cannot be got at just then; but by applying with water the Paris green sticks to the leaf for a few days, and these youngsters, when they come out, naturally want something to eat, and they devour the Paris green.

MR. SAUNDERS.—I have been experimenting with London purple this last year, and I find it is a substance very variable in its composition. It is a waste product obtained in the manufacture of aniline dyes. There is a considerable amount of arsenic used in the manufacture of these dyes, and it remains in the waste product, which was formerly carried out into the ocean and dumped there. Sometimes it contains eighteen or twenty per cent. of arsenic—sometimes over forty. The consequence is, you never know, unless you get it analyzed, what strength you are using. It is a little cheaper than Paris green, but it is not any cheaper than to make a mixture of arsenic and lime yourself, and it consists chiefly of arsenic and lime with a little colouring matter. I do not think it is likely to be, in the hands of the public, either as efficacious or as safe a remedy as the Paris green.

MR. JARVIS.—I have tested the Chinese yam in its native country, and I must say I have never had much fancy for it, even where it grows. I have on one or two occasions, though, stewed it up with Java chickens, and we used to pick out the chicken legs and leave the yam. At any rate, it would only be an amateur's experiment trying it in this country. With regard to the sweet potato, I spent a great deal of time the summer before last in trying to cultivate it, and I must say that, with the exception of showing people that I was growing sweet potatoes, the attempt to grow them here was not a success at all. It is just throwing away one's time, unless he wishes to have these things as an amateur. If you wish to have a sweet potato, it is very easy to have it in this cold country by putting a good Early Rose outdoors, letting it freeze, and then bringing it back and cooking it. With regard to Paris green being mixed with plaster, I have never used anything else, because I have found that thoroughly successful. Some have used ashes and some flour. I do not think we ought to feed our good flour to potato bugs. It is just as people take the fancy whether they should use the Paris green mixed with water or use it mixed with plaster of Paris; either way is sufficiently successful. For the long number of years that we have now been troubled with the Colorado beetle, we have seen nothing to equal the Paris green, used one way or the other; but I really think that when the potatoes are first growing, the sprinkling of them with plaster of Paris does a great deal of good. If I were to use the water for greater safety I would first go over the patch with it, and afterwards with the plaster of Paris, for the sake of having the benefit of it. With regard to peanuts, I think they are a sort of amateur production like our Chinese yam and sweet potato.

MR. BUCKE.—I should like to have an expression of opinion now as to whether the Colorado beetles are getting fewer or not. I think round about Ottawa they are.

MR. JARVIS.—Last year, when digging in the gardens, we did not see one old bug, and we thought we had got rid of them entirely; but they came on in great force during the year. Where they were not attended to—in some parts of my plot where we did not use the Paris green at all—they appeared to cut off the leaves, but the potatoes did not seem to be much injured by them. I think generally they are not doing the same injury to the potatoes that they did some years ago. Last year especially they were not so numerous through our section of the country, nor did they do so much damage.

MR. SAUNDERS.—I believe the bug was not nearly as common last year, which is to be partly attributed to the large use of Paris green, and to the fact that the insect enemies of the bug have increased very materially and prevented its multiplication. There are now about half a dozen of these insect enemies of the Colorado beetle, which feed on it. Then, the bug is subject to the vicissitudes of climate; and there are some seasons which are more favourable to the production of insect life. Last year seemed to be an unfavourable year in that way. I think the lessening of the numbers of the Colorado beetle is to be accounted for in these three different ways. I am in hopes that we shall not have again the trouble that we had on their first appearance—whole fields destroyed, and stalks eaten bare to the ground. This intelligent way of treating them when they appear in numbers, and the increase of these insect enemies, help us to keep them within bounds.

MR. ORR.—At first I was very careful to pick off all the bugs, and afterwards apply the Paris green with water. Last year we did nothing at all, and we had quite as good a crop as any other year.

MR. DRURIE.—In my township quite a number of farmers grew from ten to fifteen acres of potatoes last year. They paid no attention to the insects at all, and they harvested excellent crops. Our opinion is that the bug is about played out, and that something is going to rid the country of them.

MR. SMITH (Glenfield).—We have always fought them. Sometimes we have used the Paris green with flour or buckwheat meal, and sometimes with plaster of Paris. Either of these is a good way of destroying them. We have gone through and whipped them off the bush into a dish and killed them. There were plenty of bugs with us last year, and if we had not fought them I think we should have had as many of them as any other season.

MR. PAGE.—I am pleased to hear the discussion this paper has brought out. Refer-

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ring to the peanut, I do not myself think it would be of practical benefit to pay much attention to the growth of it. As for the yam, I believe it is worth growing for the sake of the beauty of the vine; it makes a very pretty vine. As to the flavour of the fruit, I think if the taste of the gentleman on the other side of the house (Mr. Jarvis), in respect to the yam, is similar to his taste with regard to the sweet potato, I cannot put much reliance on his judgment in the matter of taste. I have always been for some years back in the habit of taking a good deal of interest in the trying of these things when they come along; and I have grown the yam for one year, and hope to be successful in growing it for another year, and to be able to report here with regard to it. I see this Report has been adopted by the Association. Since its adoption a number of persons have spoken who do not agree with it in regard to Paris green. Would it not be better to change the Report in that respect before it is printed? Otherwise it might mislead the people.

MR. BEADLE.—Our custom is to print the Reports as they are received and read. The discussion on them is printed also; and the public can judge for themselves.

MR. WOODWARD.—This discussion with regard to the Chinese yam makes me think of one point in reference to it. It is just like a Chinaman in his always expecting to go home. But there is this difference in the yam: it always starts to go home from whatever place you plant it in; and it takes a pretty smart boy to keep up with it. This is not a congenial climate for the potato beetle; he revels in a climate where it scarcely ever rains. Our climate occasionally destroys him, as do also insect enemies. This last year in western New York we had very little trouble with the potato beetle. I think the majority of our farmers did not apply any remedy at all; and the potato crop was very good. We have had years like that before. There have been years when scarcely a pound of Paris green has been used in the whole county; and the next year tons of it have been used. I think the only way is to watch the beetles carefully. Our large potato growers now uniformly apply the Paris green in powder. With a large patch of potatoes it is too expensive to apply it with water. We apply it with plaster of Paris and flour mixed; and if I was going to use water I would put a little flour in the water. I have applied it myself in water; and after waiting a few days I have found that that did not answer. I have then applied plaster of Paris and flour, and after again waiting a few days there was not a beetle to be found in the patch. We apply the Paris green in a powder containing some flour. You will see men out dusting the powder on the plants from as early as they can see in the morning until the dew goes off; and then they will do it again in the evening after the dew has fallen; they try to apply it when it is damp, and then the powder adheres to the plant, and the insects eat it.

CHIEF JOHNSTON.—I agree with several who have spoken on the subject of the potato beetle, that there is not the slightest doubt that we have to fight him just as the American Government fought with Sitting Bull, and when they drove him within the British lines we had to fight him there until we got him quiet. I have noticed that the potato beetles which attack one crop will go into the ground, until you plant the next, and then they set to work again. I had a patch of potatoes a year ago last summer; and I fought the bugs then with Paris green to very little effect. A neighbour of mine, an old Indian, said "Now, Mr. George, why don't you take a load of hot lime and coat the field all over with it? That would destroy those beetles that you have been Paris green-ing all summer." I did so last year without using any Paris green, and I never had better potatoes in my life. I believe the lime kills the beetles in the ground; and besides that it is beneficial to the soil. I cannot vouch for the efficiency of this plan; that was only my first trial; you hear the result of it, and you may judge for yourselves.

ROSES.

BEST TWENTY-FOUR VARIETIES OF HARDY ROSES, INCLUDING CLIMBING, HYBRID PERPETUAL, SUMMER AND MOSS ROSES.

MR. BEALL.—Since I have been at this meeting I have got the impression that many persons here think that nothing of this sort can be grown at Lindsay. I have heard the

remark made that the best advertisement Canada ever got was when she exhibited fruit at the Centennial, because it showed people who may have been inclined to doubt the fact, that she was civilized. Well, I think if I can show you that we can successfully grow fine roses at Lindsay, I can show you that we are not altogether beyond the bounds of civilization. I have merely prepared a list of those that I think will succeed in our county, with a few remarks respecting each. In the first place, I have only tried one Prairie rose, and that is the Queen of the Prairies. I cannot imagine that any rose can satisfy the grower much better than it. Last summer, and several summers before, I could, I have no doubt, have gathered a thousand roses any day during the season from the one plant. Among summer roses I regard the Madame Plantier as being the best of all the white roses, and it is perfectly hardy; even last year when we had no snow, and yet one of the hardest winters we ever had, there was not a twig of it injured, although it had no covering. The Coupe de Hebe I never knew the name of till last year, when I took some samples to Guelph and found it was the old Cabbage Rose. It is a very satisfactory rose to grow. It is one of the sweetest, and perfectly hardy. We also grow the summer rose, Persian Yellow. I think it would almost grow at the North Pole. The common Moss Rose is so well known that I think it requires no description. Of course, I speak of the rose that is known as the old Common Moss. It has two faults: the first is, that the foliage is the worst, perhaps, that any of our roses there have; it is very bad indeed. That is, I think, a great objection to a rose. In the second place, it suckers very much—so much so as to become almost a nuisance. The Countess de Murinais is a beautiful rose—beautiful in bud, beautiful when open, but most beautiful when half open. I think the great beauty of all moss roses is in the bud when it is about a third open. But unless a person is a very early riser, he will not see the Countess de Murinais in its best stage. A few minutes of sunshine will cause the bud to burst open. We also grow the Madame Alboni. It is a rose of great merit. Its bud is not so good as that of the common moss, but when half open or fully open it is perhaps more beautiful than any other of the mosses; and in this stage its perfume is most exquisite. In form and colour it is perfect. In colour it is a light pink shaded deeper in the centre. To have this rose in perfection it should be well shaded and protected from strong winds. Not that I think any rose can be grown in the shade; but if it begins to bloom, the bloom requires to be shaded. The foliage of the Madame Alboni is the best without any exception of any rose we have, and it has always been the same with us every year. Of the autumn roses we have the Alfred Colomb. It is very red, fine form, and very showy. The next is the Duke of Edinburgh. This is described in Mr. Beadle's catalogue as "brilliant scarlet crimson shaded with maroon, large and full, extra fine." That seems a glowing description of a rose; and I may say that I was somewhat disappointed in it, because it was better than described. The colour is certainly most wonderful. We grow the General Washington. The colour of this rose is very good; but it is only half double with me. The Marie de Ducher is a very good one. Its colour is purple, with some crimson and scarlet. The Jules Margotten is a deep red rose, very fine and fragrant. It should be better known, as it is very hardy and continues to bloom during a longer period than any other with one exception. The Lena Turner is a bright cerise. It has beautiful large, full, imbricated flowers. It is one of the first to bloom in the spring, and continues to bloom throughout the summer with few and short intermissions. It is always the "last rose of summer" with us. A cluster of four, about half open, was gathered on the 14th of November, last fall, during the first snow storm. The Madame la Baronne de Rothschild is a magnificent rose, and well deserves a place in every garden. It is a clear, pale rose, shaded with white. The Xavier Olibo we also grow. Its colour is a velvety black. The rose advertised so much by the Americans lately as La France, is very fine, but with me it is not sufficiently hardy. It is the only one with us that was entirely killed last winter. That was the only winter that we ever allowed our roses to pass through without covering them to some extent, and I believe it was the hardest winter that we have had since I have been on the place where I am now living. La France died entirely.

MR. WELLINGTON.—La France would not succeed, I think, without protection; but it is certainly one of the finest, if not the finest, hybrid perpetual roses that have been brought out. It is a free bloomer, its perfume is delicate and exquisite, and with protec-

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tion I think that even Mr. Beall would find it would be a success. There is also the *Coquette des Alps*, another of the new French varieties, which is a profuse bloomer. With good treatment it will bloom all the season until cut off by the frost. *Coquette de Blanche* is another of the new varieties, and *Louis van Houtte* and *Victor Verdier* are also new. Coming to the Tea roses, I have found the *Duchess of Edinburgh* one of the finest. It is a little hard to propagate, and a slow grower. Among the Moss roses I should be inclined to put the "*Crested Moss*" at the head of the list; and *Madame Alboni*, I consider as good probably as Mr. Beall. I judge that the suckering is caused by the Moss rose being usually budded or grafted. *General Washington* and *General Jacqueminot* among the old sorts, I think are good. There is a general impression that the most of Canada is not adapted to the growth of roses; but I think want of success is mainly owing to not giving them proper attention. I lived two years in the State of Maine, in Augusta, the climate of which is more rigorous perhaps than that of Lindsay; and when I went there they told me I could not grow roses. I am fond of roses, however, and I was bound to have them. I planted out three dozen, and before planting them I dug fully two feet deep, filled the trench three to four inches deep with well-rotted compost, and then put in the best of surface soil well mingled with well-rotted manure; and that season I had as fine roses, I believe, as were ever grown. I had them from June until the frost came. As soon as my plants got through their first series of flowering I cut them back, and I had from two to three series of flowers during the season—in fact, they were in constant bloom, and they passed through the winter successfully with slight exception. I find that generally roses are half starved at first. Any flower that is perpetual must be well and liberally fed, must have a rich deep soil, and if you have it not, you must make it. Let them have this and good winter protection, and I can grow roses in Canada.

MR. BEADLE.—The rose is my favourite flower. I have given it a good deal of care. There are some difficulties that we have here in America generally, that we have to contend against, and in some degree submit to, which makes it impossible for us to grow quite as fine specimens of that flower, and keep them quite as long as they can in England in that cool, moist, and somewhat overshadowed climate. Where there is a good deal of cloudy weather the roses do not burn as they do with us, particularly the dark-coloured varieties. I have noticed that some days if you go out early in the morning before the sun is up, and get among the roses, they are just a splendid sight; you wish they would last all day. But as the day comes on the sun seems to burn them up; the dark petals absorb all the rays of heat, and those roses that were so beautiful in the morning, you can take at night and crumble up like dry leaves. That may in some measure be guarded against by shading the red roses. I have known some gentlemen go so far as to stretch a little canvas during the mid-day to shade their rose beds. Those who have the time to do all this can do it and enjoy their roses in that way. We get along with the lighter colours better; and we can enjoy those roses without getting up quite so early in the morning. If people want to enjoy their roses in the evening they will have to be contented with the less highly-coloured varieties, such as the *Beauty of Waltham*, *Coquette des Alps*, and *Coquette de Blanches*. These two are Hybrid Noisettes. We are on the eve, I see, of having a new strain. We shall now probably get a class of roses a little tender, but which will bloom all the season long; if they are carefully attended to and well fed they will bloom till the frost comes; and some of them are exceedingly beautiful in their colouring. *La France* is a beautiful rose. It may be that it is a little delicate; I think probably it is, and that it will want protection. The *Beauty of Waltham* I have not found to need protection in our climate. Nor have I found the *Baronne Prevost* to require it; it is a rose that flowers freely a second time. The rose list is too long to go over it with any degree of minuteness; and I think that what we need to study is to select as fast as we can those varieties that do best in our climate. Still, there will be all the time these new roses coming out. Our rose growers, both in Europe and America, are not going to be satisfied with the old varieties, but will try to get new ones; and we will just have to try which are the best for our climate. I think there are very few gentlemen's grounds in Canada which contain a well-assorted lot of good roses; and when I go to some of our summer flower exhibitions the roses are not up to my idea of what they should be. I hope the little discussion we are having here to-day will help to turn more attention to a flower that to my eye is the most beautiful thing we have, taking it all in all.

MR. BUCKE.—I have often heard our premier hybridist, Mr. Arnold, say that if he had his life to live over again he would go into crossing all the varieties of flowers with our native kinds, and that he has no doubt it would be a valuable thing—that he would get up some very fine flowers. I think this could be very well done with our native Dog Rose, which grows along the hedgerows in the oak plains. I think we might get a hardier strain of roses in the same way that we have got a hardier strain of grapes, by beginning at the initial act of hybridizing with our native roses. I think, however, that it would be some years before any good result came from it.

The PRESIDENT.—The rose is my favourite flower. The finest varieties are too tender for our climate. I remember a few years ago reading of an election that was taken in England upon roses, and there was one gentleman who said that if they wanted all the rest of the roses, they were welcome to them, provided they would give him the Gloire de Dijon. It is a tea rose, and a favourite with me. In his description of it this gentleman, who was somewhat comic apparently, and who called the rose "the Gloire de my John," said it accommodated his nose as well as his eyes. Now, I do admire the perfume of a tea rose. The Hybrid Noisettes, the new roses that are coming out now, I have tried a few of, and I find I can grow them just as easily as I can a Cabbage Rose, though they are a little tender. The Cabbage Rose gives little satisfaction unless we give it a little attention; but it richly pays for cultivation. The greater part of my life I have been trying to grow roses and failing; but I got a few ideas from a work published by a Mr. Hole, a Scotchman, on Rose Culture, and followed his directions as well as I possibly could; and I have had no difficulty in growing fine roses ever since. Having read his work, so suspicious was I that I was going to fail again after a great many efforts that I planted a block of roses at the back of my house where they would be out of sight, because I began to think people had laughed at me long enough for fooling away so much money. I selected a little spot at my back kitchen door; I prepared the land thoroughly by digging deep, manuring deep, and using strong cow manure—I found it better than horse droppings. After making this preparation I planted the best varieties of my Hybrid Perpetuals and Hybrid Noisettes that I could get. We just carefully prune them twice a year, and in winter we cover them with a little earth. Then I throw some marsh grass over them. I manure and mulch the soil every fall very carefully. Mr. Hole says we will not be bothered with insects so long as we maintain a vigorous growth. I find this to be a fact; if you can so cultivate your roses, and so prune them as to maintain a vigorous growth, very few insects will be seen on them—at all events, I have never been bothered with them since I have adopted this plan. I have never been bothered with the rose thrip much; I have some, but they disappear of themselves.

MR. BEALL.—You just now said that in this country the Cabbage Rose is usually of small size.

The PRESIDENT.—No, that it is much larger and finer if protected; it pays for protecting. The manner in which I used to try to grow roses was to make a nice little hole in the ground in front of my house and sod all round it. I would give the rose a space about the size of a bushel basket. I would plant it in there, and the grass would absorb all the moisture, and all the fertilizing properties apparently, and really my roses were starved. Now I give them the whole ground—make a bed of roses.

MR. HOLTON.—There is one rose that I think is well worthy of cultivation as a climber in this neighbourhood; I refer to the Baltimore Belle. There is a great variety of roses, and all of them have some merit or other; but I do not know whether it is worth while to multiply names or not.

MR. BEALL.—I had intended to ask if the Baltimore Belle was really as good as represented. I bought two Baltimore Belles at different times, and planted them; but they have always turned out to be exactly the same as the Queen of the Prairies. I intend to try again.

MR. ARNOLD.—When I talk about roses, I feel vexed with the Secretary, myself and everybody else. We ought to have a Canada Rose. We have had a stock to work upon. We talk about hardy roses. For my part, I cannot think of half a dozen hardy roses—that is, roses that will stand the winter. When I go through our native woods sometimes and see a bed of wild roses, and see them standing the winter—as they

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sometimes do at 30 degrees below zero—I am vexed that the Secretary or I have not tried to graft roses with these. Of my six hardy roses—I can only think of six—there is one old one called *Blanche Vidot*, that grows six feet high, and it is perfectly hardy; you can make walking canes out of it after it has stood there five or six years; it will grow in almost any kind of soil. Then there is the common Moss Rose. Mr. Beall speaks about it throwing up such an abundance of suckers; with me it does not. For colour I take the *Luxembourg Moss*, a very dark rose. There is also the *White Perpetual Moss*, which we all know is nothing like perfection. It bears sometimes two or three different kinds of roses at the same time. The only Hybrid Perpetual Rose that I have which could be called perpetual is the *William Jessie*; it is an old rose. I do not consider that for Canada there is much improvement in roses. We are getting roses from foreign countries which are not at all suited to us. I do not know anything equal to the old *Cabbage Rose* for fragrance; and what is a rose without fragrance? That beautiful *Queen of the Prairie*, when we go to it and find it has no fragrance, we feel like turning it out. There is no manure that I know of equal to burnt sods. It gives, in my opinion, far richer colour to many roses; and it certainly gives health and vigour.

MR. SAUNDERS.—As to the difficulty of controlling some of the insect pests, every year I have a number of ladies coming to me to know what to do with their roses; there is a worm in each bud eating the inside out of it. *Paris green*, applied mixed with water as for the potato bug, is an efficient remedy for that little worm. Until we adopted that, we could not control that pest at all; now, by giving the plants a little showering with water and *Paris green* before we expect the worm, the worm is killed, and we have no trouble with it. Another pest is the rose slug. The same remedy will control that effectually. *Hellebore* does the slug very well; but it does not seem to affect this little worm in the bud.

MR. WOODWARD.—I am not very much of a rose grower, although my girls have roses all about, and know a great deal more about them than I do; and I notice they make a great demand in the spring for very rich soil to put round the rose bushes. I do not know what they use for the pests, except that they apply whale oil soap a good deal for the thrip, and I know they grow some very fine roses.

NUT-BEARING NATIVE TREES.

MR. BUCKE read a paper on the subject of Nut-bearing Native Trees, as follows:—

“Can any of our native nut-bearing trees be profitably cultivated, either for nuts or timber, and where is the northern limit of each?”

The above question has been put into the hands of every member of the Fruit Growers' Association, and I trust it will meet with a response not only from those who are assembled here to-day, but from others also who take an interest in forest tree culture—a subject which is awakening a deep interest, not only in Ontario, but in all parts of the Dominion, where the denudation of both the public and private domain is being carried on to an alarming extent. But deeply as we are interested, who once had, and are losing our forests, still more will those be exercised over this question who have, are, and will be settling in our north-western plains, where, from the sweeping forest fires and other causes, forests such as we have “loved and lost” have had no existence “in the memory of the oldest inhabitant.”

Although the above question only calls for remarks on nut-bearing trees, others have a proportionate value, and any remarks with regard to the cultivation of these will apply equally to the seed and cone-producing varieties as well.

The butternut has the most northern limit, which is found to begin at the southern end of Nova Scotia; running north it passes about midway through New Brunswick, crossing the *St. Lawrence* river at Quebec and extending some thirty miles to the north of the city of Ottawa, and from thence strikes the southern end of the *Georgian Bay*. This tree is the hardiest of our nut-bearing species, and the area of its growth is quite extensive, and for all practical purposes it could, by replanting, be maintained for all time

to come. Every autumn the nuts are sold by the two-bushel bag on the Ottawa market, but I am unable to quote the price, never having purchased any. The timber of this tree loses the name of butternut when it is cut into boards and scantling, and assumes that of grey walnut. The expert cabinet-maker, by a certain staining process, is enabled, after the wood is worked up, to make it so resemble black walnut that it requires a practical eye to tell the difference.

With regard to the cultivation of this tree, I speak from practical experience when I state it is one of the very easiest grown I know of. If given anything like a square chance, it will produce nuts after ten years' planting, and I believe a good saleable tree may be had of 18 inches through, at from twenty-five to thirty years from the nut.

The seeds are not in great demand at present, though I feel sure if they were advertised like other commercial products a market for them could be created, both for home, the North-west and European planting, and I make no doubt the United States alone would absorb a large quantity, if nurserymen, private individuals and farmers knew where they could be procured.

Besides the value of this tree for timber and nuts, the feathery palm-like spread of its graceful leaves and clean-looking stem makes it a great object of beauty on the lawn, and for a wayside tree or a pasture shelter there is nothing gives a much denser shade, though probably if planted along our roadsides the ubiquitous boy might injure it whilst robbing the trees of their autumn nuts. Those gathered early in the season make a pickle fully equal to the walnuts of English manufacture for which Cross & Blackwell are so widely celebrated. This tree has another advantage for wayside and hedge row planting—it never suckers. The bark is also used by farmers' wives for imparting a rich brown to their home-spun yarn, before it is manufactured into stockings or woven into fabrics.

Black Walnut (Juglans Nigra).—This tree closely resembles the former in shape, and the general appearance of its leaves—so much so, that people accustomed to see them side by side are scarcely able to distinguish them, but by running some leaves through the hand the black walnut gives off a strong scent, whilst the butternut is odourless; the nut of the former is more spherical than the latter, and does not contain so much kernel as the former. This fact, however, does not detract from it as a suitable nut for a pickle. It is scarcely necessary to state that the wood is much more valuable, and that its crotches and roots are greatly sought after for cabinet work, gun stocks, etc., and all purposes for which it is required; it brings a high price in the market.

This tree is only indigenous to a small area, extending from a point near Port Franks, on Lake Huron, running north of London nearly in a line with the Grand Trunk Railway to Toronto, and extending along the lake shore as far east as Cobourg. I am satisfied, however, these limits could be considerably extended, but even the area mentioned would give a good many thousand acres of waste lands and side roads for planting, should no one feel disposed to trespass on the best part of his farm for the cultivation of this most valuable of all Canadian trees.

Sweet Chestnut.—This tall and handsome tree, the leaf of which much resembles the beech, but is more glossy and attractive, has a still more southerly range. The northern line of growth crosses the Detroit river a little above Windsor, cutting across the Peninsula to Long Point. Taking a northerly direction from this point on Lake Erie, before Port Stanley is reached, the line strikes near St. Thomas, running north of Hamilton and Toronto, curves about forty miles north of Lake Ontario and runs into that lake a little further east than Port Hope.

The nut produced by this tree, though frequently sold in stores, has not a very high commercial value, as it is smaller than those cultivated in Europe. It, however, serves to indicate in the same way our wild grapes do, that the better varieties might be easily grown. Its wood is chiefly used for furniture in ladies' boudoirs and bed-rooms, as it gives a bright and airy appearance to a room. Its grain is wide and open, and when oiled and varnished has a pretty light yellow colour.

Hickory (Carya Alba).—The northern habitat of this tree is probably on a line with the butternut. The shell bark variety finds its chief home in the woods of the County of Lambton and West Middlesex. The tree is not easily cultivated, as it is a slow grower

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and difficult of transplantation, but its wood is so valuable where toughness and elasticity are required that it commands a high price. It is principally used for tool handles, carriage spokes and fellies, and if grown in sufficient quantities would readily find a foreign market at remunerative prices. This tree is usually cut in its juvenile stages, when from four to six inches through at the butt, and consequently could be more advantageously grown in plantations between trees used at a more mature age, which would be relieved by removing the hickories as required. If grown as proposed, the nuts could be dropped where it was intended the tree should stand. The foliage of the hickory is of a light pleasant green; the rich leaf would add much to the beauty of the home surroundings. The nut deprived of its shell may be obtained from all itinerant newsboys on boats or cars, as no doubt my hearers can willingly testify.

I would strongly urge upon our farmers and others, especially those in youth and middle age, to begin at once, if they have not already done so, and prepare a suitable piece of ground, well fenced with some durable material, such as cedar posts and barb wire, and obtain and plant some of the nut-bearing specimens I have spoken of. Any soil suitable for corn or wheat, having previously had a hoeing crop, such as potatoes or mangolds, would suit admirably for the purpose. A half acre well ploughed and planted with nuts would raise enough young trees to cover several hundred acres, or if used for roadside planting would extend a number of miles. The cost of seed, care and culture would scarcely be felt, while the beauty insured would be a lasting one, and would hand down the name of the patriotic individual who went into the business for many generations. Seeing trees grow is a thing that all lovers of nature take pride in, but to grow them oneself is a pleasure indeed. Before the white man invaded this continent all the nuts alluded to were used by the North American Indians as an article of diet, and ancient records testify that the quantity consumed at one meal was incredible, and certainly would be unsafe for more civilized stomachs.

I have omitted to mention the acorn or quercus family, of which there are five varieties, as I do not suppose they come within the meaning of the term "nut-bearing" trees.

I cannot close this paper without a further strong recommendation to all those who have not given this matter the attention it deserves, to begin at once to plant, and to plant early and plant often, and especially to commence with the nut-bearing trees. The collection of their seed is easily made—much more so than that of the smaller seeds. My friend Chief Johnston can supply any amount of either black walnuts or butternuts, and they will be found the handiest and easiest to plant. It would be well, also, to secure at some of the shops at once, before they become too dry, some sweet chestnuts, and pack them in moist sand, keeping them in a cool cellar until spring, when they should be planted early in a deep rich bed, about an inch and a half deep. I will conclude this paper with a few lines written for the occasion:—

No man who owns a house or hearth,
A rood of land, a speck of earth,
Can say his duty he hath done,
If when the eve of life hath come,
He cannot point to some cool shade
By tree, himself hath planted, made.
Its youth his youth in union sprung,
In middle age its praise he sung,
And ere his mortal coil shall dwell
In tenement of coffin shell,
Beneath its shade a spot he'll choose,
Where autumn skies and autumn hues,
Shall blend in harmony on high;
And from a noble canopy,
His only epitaph shall be
The waving sigh of that dear tree.

MR. DRURIE.—I see Mr. Bucke states in his paper that the butternut will grow thirty miles north of Ottawa, and that the hickory grows in the same section of country. I would like to ask him if he has ever seen any hickory growing there? I have travelled all through that section of country, and I have never seen hickory growing anywhere north of about thirty-five miles north of Toronto.

MR. SAUNDERS.—The bark of the butternut is used considerably as a medicine. There is an extract made from it by grinding the bark and boiling it in water. It is used as an aperient.

MR. BEALL.—There is one statement made by Mr. Bucke that I must take exception to; he says that the foliage of the walnut and butternut are so nearly alike that but few persons can see any difference. Now, I rather conclude that Mr. Bucke has not seen many of those trees growing side by side; if he had, I think he would not have made that statement. From the beginning of the season onwards the butternut is much the lighter in colour, and from the beginning of August to the end of the season it is so much paler, it looks like a green faded out—so much so, that you can see the difference half a mile away. He also states that the northern limit within which the walnut is grown extends along the Grand Trunk Railway from Toronto to Quebec. I am quite aware that the map issued by the Government of Lower Canada, or from the office of the Public Domain of Quebec, states that that is supposed to be its northern limit; and that may be correct. But I think the northern limit of a nut-bearing tree, or any tree, should be considered the most northerly latitude in which the tree can be successfully grown. For that reason, I must place the northern limit very much farther north than Mr. Bucke has placed it, because I know it can be grown as far north as our North Pole town, Lindsay. I think the most northerly limit where it can be successfully grown is where the tree can be grown in a first-rate healthy condition—where it will bear its fruit every year, and bear in abundance.

MR. BUCKE.—I merely gave the limit to which it was indigenous; I stated that I thought it could be gradually extended.

MR. SAUNDERS.—I think this question as to the limit to which we can grow trees is in its infancy. The Deciduous Cypress, which has its home in Florida, can be grown as far north as London, and is perfectly hardy. It is a thing we did not anticipate until we tested it; and I have no doubt that the walnut and butternut would grow successfully throughout our North-West Territories if it were tried.

CHIEF JOHNSTON.—I had a long correspondence with His Excellency the Governor-General, in the course of which he ordered three barrels of walnuts. He has sent them to Inverary Castle, in Scotland, and is going to try and grow them. I also sent him some young trees three feet high, and those have also gone there. Here are our very desks and chairs, and even the Mayor's chair, made of that same wood; and do you know that the growth of that wood is going to be extended in our country? His Excellency is taking so much interest in our country and in our wood that he has actually taken the seed to Scotland to plant it. It is also going to be planted at Buckingham Palace. I am now planting all these nuts, although I have the trees already growing on my estate, and there are hundreds of bushels there now. Last fall I got a communication from Guelph, one from Mr. Campbell in Simcoe, and one from a lawyer in Penetanguishene, for seed to plant. All I ask is a couple of dollars a barrel for it. As Mr. Bucke has referred to the subject, I may tell you that the North American Indians have used the nuts for certain purposes for hundreds of years; and at the present time, my wife, who is an English woman, gets them and makes excellent pickles of them, which I prefer greatly to cucumbers—they have a certain taste that is most pleasant, if they are got at just the time of year when they are just so large that you can run a penknife through them. I think that not only the wood, but also the nuts, are of great value. There is a company in the United States whose agent has been all around my estate, and actually measured my trees to ascertain the number of inches through the butts; and they have offered to take out the roots themselves and saw them for gun stocks. There is a beautiful curl in the wood; and the value of the gun stocks made from it is from five to six dollars each. I intend to send one of those gun stocks to His Excellency for a curiosity. Then, this company offer me a dollar a foot for every foot of the trunk of every tree I have there which will make a stick a foot square, without my touching the tree myself. They actually offer also to take the limbs, which are as large as my body, and every fork, and saw them for veneering purposes.

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BEST VARIETIES OF HARDY CLIMBING SHRUBS.

MR. WELLINGTON read the following paper:—

THE CLEMATIS.

No class of plants at the present time is exciting deeper attention or is deserving wider dissemination than the Clematis. Of all our climbers it is the most varied in the colour of its blossoms—the most showy and beautiful. For twenty-five years the admiration and esteem for this plant has been steadily increasing, until to-day it has no rival in point of excellence and popularity save the Rose. During the past twenty years of earnest and intelligent effort on the part of competent florists, this family of plants has been raised from obscurity to a place of highest eminence. The ever-increasing beauty of colour and profusion of bloom, in the later sorts, fully justifies the popularity of the Clematis. There are other reasons, however, which have caused this plant to become so great a favourite. Among climbers it has no competitor. It fills a place hitherto unoccupied; no rival to-day contests its supremacy or seeks to dethrone it. To the eye of the most critical, as well as the most uncultured, its graceful and trailing habit, its rich profusion of bloom, its adaptation to so many varied situations, renders it a source of unfeigned delight—a study, the pet and pride of its fortunate possessor. The success attained so speedily with the Clematis affords great encouragement to a thorough and skilful system of hybridizing, and shows what endless combinations of colour and beauty may be developed in a class of plants now possibly existing in a state of obscurity. The Clematis is a climbing plant found principally in the temperate zone, having a woody stem and compound leaves, with tendrils which act like those of a grape vine and enable it to attach itself to any support. For many years the varieties *Flamula* and *Viticella*, which were known in England two centuries ago, maintain the foremost place. The flowers of the former are small, white, delicate and fragrant; of the latter also small, but produced in almost continuous masses, and of a brilliant blue or purple colour. From the *Viticella* in one of its many forms crossed with *Languinosa*, a splendid species from China, having a strong habit, and bearing very large lavender-coloured flowers, came most of the hybrids we now possess, so marvellous in their beauty. The credit of having brought the Clematis from its obscurity as a plant chiefly desirable for a screen for unsightly places, for one of the most showy of lawn and garden ornaments, is mainly due to Geo. Jackman & Son, of Woking, England; for while other florists had been hybridizing with some success, it was not until Messrs. Jackman had produced the *Jackmanii*, in 1862, that the marvellous capabilities of this family were understood and appreciated. From that time to the present the development and introduction of new varieties has been constantly going on, every season adding to the already lengthened catalogue. Indeed, we fear that this production of new sorts has been somewhat overdone, and too little discrimination has been used in preserving qualities of marked excellence and distinctness. Upwards of one hundred and fifty varieties are now offered by European growers, and it must be confessed that in colour and form some of them are hardly distinguishable the one from the other. We fear that possibly some harm has been done in a too eager effort to multiply varieties; at the same time it must not be forgotten that the flowers of the Clematis appear very different at different stages of development, and many are in consequence led into error. In handling this plant extensively, we have been the recipients of many complaints to the effect that “the Clematis you sent me were all blue or all purple,” the writer seeming to be as little able to distinguish between these two colours as they were to see the point of difference in the plants. Now, if we take, for instance, the four varieties—*Jackmanii*, *Rubella*, *Alexandria* and *Rubra-Violacea*—at certain stages of blossom, they will appear almost identical, even to the most practised eye; indeed we had *Alexandria* and *Rubella* on our table last summer which we were utterly unable to tell apart, and yet as the season advanced and we watched developments we found the contrast to be very marked and striking. During the hot months of summer the brilliant shading of the blossom quickly fades, and hence the identity in appearance of varieties having

the blue or purple as the predominant colour. It is our experience that the Clematis shows the gorgeous brilliancy of its hues, the delicate pencilling and shading of the bloom to the best advantage in the fall, when the rays of the sun are less direct and intense. It is then that these indescribable tints are produced, so marked and so beautiful to the eye, and yet wholly impossible to reproduce on paper or canvas. In the fall, also, the bloom is very profuse and is long maintained, the early frost having little or no effect upon the blossoms; indeed, we think they only serve to bring out the rich shadings more distinctly. It is not until the hard freezes come that the flowers succumb. This free and late blooming propensity in the Clematis is of the utmost importance. We have absolutely nothing in the way of climbers to fill the place; for autumnal blooming roses, although they give us bloom sparingly, yet the flowers begin to discolour and lose their charm with the early frost. While there is some confusion as to the identity of varieties, as explained in the foregoing, it must not be understood that we would utterly condemn any of them, or that we claim they are one and the same thing. They are not, and almost every one we have become acquainted with has merits distinctly its own; and not only so, we have been able sooner or later in the season to recognize striking points of difference in the blossom of kinds that at one time seemed alike, as well as the claims put forth in the descriptions of the originators. To the amateur who has a keen desire for collections, who admires fine points, as does the breeder of fine cattle or poultry, these features of similarity will be only a source of study; he will take pride in watching the fine points as they develop, and will ever see new beauties that would escape a less cultured discrimination. To the average planter, however, it is a matter of importance to obtain varieties that show strong contrasts, as his assortment will be limited and he wishes to produce the most striking effect. The predominant colours in the Clematis are blue, purple and white. There is only one red that is worthy of the name, and even that comes very far short of what the imagination seems to picture it. This is the *Viticella Rubra-Grandiflora*, which is small in flower compared with many other sorts, and of a dull, uninteresting red; a sort of brick colour, in fact, rather than the bright red many seem to fancy it. It is, moreover, rather an indifferent grower.

Clematis Jackmanii.—Among purples still maintains its rank, and probably will never be deposed. An exceedingly strong grower and free bloomer, it never fails us. It is indispensable in any collection, and if a man can have only one Clematis, let it be *Jackmanii* always.

Velutina Purpurea.—Is another fine purple, darker than *Jackmanii*—darkest of all. It has a peculiarly velvety-blackish appearance, and is a free bloomer, with large flowers.

Rubella.—A rich, winey purple; blooms freely late in the season; flowers large; and plant very robust and vigorous in habit.

Gem.—This is a perfect blue, bright and showy; the plant of good habit, and the best of this colour; flowers large and abundant.

Lady Boville.—Another blue; not so large in size or flower as *Gem*, but clean cut and striking; habit vigorous.

Languinosa Candida.—This is one of the most desirable of the whites. It produces very large flowers, of a greyish white at first, which afterwards turn to a pure white. It is indispensable in a collection, and thrives in any place suited to the Clematis.

Henryii (Anderson's).—To our mind there is no white that equals the *Henryii*. There is something peculiarly life-like, almost speaking, in its bright, compact, clean-cut blossom. It has, we think, more constitutional vigour than any of the whites. It is a pure white, and seems less liable to blister or discolour from the sun's rays, and therefore holds the flower in its beauty longer.

Lawsoniana.—The European descriptions say "A rosy purple." We should call it a deep mauve, the purple tint almost immediately disappearing after the bud opens. It is unquestionably one of the greatest acquisitions among Clematis, producing flowers in continuous succession, very showy and beautiful, and the plant remarkably vigorous. It is almost, or quite, as indispensable as the *Jackmanii*.

Star of India.—Is a very showy and free flowering sort, of violet-purple colour, with turkey-red bars through the centre of each flower leaf; very striking—the best of its type.

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Magnifica.—Another variety of the *Jackmanii* type, but distinct and effective in having red bars through the centre of each flower leaf.

Marie Lefebre.—Probably the handsomest of all the *Clematis* yet introduced. A pale silvery mauve, with deeper mauve-coloured bars through the centre of each flower leaf. Not yet extensively grown, and possibly lacking in constitutional vigour. A further test of this variety is desired, in order to understand its full merits, but in beauty of flower, in our mind, it is unsurpassed.

Excelsior.—Somewhat double in its habit, with flower six inches across. The colour is greyish purple or mauve, with plum-coloured bar; exceedingly beautiful and promising.

The foregoing varieties represent, perhaps, the best of the types. Other sorts have their varying peculiarities and merits. We do not feel as if we could part with any of them, greatly as the list is extended, and we have never yet met with a person having one of the approved sorts growing, of whatever name, or however so much like other kinds, who was willing to part with it.

Hitherto we have only spoken of the perpetual flowering *Clematis*, believing, as we do, that the perpetual habit is of the greatest value, and will commend itself most generally to the planter; and in a cold climate like ours they are particularly desirable, from the fact that they produce flowers from the new growth each season which spring from the root. The past season's growth is therefore of no consequence. It will die, leaving the root, the only valuable part, and this we can protect by mulching, and carry through the most severe winter with perfect safety. The spring blooming kinds should not, however, be overlooked. They flower from the old or ripened wood of the previous year's growth, and consequently when in bloom present a more abundant and massive appearance than the perpetuals. Some of them, like *Lucie Lemoine* and *Vesta* (whites, and the latter fragrant), are very double, as much so as many kinds of roses. These sorts and many others are wonderfully beautiful, and deserve a rank little inferior to the perpetuals. They are very superior as pillar or trellis plants.

As to the position which the *Clematis* may occupy, there is scarcely any place where they are inappropriate. They are excellent upon the lawn as pillar or stake plants, or growing upon the stumps of trees; in beds or borders in the garden they cover the surface with the richest carpet of brilliance and beauty; for trailing upon verandahs or trellises and arbors, there is nothing so effective and pleasing; over mounds of rock-work, with an intermingling of varieties of different colours, they present an appearance of marvellous beauty; and as pot plants, trained upon wire frames of any desired shape, they have few equals.

Having thus described the *Clematis* and pointed out some of its characteristics, we are now to consider the best methods of growing. Our own experience would lead us to say success depends upon high culture. It transplants well, but is a gross feeder; you can scarcely over-feed it. Select a good rich soil in the first place, and then annually or oftener supply heavy dressings of rich, well-rotted manure, thoroughly incorporating with the soil. Frequent applications of liquid manure will be found very beneficial and amply repay time and trouble. The perpetual qualities of the plant are not fully brought out unless kept constantly growing, and to do this it is necessary to supply unfailing nourishment. In the fall, before freezing weather sets in, mulch heavily, from four to six inches deep, with well-rotted compost, spading into the soil in the spring before the plants begin to start. We do not know of any better system of culture than this. It has never failed to produce the most satisfactory results with us. Should the soil become heavy we would loosen it with an application of sand or sandy loam.

We now reach a most important question—Is the *Clematis* sufficiently hardy for Canada? We have for several years past handled the *Clematis* largely in Canada, importing most of our stock direct from Europe.

For the past two years we have propagated ourselves a good many thousand plants, and now have over forty of the best varieties at our nurseries—all of which have blossomed with us.

We have given the *Clematis* special attention, and as far as possible ascertained what success our customers have had in different parts of the Dominion. We have sent plants from Sarnia to Halifax, taking in all the most important points in the different Provinces,

and have never heard of a single case of winter-killing in the Clematis. In Toronto and Montreal alone we have sold several thousand plants, and there is nothing we have handled that has given better satisfaction. They carry and transplant easily, and with any fair average usage the plant is sure to grow. If liberally fed the plant each year increases in strength and number of its shoots, and consequently the number and size of its brilliant blossoms. At two years of age the Clematis is large enough for the nursery-men to send out, and it usually requires two years from planting for it to show the beauty and size of its flowers. They generally flower the first season, and it is not uncommon for them to give grand results when well cared for. One gentleman in Montreal wrote us that the Clematis we sent him (a white) had the first season grown over 15 feet, and had produced from 70 to 80 blossoms, some of which measured six inches across. To show the capabilities of the Clematis we quote the following from a letter written by Mr. Fowler, Lord Polwarth's gardener, whose estate is about forty miles from Edinburgh:—

"The plant in question was planted five years ago, from a four-inch pot, against a wall with an eastern exposure. As the garden walk passes close by the wall, and consequently over the roots, I had the ground well prepared at the outset. The natural soil being light, upon a gravelly bottom, I added a mixture of one-half heavy loam and one-half natural soil, with a considerable quantity of well-rotted manure, incorporating them well together, and beating down the whole before planting, to make the walk solid.

"In order to protect the tiny stem of the plant from injury, I had two short boards nailed together in the form of a V, and placed against the wall. The plant made several shoots, which were carefully nailed in as they grew. The only attention it has required since has been the pruning off of the old flower stalks and leaf stems, and the equal distribution of the branches. I have it now trained over a surface of 15 feet square, and it is capable of covering a much larger space had it been at my disposal. I have never pruned off a single living bud, but as they burst into growth have had them neatly tied in. Thus treated, they flower in wonderful profusion from early summer until late in autumn. At the beginning of last September the flowers on this plant were counted, and the number then open was found to be 1,275—the grand effect of which can scarcely be imagined. The plant well deserves the popularity which it has gained, being perfectly hardy, easily managed, and unrivalled in colour and flowering properties by any climbing plant I know."

We believe the Clematis in Canada capable of as fine results, for we are satisfied it is thoroughly hardy, and one of the few shrubs of value that the Canadian florist should propagate largely. The spring bloomers, which flower from the old wood, we do not think sufficiently hardy for general culture in Canada. In Western Canada they should do well, but our own experience has not been extended enough to warrant us in advising their general planting.

MR. BEADLE, seconded by Mr. SAUNDERS, moved that the thanks of the meeting be given to Mr. Wellington for his paper; and that he be requested to allow it to be published in the Annual Report.—*Carried.*

MR. SAUNDERS.—There is one hardy climbing vine, a native, which I think a great deal of, but which is not very much known; it is the Wild Yam, or *Dioscorea villosa*, which is remarkable for the beauty of its foliage. The colour is a dark green; the veins, or ribs, of the plant are very deeply impressed, and the leaves hang over each other in such a manner that when the plant is nicely trained against a wall it presents an appearance almost like that of tiles on a roof. There is another climbing vine not much known, but which is also valuable; that is the Dutchman's Pipe, or *Aristolochia siphon*. It is a native of the more northern portions of the United States. The foliage is very large and handsome. The vine is a very rapid grower, and besides that the flower is very curious and beautiful, resembling somewhat a pipe in form. Another of our natives is the climbing Bittersweet—the fruit of which will be illustrated in the group of berries and fruits in the next number of the *Horticulturist*. It is a well-known climber in many parts of the country; in other portions again it seems to be very little known. The foliage is very handsome throughout the season, being a bright green; and in winter, when hung with scarlet berries, it presents a very pleasant picture.

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MR. ARNOLD.—I endorse what Mr. Saunders has stated with regard to the pipe vine. If I were confined to one climbing shrub I would take that. It is perfectly hardy; it needs no protection in the winter anywhere. The flower is a curious one. I would advise everyone who smokes to get one, and use no other pipe but the Dutchman's. It is evidently the pattern from which the meerschaum pipe has been taken. It is rather difficult to copy it. I do not know how to propagate it from cuttings, and it takes two or three years to grow it from layers. The next climbing shrub I would choose would be the *Wistaria Sinensis*; it bears large racemes of flowers, sometimes a foot long, and really beautiful. There is also the Trumpet Flower—another very fine climber. The roots take hold well. Those varieties of Clematis that flower on the old wood have not been satisfactory to me; it is very few that will stand our winter; but the *Jackmanii* may be killed down to the ground every year, and yet it will grow every year and be full of blossoms.

MR. WELLINGTON.—There is another climber that I would like to call attention to. It has no flower; it is the *Ampelopsis Veitchi*. I think it will grow anywhere that the *Aristolochia* will. It resembles our American ivy, only it is more handsome. It is in great demand. In fact, it is in such great demand that many American dealers are unable to supply it to all their customers; and our buyer in England was unable to get it—it is picked up so rapidly.

MR. BEADLE.—I have not much to add. The *Ampelopsis Veitchi*, which Mr. Wellington speaks of, I find to be perfectly hardy in St. Catharines. It has climbed up the end of my house, and clings to the bricks by its rootlets. It is very much like the ivy. My impressions are that it does not colour up so in autumn quickly as our *Ampelopsis*. The climbing Honeysuckles our friends are all familiar with; they are mostly very sweet-scented. Hall's Japan Honeysuckle and the old Sweet-scented Honeysuckle are very valuable climbers in my hands. The old Sweet-scented Honeysuckle kept blooming for such a length of time that I thought it valuable on that account. These plants are very hardy. Sometimes we get a winter that kills them some; but we cut out the dead wood, and they come on again; and it may be several years before they get any injury again. The Trumpet is very pretty, but I prefer the scented varieties.

MR. BEALL.—What is the best means of getting rid of that insect that the Honeysuckle is troubled so much with—that little grey insect?

MR. BEADLE.—I have not been troubled with it, but I have this idea that a little diluted carbolic acid would be the best thing for the coccus.

MR. BEALL.—I would like to ask Mr. Wellington if the Clematis has any insect enemies, and if so, what they are.

MR. WELLINGTON.—I have never found that they have. A few in our grounds died down from some cause or other—we never found out what; but the most of them sprang up the next season.

MR. WOODWARD.—With us the Clematis is very much inclined to be troubled with—I think it is—the Wool Aphis. It is a woolly sort of insect. In my grounds where that appears, we dose it with whale oil soap water.

MR. MORRIS.—I have noticed this about the Clematis, that they will die down for months, and then all at once they will make a shoot and go right on again. I have been told that they sometimes remain in that down state for a year.

MR. SAUNDERS.—I have noticed the Clematis eaten off by the Cut-worm; but afterwards the buds have formed—after you have concluded they have died out.

The Association adjourned at half-past twelve until two.

Upon its re-assembling, Mr. ALLEN read the following paper:—

REPORT ON NEW FRUITS.

To the Ontario Fruit Growers' Association.

While your Committee has been comparatively diligent endeavouring to search out the list of fruits, either new or lately introduced into this Province, we have to ask for-

bearance upon the result, and trust that the occasional mention of old varieties in this report will, under the circumstances, be excused.

STRAWBERRIES.

Sharpless.—The reports upon this much praised variety have been very varied. From Toronto and some northern sections we have glowing accounts of it as hardy, very prolific, strong grower, stooling out well, handsome berry, firm and a good colour, flavour fine, and altogether very promising. From other sections, Niagara district, and generally through the west and some sections east, it has not given much satisfaction, some claiming that upon heavy soil it succeeds best, while others are willing to discard it altogether. The more generously inclined, however, are willing, nay prefer giving it further trial.

Crescent Seedling bears a very good character generally over the Province, indeed the choice seems to be between this and Wilson for the million, opinion being pretty evenly divided. If the Crescent was as good a shipper as the Wilson, it would evidently receive a verdict by a good majority. *Crescent Seedling* is variously described as over medium size, uniform, bright red, plant hardy, very productive, flavour medium to good.

New Dominion is gaining in favour, especially as it prolongs the strawberry season up to the first ripening raspberries in many sections. It is hardy, a free grower, berry large and handsome and flavour good; for a family berry it is valuable, and although it is not generally spoken of as a shipper, it commands the top figure on local markets. Growers in the Ottawa district say it has few equals.

Early Canada.—A new variety grown by Mr. A. M. Smith, of St. Catharines; it is a seedling from Wilson and resembles that variety in many respects, colour and flavour almost identical, but it comes in about a week earlier; it is very productive and hardy, and altogether a variety that we would like to see further tests of. Already it has been tried on various soils in the western counties and also in the Ottawa district, and the reports given go to shew that it is valuable for market. One extensive grower reports that he has such an abiding faith in its good qualities that he has planted largely of it for profit.

Mary Fletcher.—A new variety, originated in Nova Scotia, said to be very hardy and of an improving turn; its flavour is superb, and while it may never become a valuable berry for market, it is an acquisition to the amateur who possesses an exquisite palate.

Alpha (No. 8).—One of Mr. Charles Arnold's; very early, hardy, productive, some growers say it is equal to Wilson in productiveness and much superior in flavour. The berry is very firm, one of the best for shipping; it is a great favourite in the Ottawa region as well as through the northern and western counties.

Arnold's Pride (No. 23).—A very large conical seedling, dark red berry, productive. The fruit is borne in large clusters on long strong stalks; leaves large, very dark green on large strong stems; quality of fruit good, ripens ten days later than Alpha. In the Ottawa, Prescott and Peterborough sections this is considered a valuable berry, and one Huron grower says he can satisfactorily fill the bill with this and the two last named varieties—*Mary Fletcher* and Alpha.

Bright Ida (No. 3).—One of Mr. Arnold's promising varieties; an enormous bearer, hardy strong grower, fruit large, bright red, flavour good, rich fragrance, firm berry.

Maggie (No. 4).—Another of Mr. Arnold's; luxuriant grower, dark green foliage, strong, good bearer, ripens with Wilson, fruit large, dark red and much richer flavour than Wilson.

Great American is not generally well spoken of, said to be treacherous, giving with extra care and cultivation an abundant yield, and under other circumstances often proving a complete failure.

President Lincoln has only been spoken of by a couple of growers who say that it is very sweet and fine in flavour, strong hardy grower and fairly firm fruit.

Miner's Great Prolific resembles the Charles Downing in many respects, but larger, better adapted to variety of soils, of a darker color and a more even cropper.

Glendale is recommended for its lateness and good shipping qualities. It has not been extensively tested yet, however, but promises well.

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RASPBERRIES.

Cuthbert has not yet been tested sufficiently to enable us to form an opinion, but where tried growers report it as "promising," its large size and bright red colour, together with productiveness will make it popular, providing it is hardy enough to live through a Canadian winter such as the present. One grower in Bruce county who has tested it, says that it is not hardy, and it winter killed a year ago in Waterloo.

Queen of the Market is claimed by some to be *Cuthbert*, and when we examine the fruit there seems to be no difference whatever; the canes, too, resemble each other very much, although some of the best American growers claim it to be quite distinct from the *Cuthbert*.

Niagara.—One of Mr. A. M. Smith's seedlings, a cross between *Clarke* and *Philadelphia*, and in many respects bearing their characteristics, but it comes in for market later, which is, at the present day, a very valuable point in its favour. In size and quality it surpasses its parents and altogether is likely to become valuable for market. We would strongly advise a free and extended trial of this new aspirant.

Diadem seems to be the favourite yellow raspberry on account of its high fine flavour, it is said to be quite hardy and productive and has but one fault, if such it can be termed, that it belongs to that modern class, the *Sports*. Upon one occasion at least a single cane was known to have produced berries of two opposite colours, although possessing the same flavour.

No. 10.—One of Mr. Arnold's hybrids; very large, dark red, productive, and of excellent flavour, one of the hardiest yet grown by that celebrated hybridist.

Saunders' Hybrids.—Crosses between red and black varieties, have a value peculiar to themselves in their quality for cooking and canning, they are very hardy and productive, colour alone being against them (a dark brown). *No. 69* is early and productive. *No. 70* would follow 69 in season, a fine large berry. *No. 55* is late and productive. *No. 72* is a cross between *Doolittle* and *Philadelphia*; it partakes largely of the peculiarities of both parents, the berry is something larger than *Philadelphia*, of a dark reddish or purple colour; it is one of the hardiest varieties yet tested in the Ottawa and Cornwall district, a strong grower and very productive. The chief drawback to it is that it does not sucker and seldom roots at the tips, and hence the canes have to be laid down in order to secure fresh plants.

Seedlings from the last described raspberry have been raised by Mr. P. E. Bucke, of Ottawa, very successfully. Mr. Bucke reports that he has a dozen of such seedlings and all are different, one white, two black caps and the rest red. Amongst the latter there is a considerable difference in the colour of the stems, characteristics of leaf, and size and shape, of berries—in some the seed lobes are large and in others small. The fruit as a rule is larger than the parents, and the black are perhaps a little more juicy than the original *Doolittle*. This is an interesting experiment, showing the intimacy of Mr. Saunders' cross, the seeds of which revert back to the original types in the second generation. These seedlings are hardy and the black caps root strongly.

Gregg is one of the most promising black caps ever introduced, hardy, an immense bearer, large and best quality; being later than most other varieties makes it of extra value.

BLACKBERRIES.

Snyder is claimed to be very productive and some say of a finer flavour than *Kittatiny*, but we believe the latter to be the best for all purposes.

Thimble Berries, so called probably because of their resemblance to the shape of a thimble. They are to be found wild in many sections of the country, in the northern sections of this Province, along rocky ridges, etc. The plant is undoubtedly extremely hardy, the canes are immense in size and resemble *Mammoth Cluster* in vigour of growth and appearance; it propagates freely by suckers, immensely productive, fruit clear black, sweet, flavour quite distinct from any of the cultivated varieties of this class; it makes a fine preserve and requires but little sugar; in pies it is delicious; it ripens in August and can be shipped a long distance on account of the firmness of the berry. In markets where

it is known and appreciated it is eagerly bought up at from fifty cents to one dollar per pail. We would recommend some of our enthusiasts to make a closer acquaintance with this variety, bring it into thorough cultivation and cross it with some of other varieties. The experiment is well worthy of trial at least. We believe this berry to be valuable as it is, but a proper cross might produce something marvellous. There are other varieties of this berry, similar in growth and colour of fruit, but the canes are more slender and the fruit is of a coarser flavour and in shape nearly round.

CURRANTS.

Lee's Black Prolific is becoming a general favourite where thorough cultivation and feeding is bestowed; the bunch and berry is much larger than Naples, and quality for preserving very much superior. It comes in early and is enormously productive; but in order to reap full benefits it is absolutely essential that thorough and regular manuring and cultivation be employed.

Saunders' No. 35.—A black currant seedling, very productive and of superior quality, said by some even to surpass Lee's.

Saunders' No. 42.—Another black seedling, very productive, large, and much sweeter than Naples.

Saunders' Seedlings.—Red, resembling Red Dutch in bush and cluster, but of a much brighter colour; flavour very agreeable; promising.

GOOSEBERRIES.

Houghton's Seedling is more generally spoken of, and more favourably than any other.

Downing's Seedling, while spoken highly of occasionally, is frequently reported against as not so productive nor so valuable for market. It has proved worthless in some sections of Northumberland County.

Charles Arnold.—A cross between Houghton's and Ashton's seedlings (one of Mr. Saunders'); is large, dark red, good.

Beadle.—A cross between Downing's and Ashton's seedlings, is an upright grower, fruit good in quality and large, productive.

Dempsey.—A cross between Houghton's and Roaring Lion, reported as Saunders' No. 17, is considerably larger than Houghton, immensely productive, good.

Pearl.—A cross between Houghton and Warrington, larger than the former, very productive.

Beauty.—Another from the same cross, larger, but not so productive.

Ruby.—A cross between Houghton's and Ashton's seedlings, beautiful red berry, very productive, fine, of a drooping habit.

We are of opinion that all these varieties are possessed of value and should be brought more prominently before the country. With that end in view we suggest the advisability of propagating from all of these on the grounds of the Guelph Model Farm, so that our Association can have them distributed extensively in order to obtain a better test of value.

CRANBERRIES

Are reported as growing wild in marshy spots along the shores of Lakes Erie and Huron and in the Counties of Middlesex, Lambton, and Bruce. In one case a report comes of a farmer who has nearly two acres of such marshy land covered with plants which bear a good crop of berries every year; it is on the banks of a small inland lake where the surrounding grounds are flooded every spring, so that grass is pretty well killed out. Where a proper situation can be had for flooding the grounds late in spring there is probably no crop that will give so large a return of clear profit to the acre as this, and we only wonder when we see pieces of land, well suited for the purpose, lying waste or used year after year in marsh pasture, while it might be yielding a much larger return under a crop of cranberries.

GRAPES.

Brighton.—Reported from Northumberland, Essex, Simcoe, and Perth as a strong grower, a regular and abundant cropper, the vine quite hardy and fruit good quality. Two reports agree in stating that the fruit must be used soon after ripening, as it soon loses flavour.

Moore's Early ripens a week or ten days earlier generally than the Concord, a larger grape and of about the same grade as to quality, although some claim it to be superior; indeed but for the fact of its ripening earlier the majority would seem to give the first place to Concord for early market value. It has not yet been tested extensively in Ontario, and we would not be surprised to find that after a better trial *Moore's Early* would have to be satisfied upon the whole with second place.

Abyssinia.—One of Mr. W. Haskins' hybrids, a cross between Creveling and Hamburg, free grower, bunch medium size, berry large, quality fair; would like to see it tested further.

Albino.—Another of Mr. Haskins' hybrids, a hardy white grape, strong grower, productive, foliage fully equal to Delaware, bunches well shouldered, flesh firm, flavour medium to good, a promising grape. Mr Haskins has also a white or rather yellowish grape, a cross of Concord and Allen's hybrid, very prolific and hardy, strong thick foliage, compact and large bunch, but quality is not up to the desired standard if we judge by the specimens we examined at the late Provincial Exhibition.

White Delaware follows Delaware in form of bunch and size of berry, flesh firm and pleasant, skin partakes of the choke cherry nature when chewed.

Seedling A.—From Hartford and Hamburg, dark, juicy and pleasant.

Pearl.—A white grape from Delaware by White Muscat, seems to lack character to make it of value in its class.

Janesville is reported on from the eastern part of the Province as hardy, early and valuable; some claim it to be better for value than Concord; other reports again place it as medium, while some say it is not worthy of cultivation. Upon the whole a majority speaks strongly in its favour, and we would like to have it further tested and reported upon, as it appears to be promising.

Lady.—A Concord seedling, white, said to be a few days earlier than its parent, skin tender, liable to crack, vine strong and vigorous, quality good.

Dempsey's No. 18.—White, ripens with the Burnet, quality good, but vine a feeble grower.

Dempsey's No. 4.—Black, resembles Burnet but smaller, ripens about same time and of about same quality; it is a cross of Hartford and Black Hamburg; it has some of the flavour of the latter.

Corinthian.—It has been suggested by one of our fruit enthusiasts that this variety should be tried in Ontario. This is the grape vine upon which the dried currants of commerce are grown; the fruit is small, but the vine is enormously productive. We doubt very much if the *Corinthian* would succeed here, but would like to see the matter tested as a new industry might spring up should success happen to crown such an effort.

Croton is only referred to by correspondents from two sections, where it is spoken of as a medium grower; fruit ripens very early, quality excellent, bears regularly and abundantly, but, says a Northumberland grower, "the vine is tender and requires careful protection."

Burnet.—It is surely very gratifying to hear favourable reports of trees and vines sent out by the Fruit Growers' Association. During the past two or three months we have had reports covering a very large portion of this Province upon the Burnet grape, and generally speaking they bear undoubted testimony as to the value of this new grape. Out of some forty-seven reports from different sections we only received six that gave anything but the most flattering accounts. Of these six some say that fruit does not set well, two say theirs mildewed slightly, and one that the vine was not making a strong growth. Altogether we conclude that the vine is hardy, a strong, vigorous grower, and the fruit of excellent quality as well as early. We also believe that the fruit does not always set well on the young vines, but patience for a couple or three years will, we feel sure, give an

entirely different and satisfactory result. Several growers complained that the birds took the fruit as soon as ripe. We admire the good taste of the birds, and score one for their excellent judgment.

Early Dawn.—A seedling of Israella, black, resembling Crevelling but not so good a grape; flavour fair, bunches small, berries round, a good grower, but not to be compared with many other older varieties for general cultivation.

Dempsey's No. 25.—White, bunch and berry large, vine hardy and strong grower, productive, quality good; in some cases it is said to ripen too late to be of value for general cultivation.

Lady Washington.—One of Mr. Rickett's seedlings, one quarter exotic; said to be a vigorous grower and good bearer, large bunch, quality fair to good, liable to mildew.

Pocklington.—White or golden yellow, fine large bunch and berry, sweet when fully ripe, pulp rather tough, inclined to shell badly when ripe, hardy and a good grower, but too late to be valuable for general cultivation, quality medium, third rate in its class.

Champion.—Early but of poor quality and not worthy of general cultivation, does not ripen evenly on the bunch, subject to rot. On account of hardiness it may be valuable in the colder sections of Ontario.

Prentiss.—White, a seedling from Isabella, vine hardy, a strong grower, thick healthy foliage, very productive, ripens with Concord, bunch and berry about the size of Concord, an excellent shipper and keeps well, quality good to very good. We hope to see this grape tested in Ontario, and we believe it will give satisfaction.

Senasqua.—A black grape originated in New York State, a seedling of Concord fertilized with the Black Prince, vine said to be hardy and a vigorous grower, bunches medium to large, compact, berry not quite so large as Concord, quality good to very good.

Niagara.—White, from Concord and Cassady. From all accounts this appears to be the hardiest yet, the vine is a remarkable grower and ripens wood to the very tips early in the fall, foliage thick, deep green, leathery, luxuriant, holding its colour and freshness from the base to tips of the stem after other varieties have been browned and crisped with frost. From character of wood and foliage we think that the Niagara should succeed as far north as any known variety. It is an immense bearer, bunches large, shouldered and very compact, berry fully as large as Concord, quality and flavour peculiar to itself, best, rich. After testing all the varieties we know of on the catalogues our desire for a really fine fruity grape would invariably bring us back to the Niagara, and after testing and retesting over the tables we would still come back to Niagara, with a strong desire to remain. It has a tough thin skin, not liable to crack, melting and delicious to the core, with a fine rich aroma. As a keeper and shipper it has no equal that we know of, and while it ripens as early as Hartford Prolific, it will remain to the latest without losing in appearance or quality. Truly we have found in this all that can reasonably be desired for a white grape for the million. The Niagara will be ready for distribution in the spring of 1882.

Jefferson.—Red, one of J. H. Rickett's seedlings, a cross between Iona and Concord, vine a strong grower, short jointed, leaves very large and leathery, bunch large, shouldered; berry medium, roundish oval; flesh tender, sweet, pleasant, quality good; ripens about same time as Concord; a promising grape; has not yet been tested sufficiently to know whether or not it will be suitable for general cultivation in Ontario.

CHERRIES.

The only new cherry that we know of worthy of note is one grown on the banks of the Maitland, near Goderich. Mr. Charles Arnold, of Paris, has tested this cherry and pronounces it very good. We have seen it growing for years but have not been able to trace the history of the original tree; it is supposed, however, to be a chance seedling; the tree is a hardy, strong, vigorous grower; the fruit resembles Napoleon Bigarreau and nearly as large; for preserving there is none better; for shipping we never saw its equal, if need be it could easily be shipped across the Atlantic in prime condition; it is an immense bearer, the fruit grows all along the limbs and not on spurs like most other cherries; it ripens after the other cherries are about over. It would be well to secure grafts of this variety and have it thoroughly tested at our experimental grounds at Guelph and fully reported upon.

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PEACHES.

Early Louise.—Our reports of this variety are very varied. Some Niagara district fruit growers tell us that it is too small and flavour not good enough to make it a valuable market variety. From others in the same district and from Lambton County we hear that the Louise is a good peach, very productive, and resists the frost better than most varieties.

Beatrice.—A great bearer, inclined to over bear if thinning out be neglected; fruit high coloured, but too small to make it a valuable market peach, too soft to ship well excepting for a short distance.

Amsden's June, Alexander, Early Canada.—One grower, who is a close observer, says of these three, that "if you shake them up in a basket you cannot pick out the separate varieties, they are all so much alike." All three have been claimed to be free-stones time and again, but testimony does not bear this claim out, nor does our experience; on the contrary they appear to be clingstones of a type that would try the patience of a saint. But they are *early*, and that is an important point where commercial value is considered. Amsden is on the small side, and in this respect at least the other two have an advantage. Upon the whole the choice is almost equally divided between Early Canada and Alexander, with the preference slightly in favour of the latter.

Early Rivers has not yet been tested sufficiently to warrant our passing judgment upon it fully; present opinion gives it as a good bearer, fair size, straw colour, slightly tinged with red, thin skin and fine grained delicate flesh, tender, melting; it will never become popular as a shipper to a distant market, but will suit a near market very well; in some sections this is claimed to be very valuable on account of its ripening just after the earliest sorts and thus filling up the gap between them and the Crawfords.

Hales' Early appears to have redeemed its former rather bad character for rotting; it has been a good crop the past season with most growers.

Waterloo ripens a week earlier than Hale's Early, and as far as tried promises fairly well.

Barnard's Early is spoken of in Lambton as the climax of excellence, that it is very productive and should be largely cultivated.

Foster is esteemed in Huron and Essex for fine flavour and high colour.

Ott's Seedling.—Yellow flesh, an excellent peach for shipping, good bearer and hardy, medium size.

Mr. P. Pincombe of Strathroy, has a large greenish-coloured yellow flesh seedling, quality good. Mr. B. Gott, of Arkona, is propagating it, and we will have a fuller report from him no doubt when he discovers the value.

Mr. George Cox of Goderich township has a number of seedlings. Our chairman examined them the past season and selected the following as worthy of more general cultivation. *No. 1*, ripe about 1st September, free stone, large rich yellow flesh, flavour resembling Early Crawford, tree old and a regular and heavy bearer. *No. 2*, very large, high coloured, tree heavy bearer and strong grower, slightly cling, flesh light coloured and delicious, ripe September 5th. *No. 3*, light coloured with fine cheek blush, juicy and delicious, free stone, very large, ripe September 5th to 10th. *No. 4*, light coloured with cheek blush, free stone, flesh straw coloured, very juicy with an agreeable tart flavour, ripe September 2nd to 6th. These trees are old, very large and thrifty, and regular and abundant bearers. In the market these peaches bring as high a price as any of the regular varieties, while general seedlings do not as a rule bring more than one-third as much.

Mr. W. H. Doel of Doncaster, near Toronto, has a very large seedling peach, light coloured with delicately blushed cheek, yellow flesh, free stone, flavour and form resembling Salway with a trace of Late Crawford. The tree is about five years old and appears very hardy; the fruit clings well to the tree. The past season this tree bore a heavy crop; ripe about the last of September.

Mr. Hugh Walker of Paris, has a seedling which fruited on his grounds the past season; fruit very large, yellow flesh, free stone, quality good, flavour strongly resembling Early Crawford.

Collingwood or Parke's Seedling.—The past season this tree bore a good crop; fruit

large, high coloured, yellow flesh, ripened about 6th September; tree hardy and a fine grower and abundant bearer. Up to date the wood appears fresh and not likely to be injured, well ripened to tips. Mr. Gamon, the originator, has other seedlings, but none of the same apparent value or quality as this. This, we believe, is the first instance of success in peach culture in the Collingwood district.

PLUMS.

Moore's Arctic.—A native of Vermont; it is largely grown and highly thought of in New Brunswick, and is undoubtedly valuable for general cultivation, succeeds in the coldest sections where scarcely any of our other varieties will succeed; fruit dark purple, medium size, enormously productive, free from rot, good for both table and cooking, tree a free grower. The Messrs. Leslie of the Toronto Nurseries have this valuable variety in stock.

Greenfield.—A handsome red plum, good flavour, early and immense bearer, said to be a seedling of the *Magnum Bonum*, but the foliage gives unmistakable indications of a wild origin, and therefore we think it quite likely that the parent has not been as supposed. This plum is found in the Ottawa region, it is larger than any of the wild varieties; when fully ripe it is sweet and juicy, the stone is rather large; 40° below zero has never had the slightest effect on the fruit buds or the tree. This variety is being tested in the North-West, and we believe good accounts will be heard of it in a year or two.

Mooney.—A large red plum somewhat resembling Pond's Seedling, claimed to be superior to that variety and quite distinct.

Glass' Seedling appears to be generally a favourite, but almost every grower has a trick of suggesting that there is no difference between it and Quackenboss. Some of us held this opinion from the first, but did not wish to speak of it for fear of wounding the feelings of friend Glass; besides we believe it to be really a good plum whether it be called by the one name or the other.

Mr. Dougall, of the Windsor Nurseries, has several varieties of seedlings, some of which have already fruited and show promise of excellence. They are being tested and will be reported upon in due time.

We have in view for future report what at present appears to be a very valuable plum. The original trees, nine in number, were found wild about forty-two years ago in the Township of Downie, County of Perth, from which they were transplanted; they are still alive and bear a large load of fruit every year; the fruit is red, with a strong tinge of yellow and distinct yellow spots mottled through; size very large, quality rich, sweet, juicy, delicious, the best red plum we ever tasted, one of the best to eat when fully ripe; makes a delicious preserve; the tree is hardy without doubt, and has so far proved *Curculio* proof; the rot has never been seen in these either, while both *Curculio* and rot abound in other varieties in the same orchard.

We find many orchards in the County of Bruce planted with wild plums, and although none have been seen equal to the one just described they all appear to improve under care and cultivation. Indeed it appears to us that more attention ought to be given to our native fruits by growers; there is no doubt but most excellent varieties may be found by bringing them from their native wilds and applying cultivation, crossing, etc.

Goderich.—The finest plum grown in the Huron district; cannot be placed among known varieties; the original tree is large and in prime bearing order; the origin is not known, and although specimens of fruit have been submitted to eminent authorities upon such fruit we have not found any one who can place it, but all unite in saying it is good to best. The tree is a very strong thrifty grower. When young it is one of the hardest trees to grow in the nursery row, it has to be staked carefully to prevent growing in a spiral form; but when properly trained it makes a very handsome tree; the leaf is the largest we have ever seen on any plum, rough and strong and thick; tree hardy and a good bearer; fruit is of a dark purple in colour and in form like a snow apple, almost round, with a depressed line down one side from the stem; stem medium in length, strong and well attached; quality good to best. It attracted considerable attention at the Industrial Exhibition two years ago from its large size and fine appearance. The wood is fine and glossy in appearance, the buds strong and large. Messrs. George Leslie and Son who are propagating largely of this variety, find it difficult to train on account of its crooked

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tendency. There is no better shipping plum than this on the list, even when quite ripe the flesh is so firm that it will bear shipping well to a considerable distance; season from the middle to the end of September.

PEARS.

Flemish Beauty is a favourite in the colder sections of the Province, where our reports say it has proved quite hardy. In the Toronto section it is almost worthless, the fruit spots badly and cracks before maturing. More or less of this is also complained of from other sections, but not to the same extent as at Toronto. The tree it seems is very subject to blight.

Clapp's Favourite is spoken very highly of by all our correspondents; from the north and east we are told that it is hardy and a good bearer, and from south and west we hear a great deal about its handsome appearance. The only objection taken to it is the fact that it has to be used at once when ripe, as it won't keep even a day beyond that point.

Goodale is only spoken of by eight growers, all of whom speak well of it.

Beurre de l'Assomption is said to be too tender to be of value for general cultivation over the Province; it succeeds fair to well in the Niagara district, Huron, and along the Erie shores.

General Todleben.—A native of Belgium; tree said to be hardy and a good grower; fruit large and pyramidal in form; stem nearly three inches long; high, fine flavour; season November, and can be kept up to the New Year.

Toronto Belle.—Originated in the nursery of Messrs. Leslie & Son, of Toronto; supposed to be a chance seedling. The tree is hardy, short-jointed and not a rapid grower; so far it has not shewn any symptoms of blight. Very productive; fruit large to very large, almost a *fac-simile* in appearance of *Beurre Bosc*, but it is at least two months later; flesh white when ripe, with slight crispness, melting, sweet; quality best. The fruit can be kept up to the New Year. From specimens exhibited the past two years, we think this one of our best late pears, and should be in general cultivation.

The Messrs. Leslie have also a winter seedling that keeps well till spring; quality for table medium, but cannot be excelled for cooking; size medium to large; tree rapid grower and an abundant bearer.

Souvenir du Congrès.—A very fine large yellow pear; it grows to perfection in the Niagara district, but is far too tender for general cultivation; many report it killed to the ground around and to the east of Toronto, and in many other districts.

Doyenne du Comice.—A French pear; season December; has not been tested extensively yet; tree said to be very liable to blight.

Mr. R. M. Wanzer, of Hamilton, has a fall seedling; large to very large, ribbed, medium stem, russet about the eye, flesh crisp, sprightly, large grain. The form seems to vary greatly, some resembling *Lawrence* while others resemble *Beurre Diel*. The quality is fair; evidently a good keeper and shipper.

Mr. P. C. Dempsey, of Albury, showed at the Provincial Exhibition last fall a small yellow fall seedling; flavour resembling *Seckel*; size and form resembling *Dearborn's* seedling. This is really an excellent fall pear, melting, juicy, rich, very good.

The same grower showed a winter seedling in size and form resembling *Lawrence*; slightly blushed on cheek, straight medium sloping stem, large spreading eye; strong aromatic flavour, very juicy, sprightly and crisp, very good or best. We would like to see this variety in more general cultivation.

Beurre d'Anjou is a favourite almost all over the Province. It is said to be very free from blight, one grower in Northumberland County says that there they have instances where it has escaped in orchards where it is surrounded by other varieties badly blighted.

A peculiarity comes from a Stratford grower, in the shape of a pear tree which has borne two crops the past season, the first cover came in the usual way, but afterwards the new wood bloomed and fruit set well and fully matured. We did not learn the variety, but presume it was the caper of a *Duchesse*.

APPLES.

Grimes' Golden is well spoken of as a dessert fruit. Flavour rich, spicy; flesh tender, but tree rather late and a shy bearer. In the vicinity of Trenton the tree is said to be a free grower, hardy and fruiting well, but that its fruit was the past two seasons destroyed by the codling moth, while other varieties were comparatively uninjured.

Wagner is gaining in favour over a large section of the Province. Tree very hardy; free grower and early, regular and abundant bearer; quality good; a fine shipping apple.

Mann.—A deep green hardy winter apple, dotted all over with white spots, medium size, flat, depressed eye, short stem. On a loaded tree the fruit varies very little in size; a long keeper and very fine shipper; tree hardy and thrifty. Grown pretty generally in sections of Huron County, where it is considered one of the best for export, averaging a better price than either Baldwin or Greening.

Pomme d'Or, as shown at the Provincial Exhibition last fall, was too wild in flavour to merit a place in a collection.

Fallowater Seedling, also at the Provincial, was no improvement on its very ordinary parent. Although large and doubtless a good shipper, it could not hold a demand in market with its inferior quality.

Mr. Beall, of Lindsay, showed at the Provincial last fall a small fall seedling, in some respects resembling Autumn Strawberry, but in the face of the already too long list of fall apples we could not find it a place.

Taylor Fish.—An English apple. Mr. Latouzel, of Cherrydale Farm, Huron County, showed us some very fine specimens the past season. The tree bears regularly large crops; fruit large, green in colour, with very slight cheek blush; in form it resembles King of Tomkins County; season middle to end of August; a very fine cooker.

Prentiss.—A native of Prince Edward County. Tree a good grower, a regular and good bearer; fruit medium size, round flattened; colour greenish yellow. Said to be one of the best October dessert apples in that section.

Hastings.—Originated in Hastings County. Tree a fine upright grower, productive; fruit medium size. Said to be one of the best of its season for table and market. High colour, oval shape, flesh very white, juicy.

Leslie Crab.—Originated by Messrs. Leslie and Son of the Toronto Nurseries, when ripe is cream colour with slightly blushed cheek; sweet and agreeable to eat; said to be the finest preserving crab of any, takes very little sugar, larger than Transcendent; tree hardy; a free grower and heavy bearer.

Baxter's Red.—A native of Brockville, a winter iron-clad; larger than Alexander, almost cylindrical in shape, eye slightly depressed, colour darkish red in the sun and light red over, covered with white dots; a fine shipping apple, good cooker; tree very hardy and considered valuable for the colder sections; tree very rapid grower, one of the finest looking among the nursery rows.

Tetofsky.—A Russian apple, one of the earliest, enormous bearer, the fruit often growing in large clusters; a good cooker and fair for table, rather under medium in size. Upon the whole we scarcely think it an improvement on our early sorts.

Grand Sultan.—Of Russian origin; tree a fine thrifty grower; foliage large dark green; very productive and a regular bearer; fruit medium size, form conical, colour greyish white, striped and splashed with red, looking almost like wax; ripens with Early Harvest and continues in season much longer; character good.

Cellini.—An English apple promising well; tree a good grower and enormous bearer; fruit large, form conical, colour greenish yellow, splashed with red; season October.

Ontario is reported from all parts as making a fine healthy growth, and they say in the colder sections that it appears quite hardy.

Coxe's Orange Pippin.—Tree a poor slender grower, but very productive; the fruit forming long clusters giving the appearance as of onions strung in ropes along the limbs; fruit nearly medium size, round, colour green, striped and splashed with red and cinnamon; russet similar to the Ribston; a fine table apple, season November and December.

Mr. W. W. Austin, of Oxford County, has a seedling winter russet about the average size of the American Golden Russet, but more conical, deep eye and small stem, one cheek

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slightly blushed; in form it is as fine and even as if it passed through a turning lathe, its fine form would attract the eye of any fruit fancier; flesh greenish, mixed with a yellowish tinge; flavour sub-acid, crisp, juicy, fruity, pleasant. We would place it as best, considered among winter apples of its class. We believe it would bring as high, or possibly a higher price in Europe than the American Golden Russet.

The same grower has an oval-shaped fall apple, in colour resembling Black Detroit, colour runs through the flesh, making it resemble the flesh of a ripe water melon; flavour sweet, juicy and pleasant. But we could not recommend it for more general cultivation.

Cliff's Hawthornden.—A native of Prince Edward County, waxen colour, rather poor in flavour, and if we can judge fairly by specimens at the Provincial Exhibition last fall, we do not consider it desirable for extended cultivation.

Princess Louise.—So named a year or two ago by a committee of the Fruit Growers' Association. It is a seedling from Fameuse, originated by Mr. Charles Woolverton of Grimsby; in size it is medium; very smooth, conical form, flesh white like the parent, colour also similar; flesh appeared firmer than in the parent, and it is said to be a longer keeper. Our impression now is that this seedling is an improvement on the Snow, and should be brought into more general cultivation.

Wealthy.—Originated in Minnesota from crab seed; fruit large, nearly round; colour bright red on a yellow ground; flesh white with some red stains; tender, juicy and very good; tree free grower and very productive, very hardy; season November and December, but will keep into January. One of the most popular apples in some of the Western States.

Mr. Charles Arnold, of Paris, has two distinct varieties from seed of Northern Spy. *No. 1* resembles the Spy closely in form, size and eye, colour green with a yellowish tinge on cheek; it is a sweet winter apple, juicy and pleasant, flesh resembling R. I. Greening. *No. 2* is a Russet resembling Bourassa round the eye and in form, but resembles Wagener around the stem, size medium, colour about the stem deep red and blushing all through the russet part; flesh firm, and flavour acid and pleasant; season winter.

We think it a pity that fruit growers do not make known through the medium of the *Horticulturist* any new fruits they see, and report progress from year to year; besides being very interesting, it would advance the fruit growing interest greatly. Such a course would be a check upon parties who frequently bring some thing new before the public, and in order to sell it will speak in language too highly coloured. We refer to dealers. Let the growers then speak out and fairly criticize what comes under their notice, giving facts of growth, crop, and market value.

Signed on behalf of the Committee.

ALEX. MCD. ALLAN,
Chairman.

MR. MORRIS.—I would like to ask Mr. Allen where he got his information with regard to the Pocklington.

MR. ALLEN.—The information with regard to that, as well as with regard to all other new fruits, I got by inquiry at the Toronto Exhibition, at the Provincial Exhibition, part of it from Americans I met there. In making up my report I based it on the opinions expressed in the majority of reports which I had received, which were not in every instance in accordance with my own views.

After some discussion, in the course of which Mr. Morris submitted a Report which he had prepared upon the same subject, Mr. Beall moved: "That the Report submitted by Mr. Allen be received and disposed of in the usual manner; and that the Report submitted by Mr. Morris, another member of the Committee on New Fruits, be also adopted and so disposed of."

The motion was seconded and carried.

MR. E. MORRIS' REPORT ON FRUIT.

STRAWBERRIES.

Duncan ("Perfect").—One of the best of newer sorts; fine large fruit, which ripens earliest of any on our grounds; quality second to none; has no superior for garden and home use. To obtain best results, plants should not be crowded and ground requires to be made rich.

Prouty ("Perfect").—This variety is but little known, and its good qualities not recognized as they should be. It is one of the handsomest of strawberries; in shape long and tapering; of excellent quality and very firm; of fine colour, which it retains for a long time; stands shipping equally well with the Wilson, and is almost as productive.

Crescent Seedling ("Not Perfect").—The strawberry for the million; stands the usual slip-shod culture better than any other variety; plant somewhat slender grower, but makes such a large quantity of runners that the ground is literally covered with plants; immense cropper, but berries are apt to be undersized unless ground is made very rich; fruit resembles Wilson somewhat in shape, but of lighter colour; not quite its equal in flavour.

Captain Jack ("Perfect").—Commences to ripen with the Crescent, and a little later than the Wilson, which latter it somewhat resembles in shape and size, but is of better flavour. Upon good strong soil it outstrips the Wilson in productiveness. When fully ripe the fruit separates from the hull, which is a great advantage when grown for family use.

Sharpless ("Perfect").—Remarkable for its foliage; leaves of immense size; wants plenty of room, otherwise will not give satisfactory results. The fruit is very large, inclined to be irregular in form; when fully ripened of fine colour; flavour very superior. It has, withal, its defects as a market berry. Its large size and weak stems cause the fruit to lie upon the ground. It is also too soft for shipping; would only recommend it for amateurs.

RASPBERRIES.

Cuthbert and Queen of the North.—Claimed by some growers to be one and the same. The only difference that I have been able to detect has been in the hardness of the Queen as compared with the Cuthbert. Have also noticed this difference in other plantations. It may not, however, be real but only apparent. Its merits are: Strong, vigorous grower; fruit very large; flavour best; firm; shipping qualities equal to the Blackcaps. From one year's fruiting we judge it to be extremely productive. It has a tendency to throw up suckers which produce late fruit, thus prolonging the bearing season. This raspberry unites more points of excellence than any other of the many new and old varieties that I have tested.

Gregg—Is to Blackcaps what Cuthbert is to the Reds, that is, best of them all. Canes of strong growth and as hardy as any; immensely productive; fruit being larger than the Mammoth Cluster, and ripening somewhat later.

Niagara.—From one examination of a small lot of this variety in bearing at Lockport, N.Y., I have formed a very high opinion of it. Although the patch did not receive the care and cultivation to give the best results in fruit, nevertheless the plants showed immense productiveness. Fruit of large size and ripening late. Would recommend this Society to make arrangements for having plants of this fruit distributed among the members for a more extensive trial.

BLACKBERRIES.

Taylor.—Fruit medium in size between Snyder and Kittatinny. On account of its extreme productiveness, hardness and excellent quality it is worthy of a place in all fruit gardens.

CURRANTS.

Lee's Prolific.—A seedling of the Black Naples, but an improvement on its parent in size and productiveness.

Moore's Ruby.—A new red currant, the result of a cross between the Cherry and White Grape. In size not quite so large as the Cherry, but from the appearance of about one hundred bushes examined, I judge it to be four times as productive, and of milder flavour than any other red currant we know of. I therefore consider it a great acquisition.

GRAPES.

Pocklington.—This is emphatically the era of new grapes, and among the aspirants for the leading position in the white varieties none have taken so many honours at Horticultural Shows as this. While highly endorsed by many of the leading and disinterested horticulturists, such as Marshal P. Wilder, Thomas Meehan, etc., it has been much misrepresented by the owners of rival grapes with the object of lessening its popularity. It is a seedling of the Concord, having the strong growing qualities and hardness of its parent; of much superior quality, however, being very sweet and a good keeper. The bunch and berry are large, the former often weighing from one to one and one-half pounds, the latter being placed thickly on the bunch and of a fine golden colour, covered with thick bloom. It ripens about with the Concord, and this season was picked in good condition from the vines six weeks after it was pronounced ripe. I consider this grape a great acquisition—the best of its colour for both market and home use.

PEACHES.

Wager.—From the glowing accounts we had heard of this variety we took occasion to send a leading man from our establishment to inspect it. The orchard visited was planted nine years ago, commenced bearing the second year, and has borne a full crop every year since without a single break. While most other varieties in the same orchard have failed some seasons to produce a crop, the *Wager* has never. The fruit is yellow, with quite a distinct blush on the side next the sun; size about the same as *Early Crawford*; very thick meat and small pit, from which it parts with very great freedom.

PEARS.

President Drouard.—A late winter variety, of French origin, ripening from March to May, tree bears early; large and well-flavoured fruit. We draw attention to this, having watched its growth for the past six years. It has proved the healthiest and freest from blight of any variety we have yet seen, not even excepting the *Duchesse*. In fact, no blight has yet appeared on leaf or limb, which, taking into consideration the good qualities of the pear, and the fact of its ripening at a season when no other fine fruit is to be obtained, makes me believe that it will take a place amongst our leading varieties.

APPLES.

Many new varieties have been introduced the past few years, some of them only valuable from their extreme hardness, being especially adapted for northern sections. I will only, therefore, refer to two or three of them as being real acquisitions to the already large list for our moderate climate, and as leader I would mention the

Wealthy.—It has the character of the *Fameuse*—fully better in quality, of larger size and perfect in shape, with freedom from spots, which, in some sections, destroys the value of the *Fameuse*. It is also a rather better keeper.

Wallbridge.—A large, red-striped winter apple; and the

Stump.—Similar in appearance to *Sherwood's Favourite*, and ripening about the same season.

CANADIAN WILD FLOWERS.

MR. SAUNDERS.—If there is no one else who has anything to say in defence of the wild flowers of the country, I would like to say a word or two. With the opening of spring, we find in our woods the *Liverworts* or *Hepaticas*, which have been cultivated in

Europe for some time past. They have now got up some double forms of them there, which are very pretty. I find that by transplanting these from the woods into the garden they flower much more prettily than in their native haunts. I consider a patch of Hepaticas one of the prettiest we can have in the early spring in our gardens. They seem to thrive well in any position. Following them is the Bloodroot, the "*Sanguinaria Canadensis*," the flower of which is not large. It belongs to the Poppy family, and, as is the case with the other members of that family, the flower drops its petals very readily. It is a very pretty flower while it lasts, and the foliage is remarkably beautiful. There is another flower closely allied to it, the twin leaf, the *Jeffersonia diphylla*, which closely resembles the Bloodroot in the flower, the latter being white. It also drops its petals. The foliage is even more beautiful than that of the Bloodroot, the leaf being divided into two portions. It is a luxuriant grower, and very ornamental so far as the foliage is concerned. A little later on we have the native phlox. It is a very handsome flower, even grown in the wood, where it is under all the disadvantage of want of care and attention. It comes in at a time when we have very few flowers in the garden, and none of that particular colour. It lasts well; it is a very free bloomer; and it has a very pleasant perfume, though not a strong one. In the liliaceous class we have a flower, which I think ought to be introduced in gardens. I have seen it in European catalogues. It is the dogtooth violet, a pretty lily-like flower with a handsome mottled leaf, which grows out of the ground early in the spring, and the flower also blooms very early in the season. The blossom is elegant in its form of a drooping head, and is very pretty indeed. There is another plant that comes later in the season, which, it strikes me, is well worthy of cultivation; it is the black "cohosh." It is a showy plant, with tall spikes of small whitish flowers which have a very nice appearance in the shrubbery. Then we have the lobelias. They are very extensively grown in Europe, and to some extent in this country, but they have not been much introduced among our people. The *cardinalis* will thrive in almost any good garden soil. In its native haunts it is found in swamps. The flowers are most brilliant in colour, and their season lasts quite a good while. The *lobelia Kalmii* also grows well in gardens.

MR. ARNOLD.—I have had a lobelia growing for years in my grounds, at the wall, and it succeeds splendidly. I was pleased to hear Mr. Saunders speak of the Hepaticas. I would like to suggest—to move if necessary—that Mr. Saunders be requested to cross these different plants, and in two or three years present a plant to each member of this Association. If he would do this, we would have a very great variety. One wild flower which he did not mention is the harebell. You will see it growing wild, sometimes after the winter's snow begins to fall. I have sometimes had a peculiar notion that I would like somebody to plant one of these flowers over my grave when I am dead. I think there is a silent music in it that is really delightful. If this flower could be crossed it would be a great acquisition to our gardens. We seem to be indebted to Europeans for taking our wild flowers, improving them, and sending them back; and what they send back are often not as well suited to our climate as what we might grow.

MR. SAUNDERS.—I am glad that Mr. Arnold mentioned that little campanula; it is one I had forgotten. I have cultivated that little harebell for two or three years, and it is one of the most satisfactory wild flowers I have ever grown. It flowers during the season. No one who has not cultivated the common blue violet can imagine what a profusion of flowers it gives under cultivation, from seeing it in its haunts. In fact, it is a mass of blue for several weeks early in the season. I think it might be added to the list of flowers that might be cultivated.

MR. BEADLE.—Why does not Mr. Saunders mention the yarrows?

MR. SAUNDERS.—The reason I do not mention them is, that they are such shy bloomers that I did not think them worth mentioning in this connection.

CHIEF JOHNSTON.—There is a blue flower with a sort of bell that hangs over—I do not know the name of it—that I cultivate in my garden.

MR. BEADLE.—I would ask Mr. Saunders if he has ever found the *Epigea repens* growing?

MR. SAUNDERS.—No. I found it growing wild in New Jersey once or twice, and sent plants home and tried to cultivate it, but did not succeed. It seems to require a

mass of partially decayed leaves to grow in. I had a quantity sent me from Halifax the year before last, and I planted them, but did not succeed any better with them.

MR. BEADLE.—I believe that is the fate of that plant. It is certainly one of the most beautiful of all the spring flowering plants that I have ever seen, but no effort at growing it of which I have heard, and I have kept track of the experiments, has yet succeeded. It is often in bloom under the snow in the spring. It does not last long, but during the early spring you will find it in those shady nooks where it grows wild.

MR. SAUNDERS.—The kalmia is one of the finest flowers we have in our native wilds. I have grown it to a certain extent. The flowers are charming—clusters of the most beautiful red blossoms that you could find, beautifully formed.

MOST PROFITABLE VARIETIES OF POTATOES.

MR. ARNOLD.—My list would be Brownell's Superior, Dempsey, Rose Climax, Ruby and Eureka. Potatoes are a thing that may be a great success one year and a total failure the next. One soil may be suitable to one sort and not at all suitable to another. A few years ago I got some new potatoes that had been very highly praised, and I determined after two or three years to throw them away; but having none other to plant on one occasion, I planted some of these again, and after the three years' failure they proved the best potatoes I ever grew. No potato scarcely ever continues a favourite for more than four or five years at the outside. The old Climax is, I believe, admitted by everybody to be the finest table potato; and this Rose Climax is a sport from the old white Climax, a red one. It has its faults. Although the earliest of all potatoes, it never yields a crop or half a crop with me. I grew the Beauty of Hebron and St. Patrick this last year, but only one year's experience does not amount to much.

The PRESIDENT.—I do not usually grow five varieties of potatoes. Unless a potato comes to a certain standard I never plant it the second time. In our collection at home this year, we simply cultivated a few Early Rose—a very few, too. My own potato, the Burbank Seedling, and a few Early Rose—those are our varieties of potatoes.

MR. PAGE.—I think if I chose five they would be the Alpha, Beauty of Hebron, Snowflake, White Peachblow and the new "Bet Treble." The Alpha is not a heavy cropper. It must have just the right kind of soil and culture, and then, I believe, it would be as profitable a potato as could be made. It is a good potato from the time it is large enough to use; it is not like our Rose potato, which is soft and wet until it is ripe; but the Alpha can be cooked and used from the time it is large enough to dig.

MR. JARVIS.—I would put all my five varieties in one—that would be the Early Rose. I have tried the Alpha, the Bet and the Snowflake, and I always come back to the Early Rose. So far, I have not planted any other excepting the few we are getting from the Association, to try them alongside the Rose. I have tried all the others, and have come back to the Rose.

MR. BEADLE moves for certain Committees, which were appointed as follows:—

- On Fruit Packages—Messrs. Dempsey, Pettit and Smith.
- New Fruits—Messrs. Allan, Holton, Arnold and Smith.
- Vegetables—Messrs. Page, Croil and Taylor.
- Ornamental Trees and Shrubs—Messrs. Leslie and Arnold.
- Roses—Messrs. Beall, Dempsey and Beadle.
- Hardy Flowering Plants—Messrs. Gilchrist, Forsyth and Bruce.
- Climbers—Messrs. Wellington, Arnold and Saunders.

MR. A. M. SMITH.—I think, for the guidance of this Committee on the package question, it would be well to take an expression of the opinion of this meeting regarding what size they would consider best for the apple barrel, as that is the most important package to be dealt with.

MR. SAUNDERS.—I think any person buying apples by the barrel would prefer the big barrels. Any attempt to cut the size of the barrel down would not meet with my

personal approval ; and I think the sympathies of the meeting would be in favour of the large barrel.

MR. BEADLE.—It seems to me that there is no need of any expression of opinion about it. I do not think we care one snap what the size of the barrel is ; all we want is to have some size settled on, so that we shall know what is the size of a barrel of apples. All we want is to get something definite.

MR. WELLINGTON.—As I understand it, this Committee is to confer with Committees of the New York Horticultural Society and the Michigan Society, and certainly I think three Committees can decide on a size that will be acceptable to the three countries.

P E A S.

The meeting then took into consideration the question as to the five best varieties of table peas.

MR. ARNOLD.—If there is anything that I detest in connection with this Association it is any attempt at free advertising ; and after saying that, I am going to begin and praise a new pea I have raised, that is superior to anything else I have ever grown. I have no pea of any kind to sell—no interest of that kind whatever. In selecting five varieties of garden peas it will be advisable to have them follow each other in season of ripening, and, in my opinion, the earliest and best of all peas grown on this continent is Bliss' American Wonder. This variety is a cross between those two grand peas so well known to most lovers of good garden peas, viz., McLean's Little Gem and that tall-growing, late, but delicious and productive old pea, Champion of England. The Wonder is very early and dwarfish, and very good. Second in season of ripening is the Alpha. This is a very good early pea, but it is a tall grower and requires sticking ; this, in my opinion, is a great objection. Third, McLean's Little Gem, a very delicious, dwarf-growing, productive pea. Fourth, Hayes' Dwarf Mammoth. This pea grows about two feet high, and if planted at the same time as American Wonder would ripen about three weeks later. It is a very large, delicious and productive pea. Fifth, that grand old pea, Champion of England. If it were not for its rank growth and its sometimes being liable to mildew, in very hot weather, it would have no superior in its season. It ripens about the same time as Hayes' Dwarf Mammoth. On good rich soil and sticks, it generally bears good crops.

MR. SAUNDERS.—I would like to say a word in praise of this pea of Mr Arnold's. He was kind enough two years ago to give me a little of the seed, and I think it the most delicious pea I ever ate. Unfortunately, the pea bugs were so abundant that we ate them with the peas at first, I suppose, and they afterwards ate all the seed we had left.

MR. JARVIS.—With regard to the difference between dwarfs and standard peas, during my short experience of thirty years' gardening and planting, I have never had any success with dwarf peas ; there has always come a storm which beat them down and destroyed them. I have given up the dwarf pea altogether. I have not heard of Mr. Arnold's hybrid before. I have always gone in for Daniel O'Rourke, Bryce's Little Conqueror, the Gem, and the Champion of England. I find if you give the Champion of England plenty of room and good long stakes you have a good crop every year. The Little Gem I have always staked the same as I have done with the little Dwarfs, and I have had, I think, the finest crop of peas of anybody in our little village. I attribute that altogether to the fact of staking them and keeping them up off the ground.

MR. CROIL.—We are troubled with the blackbirds. I used to sow a good many Dwarf peas, but the year before last they did not live, so this last summer I did not sow any till quite late, and the blackbirds left us and we had a good crop.

MR. BEALL.—I was favoured two or three years ago, through the kindness of Mr. Arnold, with a few of these peas he speaks of. They did not stool out but very little with me. They only grew about a foot high, and stood perfectly upright without stakes till they were fully grown. They are a delicious pea ; and they are earlier than any pea I have seen. If you want to save them for seed you can do it without any trouble, because they all ripen at once.

GENERAL DISCUSSION.

It was here agreed that a certain time should be devoted to general discussion.

MR. ORR.—There is a prospect of peaches failing with us ; the yellows are spreading rapidly in almost every orchard ; and we are cultivating grapes more in that neighbourhood. I propose setting out half an acre of strawberries in the spring, and I want some information as to the best varieties to set out.

MR. BEADLE.—I know but one strawberry that is worth growing for market, and that is the Wilson. I have tried a great many varieties, and I know of none better. I have not tried the new varieties long enough to speak about them confidently. They may be all that those who champion them think they are, and it may possibly be that they are going to drive the Wilson and every other strawberry out of sight. I remember a great many years ago, when the Wilson was brought into notice, nobody said a great deal about it ; if anything was said about it, it was generally run down at fruit-growers' meetings—it was too sour ; it was too dark coloured ; it was too this and too that. But everybody planted the Wilson ; and if you will look over the Fruit-Growers' reports, or rather the American Pomological Association's reports, and take the Wilson's history, and follow it down from year to year, you will see that it has gone from New York State to every State in the Union. It is planted by everybody for market ; and anybody who has made any money out of strawberries says he has made it out of the Wilson. It is not my business to plant strawberries for market ; I plant them to see what kind of berries they are, and to eat them. I form an opinion after hearing what others say, and after seeing the berries myself, and I have just come to the conclusion that, after all that is said and done, we cannot say that there is a strawberry yet cultivated for our markets that will pay any more money back to the raiser than the Wilson. I am told that in the neighbourhood of New York and Philadelphia they get a higher price for other strawberries. I suppose they do ; but the question is, do they get enough berries to make them any more valuable to them, after all, than the Wilson ? That I very much doubt. I would plant some of these other new varieties—a few of them—and watch them, and see whether there was any probability of my doing any better ; I do not expect that I would, though. As to the quality of the Wilson, or the quality of any of these strawberries, that is a mere matter of taste, because to like one berry more than another does not alter its commercial value. The great thing is, what will the public buy ? The Wilsons sell, and they sell at a sufficient price, I suppose, to pay the raisers, or else they would not grow them.

THE PRESIDENT.—We have grown the Wilson almost to the exclusion of everything else for marketing, and I can fully endorse the sentiments expressed by our Secretary with respect to it. The berry that comes the nighest to the Wilson is, I think, Crescent Seedling. In the basket I think it looks superior to the Wilson, on account of its being so uniform in size and shape ; and in flavour it is fully equal to the Wilson. The berry is a little softer than the Wilson. I do not know what effect that may have on it in other years ; but this year it shipped very nicely to Montreal, and arrived in very good order. We shipped it at the same time with the Wilson ; they were picked the same time too ; and they commanded the same price in the Montreal market. But this berry may turn out something like the Colonel Cheeny. A few years ago almost everybody was planting the Colonel Cheeny in our part of the country. I had not gone very far into the cultivation of the Colonel Cheeny. I had a little suspicion of it on account of its being a little soft. Some of my neighbours had excluded the Wilson, with the exception of a row or two, in favour of the Colonel Cheeny. There came on a rain storm sometimes near market time, and the berries, when picked, would perish during the night. I could cite you two or three instances of that kind. Parties have picked their stock of berries in the forenoon, and before they could dispose of them in the afternoon they were rotten on their hands. How far this soft peculiarity will extend I don't know ; but certainly from one year's experience of the Crescent I think very favourably of it. We robbed it of plants in the spring to extend it. We did not clip any runners as it was growing, but in the spring took up all the runners we could spare, and consequently they

were not mulched, while the Wilsons growing just by the side of them were all mulched. This Captain Jack—spoken of, I think, in Mr. Morris's report—is a very fine berry, though when I thought it was going to produce three or four times as much as the Crescent Seedling, there were only about one-fourth of the berries that matured; they fall more or less immediately after they form. Nevertheless, it carried a crop of very fine fruit. There are some of Arnold's Seedlings that certainly are very fine and promising; but on account of not having a sufficient amount of skilled labour we lost the labels off them, and got the plants mixed up, so that I could not tell one variety from another. Some of them, however, were superior to anything I had on my premises. I have that Raspberry which has been called treacherous; it does not succeed with me.

MR. ARNOLD.—I do not feel as free to speak on the strawberry as I do to speak on the pea. All I have to say is, that those of mine are seedlings selected from several thousand seedlings; and if I did not consider them good I would not offer them for sale. The very finest strawberries would never be good market berries; only such coarse ones as the Wilson would be good market berries. The Alpha, which is the earliest I have grown, will be the best market berry, and there will be more money in it for those growing for market than any other, because of its earliness. There is one berry which Downing suggests I should call Arnold's pride. It is a very fine berry, much earlier than any of the rest of them. In fact, I believe the four are good; but they will have to be tested before their good or bad qualities can be spoken of.

MR. WOODWARD.—We only grow strawberries in a limited way around Lockport. They are mostly grown for Lockport and Buffalo markets; and the great market strawberry there is the Wilson. I do not grow them on my own place for domestic use; but I know about what are being raised by the growers, and I think the Cumberland Triumph is a very good market berry. I think it pays better than the Wilson. I have heard one or two growers there speaking quite highly of Miner's Prolific. I see that in New Jersey that berry, although not new, is coming into favour. Almost every strawberry grower I heard talking about the matter spoke very highly of Miner's Prolific; they seemed to think it was a very fine market berry, and that it bears as good a crop as the Wilson, or rather larger; that the berries are better, and the quality better. I find that in 99 cases in 100, people after trying new berries come back to the Wilson.

MR. BEALL.—When I speak of strawberries, I have to speak of those that I am intimately acquainted with at home, and my impression is, that there is nothing so good, taking it altogether, as the Wilson's Albany. I think that not only because it is, in my opinion, excellent in flavour, but because of its great productiveness and its unusually excellent appearance in the market. I do not like to say much about it, because we have no means of comparing it with others here before a large number of fruit men, otherwise I would exhibit some from Lindsay. At Lindsay there is often a large quantity brought in from Oakville; but our Lindsay fruit will always sell for fifty per cent. more than it. Our soil there will produce an enormous crop of the most excellent sample; and I am told that as far back as Haliburton, 70 miles north, they can beat us altogether.

MR. WOODWARD.—A year ago this last June I was at Cleveland at the time of the Fruit-Growers' Convention up there, and I found that the Triumph de Gand and the Cumberland Triumph had entirely supplanted the Wilson in that locality. What few Wilsons were coming into the market were selling at from three to four cents a quart, while the other varieties were selling at from seven to nine cents a quart. They were buying berries in large quantities to ship away; and the Wilsons were a drug in the street.

MR. ORR.—The mountain is on the rear of our place, and consequently we have a great many birds. The robins are very destructive. They destroyed nearly all my crop of Delaware grapes—not that they took all the berries, but they spoiled every bunch. We might shoot at the robins, but they would just fly from one post to another and escape us. I want to know if any of the other fruit-growers kill the robins in the spring?

MR. SAUNDERS.—It is contrary to law.

MR. ORR.—Perhaps a greater difficulty is owing to the honey bee. They destroyed a very great deal of my grapes, particularly the Concord. That matter has been brought in question over in the States. There have been lawsuits over it there; and I understand

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the plaintiffs have been successful in getting damages. My neighbours on one side have about seven swarms of bees, and my neighbours on the other side have sixty or seventy swarms. They injure the peaches very badly also. This difficulty is very hard to overcome; but the birds, I think, we ought to be able to do something with.

MR. SAUNDERS.—The subject of the robin has been brought very prominently before the Commissioner of Agriculture in connection with the sittings of the Agricultural Commission, and the evidence has been almost invariably against the protection of the robin—that is, that he ought to be left to his fate. It seems to me that the law ought to be modified so as to leave it open to parties who are invaded by a host of depredators of that sort, to inflict summary punishment on them if they think it is necessary in their interests. I think if this Association were to give an opinion in that direction, it would have some weight in getting the law modified, so as to leave the matter in regard to the killing of the robin, and perhaps the cherry bird and some other birds, an open question, so as to take the protecting arm of the law away from them, and give the fruit-grower a chance of defending his own interest without being liable to be hauled up and fined for it.

MR. JARVIS.—A difficulty presents itself there again—that is, with regard to Sundays. Last year a friend of mine had a tree loaded with those magnificent English cherries, and I came down very early on Sunday morning to get some of them. I got there about seven o'clock, and the birds had come in about four, and had actually stripped that tree. Underneath the tree it looked as if they had been a week at it, and every cherry was gone. The birds were robins.

MR. HASKINS.—I have lately read in an American periodical, that over there, at a place where they raise a great many grapes, they have been obliged to cover the bunches with paper bags; it seems to be quite an undertaking to do that; but it seems at the same time to be the only way to save your grapes from the robins.

MR. SAUNDERS.—I have read something about that too. It is said that the grapes loose nothing in flavour.

MR. HASKINS.—There is a hole made in the bottom of the bags so that the rain will go through. We have suffered greatly from robins; we have lost tons of grapes.

MR. WOODWARD.—When I was a little fellow I learned about the robins covering up the babes in the wood, and I have always had sympathy with them since. We, too, have a law that protects the birds; but when they come in flocks we just become a law to ourselves. I do not like to report bad stories about the Yankees; but I guess some of them shoot birds on Sundays. I have been not less than a thousand robins—and I guess you could multiply that easily by ten—on a vineyard of five acres; and then the robin is not half as bad as some other birds. The Baltimore Oriole is worse than any of them; and I tell you there is no other way but to fight them. A gentleman next to my place shot away last summer at least half a ton of No. 5 shot at them. He said that on one Sunday the birds destroyed more than two tons of grapes for him. In one gentleman's vineyard over there two men were employed continuously shooting birds. Mr. Thomas, whom you all know, said he said a good deal on behalf of birds, but if the fruit-growers would forgive him he would take back all he had said in their favour, and now say "shoot all you can." In regard to birds, it is a good deal the same in the vineyards as it is in the strawberry plantations. If you have half an acre of vineyard you will have birds enough to look after, and if you have 100 acres of vineyard you will have enough birds to look after it. The oriole won't take a grape and be gone with it as the robin will, but it will stick its little bill in the grape, and that is all it wants of it. I have watched bees very closely, and I doubt whether they will first attack a grape. I know that if the grape is punctured they are very glad to be on hand and take the juice: and that is fully as good as to let it stay there after it is punctured. From its structure I doubt very much whether the bee has anything—at one end of it, at any rate, with which it can puncture a grape—at the other end, I know from experience, it has.

MR. BEADLE.—I have been told that our American bees cannot puncture a grape, but that the Italian bees can.

MR. DEMPSEY.—There are some bees that I do not know very much about—the Holy Land bees. I do not know what they may do, but I am sorry to believe that bees puncture grapes. If they do I have yet to see it, and I have watched them very closely

too. I am not willing to assert, however, that they will not do it; it is possible that they may. I have seen varieties of grapes that crack easily, and I have seen bees working on them. I have also seen birds—that is, orioles and cherry birds—puncturing them. I have watched them very closely, and I have noticed that they will poke their beak in and then open out their mouth when it is in the grape, and thus make a hole as big as the skin of the grape will allow. In doing this they suck out some of the juice from the inside, and afterwards I have seen the bees sucking at it. These birds will also go at the pear, and I have even seen them working in apples. I am not willing to admit that our bees, and I think I can speak from good grounds, do any damage to our fruits. My garden where I live is not very large—there are fifty or a hundred grape vines growing in it—and there are usually several colonies of bees in it; and if they were inclined to destroy the grapes I should certainly expect to get a very small share of them. But as to the birds, I found this last year that there was only one way to save our grapes from their ravages, and that was to send a boy in to shoot them. I do not know that I shot any of them myself, but I furnished the ammunition.

MR. BEADLE.—I think perhaps an expression of opinion from this Association with regard to this matter of protecting these birds by law might be well. It is an unpleasant thing for a man, when he has made up his mind that he must in self-defence take the gun and go in and shoot the birds, to feel that he is liable to be brought up before a Magistrate and fined because he is breaking the law of the land. I suggest that we express our opinion in the matter; and it may be well to follow it up by appointing a committee to call the attention of the Legislature to the subject. I move "That, in the opinion of this Association, it is desirable that the law protecting birds be so modified as to permit fruit growers to shoot such birds as the robin and cherry bird when their grapes are invaded by them."

The motion was seconded by Mr. Orr and carried.

MR. PETTIT.—I have suffered very much from the birds, and I find that sending small boys up and down among the rows of grapes clapping the bottoms of baskets together, drives them away about as well as if they were shot. If you attempted to shoot them you could only kill a few birds.

MR. HASKINS was requested to address the meeting on the grape vine leaf gall. He said: I have had only very little experience of it. I have only seen it on the Clinton grape. I remarked that in our vineyard it commenced on the east side of the field and went out on the west side. We did not have it last year at all. I do not know whether it is the same insect they complain of in France or not.

MR. SAUNDERS.—The gall is one form of the phylloxera. There are two forms, one of which attacks the leaf, and one the root. There has been no proof, I think, forthcoming that the insects which we have on the leaves in this country have ever attacked the roots. I had it myself last year on the leaves of nearly all my thin-growing grape foliage, but this year I haven't it at all. I have seen it on other grapes, but the thin-leaved ones are the only ones that suffered much from it.

MR. HASKINS.—We have perhaps over twenty varieties in our vineyard.

MR. PETTIT.—It made its appearance first with me last year on the Clintons, and also on the Delawares and on the Concords. They were quite thick on the Clintons.

MR. ORR.—I had them on the Concord, on the Delaware, and on wild grapes that I was growing on the mountain, quite bad.

MR. SAUNDERS.—I have not examined the roots to see whether it has attacked them. It is my practice to leave the roots of plants alone which are doing well. I have seen no indications that those that have suffered in the leaf are now suffering at the roots at all.

MR. JARVIS.—I have seen one of these dark grubs biting my leaves through, and if I had not picked it off it would have destroyed the vine. It is different from the grub you see on the honeysuckle. There is a long green grub that feeds on that. This is different; its head seems to stand up in ridges. It is prettily marked, and it grows to be quite a size.

MR. SAUNDERS.—I think it is what we call the green grape-vine sphinx. It never comes in great numbers. If you cut into this green leaf gall you will find it more or less full of these small lice, young and old together. As far as practicable the affected leaves

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should be picked off and destroyed ; but I suppose that would be entirely impossible where the vines were so badly affected as Mr. Pettit says his were.

The meeting adjourned at half-past five to seven o'clock.

Upon re-assembling,

MR. BEADLE said : Mr. President, How do you succeed with raspberries in Prince Edward ?

The PRESIDENT.—Raspberries succeed well in Prince Edward County. They do not winter-kill much.

MR. BEADLE.—What varieties are hardy enough ?

The PRESIDENT.—The Philadelphia for one. There is nothing that has given so much satisfaction with us as the Herstine. Not a particle of that has winter-killed, and that is not because it is covered with snow. You know the size that our Herstines grow, and they brought nice prices this year. We continued to pick Herstines for fully six weeks this last season. We had not an acre of them, but they averaged more quarts per acre than the Philadelphia. The Philadelphia is too soft to keep over night to take to market. The Clark is also too soft a berry.

MR. BEADLE.—The Philadelphia has a peculiar bloom on it which makes it appear mildewy a little, which is a serious objection to it. That is the difficulty with all the hybrids of the red berry with the black of Mr. Saunders'. His hybrid caps are filled with pulp very pleasant to eat ; but put them on a plate and offer them to a person who is not acquainted with them, and he will say, "What is the matter with those berries ? They are dirty, dingy, mildewy looking."

The PRESIDENT.—Saunders' black caps make good jam. They are very fine. They only sell middling in our market.

MR. BEADLE.—That is the way it is in our market. Five cents will be about the average you can get for the black caps, and you will get easily eight, nine and ten for the others.

The PRESIDENT.—Black caps would bring on an average six or seven cents with us this year, and the Herstines would go from twelve to twelve and a-half and thirteen. We had always more orders for them than we could fill. The Herstine is a red berry.

MR. BEADLE.—Have you tried the Franconia ?

The PRESIDENT.—Yes, at home. I have not tried it where I am now ; it winter-killed when I tried it. I cannot grow a Baldwin apple at home yet, though it grows very nicely on this place. Brinckle's Orange stands our climate first-rate, and the Yellow Antwerp too.

MR. BEADLE.—They wont stand in our climate.

The PRESIDENT.—I have had them four years, and I have not seen one inch of them frozen. There were some fruit-growers who came and saw the Herstines when they were fruiting this summer, and every one of them wanted a certain stock of plants, so that I had to limit them.

MR. BEADLE.—I saw the Gregg, the new Black Cap, fruiting at Morris' and at Lockport this summer. It is a little larger than the Mammoth Cluster, and it has a more meaty texture or feeling in your mouth. It is more like eating a piece of fruit. The seeds are less perceptible in your mouth. I fancy the seeds are either small or else their proportion to the pulp is decidedly less. They are later than the Mammoth Cluster. I value the Thornless, the Mammoth Cluster, and the Gregg, making a succession.

The PRESIDENT.—The Thornless does not give us good satisfaction, but four or five miles from us some growers would not plant anything else.

MR. BEADLE.—Do you account for that by variation in soil ?

The PRESIDENT.—Variation in soil and elevation of it. I furnished a lot of Herstines to be planted in another section only two miles away, but in a more frosty region. There is something in this that I cannot account for. It has often been the case that within two miles of us—in fact, one mile—I have known tomatoes to be killed three or four weeks before ours were hurt. Then, again, in the spring I have known parties to set out tomato plants a third time on account of frost within a mile or two of where I am growing fruit.

MR. BEADLE.—Have you tried the Clarke raspberry ?

The PRESIDENT.—Yes. That won't compare with the Herstine there at all. It is hardy enough.

MR. BEADLE.—The Clarke is Mr. Smith's favourite, you know. He calls it his best paying berry.

MR. ORR.—I am only a beginner in fruit-growing, and my experience is very slight. It is only within the last four years that I have made any move in that direction at all. My idea in going into it was that I would grow peaches altogether in order to make money out of them. At that time I had no idea there was such a thing as the yellows. I had it in contemplation to set out ten or twelve acres of peaches on a northern slope between the mountain and the lake, a location which I considered a very good one. I joined this Association, and the subject of the yellows was discussed here, and very much discouraged me; and instead of setting trees out by the thousand, I set only about 400 that year. The next year matters were worse, and I set out only about 100; and I have continued at that rate. Now I am completely discouraged. There were a number of orchards in our locality which were not affected until this last year. The yellows have not appeared in my orchard that I am aware of, and there are some old trees there; but I do not know of an orchard around but has them. In a number of orchards they made their appearance about August last for the first time. Some of my trees I set on sand, and some on very heavy red clay; but those who have experience in growing on the clay tell me they will be much longer-lived there. They also tell me that the quality of the fruit which is grown on the sand is the better. I have planted a great many varieties, principally, however, Early Crawford, Late Crawford, Barnard, Stump-the-World and Lemon Cling. I have High's Early. That is what was called the Early Canada. It is a splendid peach, and doing splendidly. The trees have been out two years. The second year I got twenty-four fine peaches off it. I have some Alexanders—at least I bought them for that, but I think they are not true to name. They did not mature until a week after those were ripe. A number of my neighbours had Alexanders in a few days before our early peaches. Pettit's July is early, but is not so early as High's Early, and not so fine a peach. High's Early is not altogether a free-stone, but very nearly so; it is not strictly a cling-stone.

MR. BEADLE.—I have got the impression that High's Early, or Early Canada, clings less than either the Alexander or Amsden's June.

MR. ORR.—I have set out some of the Early Rivers, but not fruited them. My Stump-the-World fruited, and I found the peach a splendid one. It sells splendidly. I think for canning it is about the prettiest fruit I ever saw put up. It is beautifully pure and clear.

MR. BEADLE.—The Salway is a late variety. Some little time ago I was talking to Mr. Gray, who lives near Lewiston. He had planted a large number of Salways, and fruited them for three or four years, and he said they paid him more money than any other peach he had. The reason of that is that they come in very late, when all the other peaches are out of the market, so that he has a monopoly of the peach market at that time. A year ago this last October we had an unusually late October, and our late fruits ripened up unusually well. Mr. Gray said he was a little afraid that, if we should have such seasons as we had a few years ago, the Salway would not ripen, yet he would like to plant a few of it. I think this fruit will ripen once in four or five years on the average with us, and that it will not be so profitable in the long run as it has been in the last two or three years. It is a free-stone. The Salway will come in after the Stump-the-World. It is a very late peach.

MR. ORR.—The Stump-the-World is very late with us, and so is the Lemon Cling. The Lemon Cling comes about the same time as the Stump.

MR. BEADLE.—Then perhaps the Salway is no later than the Stump. My impression was that it was later.

MR. WOODWARD.—It is nearly two weeks later. They very seldom ripen in Western New York. I had the pleasure of being at a gentleman's house last December—about the 11th or 12th—and for dessert at dinner we had some Salways in good order, and they tasted quite like summer. He told me that when he picked them he put them in peach

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baskets and put them in his cellar, and every day or two he would go into his cellar and pick out those that were getting mellow and take them up to eat.

MR. BEADLE.—Would you plant the Salway largely at Lockport?

MR. WOODWARD.—No, sir; I think the risk would be too great.

MR. ORR.—I am told that the Stump-the-World and the Lemon Cling will not mature some seasons.

MR. BEADLE.—I know the Lemon Cling will not mature some years with me. I want to enquire of Mr. Orr about the pruning. Do you or your neighbours practise shortening in your peach trees to any extent?

MR. ORR.—I must remind you that my experience is very limited. I have done so with some of my trees—those that grow on the sand. Those that grow on the clay I have not found it necessary to do it to. Some of my neighbours do so too, and they consider it a decided advantage. If that is not done the trees are likely to be too heavily loaded. By heading them in they get a better sample, and they consider it better for the trees.

MR. BEADLE.—I was talking with Mr. Watt, of Niagara, and he tells me that he shortens in very severely. He says he would rather have a peck of good peaches than a bushel of poor ones, and he thinks that it is easier to shorten in than it is to thin out the peaches, and that there is a decided advantage in keeping the head of the tree more compact by shortening in. If I understood him rightly he does not confine the shortening in entirely to the cutting off of the last year's growth, but if he thinks the branch is getting too long, so that the weight of the fruit will bend it down, he goes back into the two years' old growth, and then he does not trouble himself so much about the smaller twigs in the last summer's growth. He thinks that the result of it is that his trees are much more healthy, and he almost believes he is going to keep clear of the yellows through his system of cultivation, keeping them in good heart and not allowing them to overbear. One thing he says he is perfectly satisfied of, and that is, that he gets a much better quality of fruit, and that he receives enough more for the baskets of fruit he gets, to more than compensate him for the difference there is in the number of baskets.

MR. ORR.—In forming the head so compactly, is there not a danger of there being a lessening in the colour on the fruit in consequence?

MR. BEADLE.—There may be an extreme to which a person can go in that direction.

MR. ORR.—Then, in cutting back the two-year-old limbs, where would he cut?

MR. BEADLE.—I think, from what he said, that he usually tried to cut off at the fork, and leave more the appearance of a limb taken off.

MR. HASKINS.—I would approve of cutting back for one reason, and that would be that the tree would not be so likely to break down afterwards. If you grow fruit on a limb that is a long way from the trunk, the weight will be very likely to break that branch off in the centre where it comes out from the tree.

MR. McNABB.—I want to ask Mr. Beadle if he ever sowed wood ashes around the trees?

MR. BEADLE.—I have not sowed wood ashes as a special fertilizer for the peach. I would put the ashes around the peach trees to keep the little peach-borer out. But I am satisfied on general grounds that wood ashes make an excellent fertilizer for almost all fruit trees—I think I might almost say all fruit trees. I find wood ashes make an excellent fertilizer for young trees in the nursery as well as in the orchard.

MR. JOHNSTON.—I grow a few trees, and I manure them with wood ashes.

MR. JARVIS.—I tried peaches last year and the year before with very good result. They did not winter-kill at all. There is a neighbour of mine there whose trees were in a year before mine, and he had a splendid crop. He had Amsden's Junes as big as your fist, and I had some good peaches on my trees too. If the trees are not completely killed this year from the tremendous frost and cold we have had, I shall be very much astonished. There is another tree that I have planted there and been successful with—that is the English Mulberry. I suppose about Hamilton here it would do very well. Up about Chatham they grow very well. My tree this year bore very nicely—fine large, black mulberries.

MR. BEADLE.—I have two trees. They have been bearing for some years, and I never could get any fruit off them; the birds ate it.

MR. JARVIS.—The birds did not eat off my trees ; I do not know what is the reason. The berries are very slightly acid. They are between a black raspberry and a cranberry in that respect. They have a cranberry flavour. This particular kind, the English Black, I think very nice-flavoured.

MR. BEADLE.—Mine is the Downing The flavour is very much like that of the English Black.

MR. JARVIS.—I have a seedling peach which was only in a year ago last spring. I found it growing in a neighbour's garden, and took it up very early, and last year it blossomed and fruited, and I took off just a peach-basket full this fall of very nice peaches—something like the Lemon Cling, only smaller. We put them all down in glass jars, and we are using them now, and they are very nice indeed.

MR. BEADLE.—Mr. Jarvis' remarks about the seedling peach have started again a train of thought that my mind has been prone to run in lately, and it is this, that people generally can extend the region of the peach very much by growing seedling trees from seed ripened as far north as we can get it. When certain peach trees ripen their peaches take and plant the seeds from those and raise seedling trees, and when they fruit preserve the best of them, and when they ripen plant the seeds from them in turn. This I say as the result of some observations that I have made at home on tender trees which my father imported. When he succeeded, with a great deal of care, in making them live until they fruited, I planted some of the seeds of those trees, and succeeded in getting a race of trees from them that I do not think suffer in our climate at all. The young trees came right along without any protection. These observations I have made on more than one variety of tree ; and I believe there is something in this idea. When I was a lad, my father brought home one day a lot of seedling peach trees that he had pulled up in some farmer's peach patch. This might have been in 1830. Amongst these trees was one variety of yellow-fleshed peach that was of very fine quality indeed, and we all liked it. I have a tree of that variety to-day in my grounds. After my father planted these trees there came a winter which killed the peach blossoms so badly that there were very few that year, and consequently very few peaches ; but this seedling variety blossomed and bore fruit—not so fully as in other years, but more fruit than any other variety. In fact, if I remember right, it was the only peach that bore that year. So if I were obliged to live in Stratford I would try and raise a class of peaches in that way, and see if I could not get a variety that would bear in that climate. I received from a gentleman at Collingwood a seedling peach that was very fine-looking indeed, and a peach of good quality. I would hardly call it "very" good ; I presume he would unless he is familiar with a large number of varieties of peaches such as we grow here. It had the taste of a late ripening seedling peach, but it was far better than the average of sour seedling peaches that we have here. When I say it had the taste of these seedling peaches I mean it was more acid than our ordinary class of peaches, such as the Crawfords and those we market ; but it was a good flavoured peach, and the size and appearance of it were very good. You could peel all the skin off the peach with your finger if you like, just as you could peel it off a boiled potato. That is a characteristic of many of our seedling peaches here, especially of those that ripen a little late. I believe that he has got a more hardy peach than our Early Crawfords, or Late Crawfords, or any of that class of peaches that we have here—a peach of good quality, but which possibly may be improved on by keeping on in that direction. I think this may be a starting point for a northern race of peaches. We know that our Iowa friends are importing from Northern China peaches and pears that they believe are going to be hardy enough to stand their prairie climate. Now, how is it that Northern China has peaches and pears so much hardier than ours ? I believe they have raised seedling after seedling there until they have got a race that has become acclimatized. I should like, if any gentlemen are disposed to make experiments in that direction, that they would do so and note the result.

MR. HASKINS.—Have you ever known the peach to be grafted as apple trees are, on small roots ?

MR. BEADLE.—No ; but I do not know why it should not be done.

MR. HASKINS.—Have you ever known grape vines to be propagated in that way ?

MR. BEADLE.—Yes ; that is one of the ways they propagated the Delaware for a while.

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MR. HASKINS.—If you take up an old vine and cut up the roots into little bits, and if you have any new variety of grapes that you wish to propagate, just graft them in that way, and you will not lose one in a hundred.

MR. A. M. SMITH.—Some three or four years ago I had a gentleman staying with me who had spent some fifteen years at Tien Tsin, and I asked him a good deal about the fruits and the temperature, and it occurred to me that something could be done in the way of introducing the fruit of China here. I entered into a correspondence with a merchant there, sent him a supply of things, and was to get a supply of other things back; but I never got them. I learned from this gentleman that they had a small white grape there and two coloured varieties. He said they grew a variety of the date-palm there successfully in the same climate, and the dates they used as preserves. It occurred to me that if they could, by a process of acclimatization, get a date-palm to grow—and he said the thermometer sometimes went three and four degrees below zero there—it would be desirable for us to get those varieties of grape too.

MR. WOODWARD.—Last June I had the pleasure of a long conversation with Mr. Budd in regard to the importation of those fruit trees from those countries, and he thinks the grape vines of China and Japan, or at least some of them, are of the Labruska type, something that is entirely different to the suppositions of any of the scientific men. He said, so far as he had been able to inform himself, there was but one variety of grape there that it was worth introducing into Iowa, and he thought he would have some of them sent over. He said most of the grapes there were inferior to ours—they were small, and he did not think they would please.

MR. JARVIS.—Don't you think they have these plants from China now at Washington?

MR. WOODWARD.—Some varieties of them they have.

MR. JARVIS.—There is no doubt the Chinese are far ahead of us in horticulture. You will find there in the streets of Canton maples, oaks, and all those trees grown as dwarfs in little pots. They grow them there on little boats.

MR. A. M. SMITH.—I think all the efforts that have been made hitherto in the direction of introducing new varieties from China have been in the way mostly of bringing them from the southern portion of China, and that for the reason that the botanists have been able to obtain greater numbers of varieties there for the persons they were working for. I do not think much has been done yet toward ascertaining what kinds of fruits Northern China has that could be cultivated in our climes. I do not think they have anything of the sort in Washington; they had not two years ago when I was there.

YELLOW S IN THE PEACH.

MR. PETTIT.—Four years ago there were some of my trees that showed some signs of the yellows. Two years ago, at fruiting time, there were about thirty of them, and I destroyed those. This year, at fruiting time, there were about two hundred, and in an orchard of about fifteen hundred I do not think there will be over two hundred sound trees left this year. We were told at first that it could be spread with the pruning knife. Early in May I took a tree that had the disease, removed a branch from it, and shaved the bark off it. I then took a healthy tree, shaved the bark off it, and rubbed the branch from the other tree and it together. I then marked this healthy tree, and I found the fruit on it this year was perfectly healthy. I also took a diseased branch while blossoming to a healthy tree and rubbed it on it, and the fruit of that tree was perfectly healthy too. I would put the Smock tree first for profit. I have made more money from Smock peaches than of any kind I grow, and I grow ten or twelve of the leading varieties on the same kind of soil as it. If I were planting again I would not run entirely into Early Crawford. I put out ten acres last spring, and put over one-third Smocks, and not a third Crawfords; and the proportion has generally been about two-thirds Crawfords. The Smock comes in some time after the Crawford; it is after the Late Crawford and after the Lemon Cling; it is the last peach except the Salway; it has always ripened up well with me, and has been a heavy bearer. It is a good high-growing tree. Three years ago the Smocks brought me 75 cents a basket more than the Crawfords. My orchard

is a little later than the Grimsby orchards in ripening, and when the Grimsby Smocks are gone mine are in prime, and I realize from 25 to 30 cents a basket more for them sometimes than they do. The Lemon Cling is later than the Salway. The Salway is not as good as the Late Crawford in quality, and not as good as the Smock quite, I think. There is very little difference between it and the Smock; it comes in a little later. We have had suits in courts of law about the Lemon Clings, on account of the Grimsby nurseries sending them out for Crawfords. That peach has been more profitable with me than the Crawfords, and has sold higher than they. The glut is over when it comes in, and it bears a very heavy crop.

MR. ORR.—In view of the yellows, would you still set out trees?

MR. PETTIT.—No, I would not; I would set grapes.

MR. WOODWARD.—If I should give you any advice about the peach, I should be sure and advise you to do something I have not done. I am sorry to say that the yellows in the peach are a great deal worse difficulty than the robins in the grape, and the more I study it and investigate it and look after it, the less I know about it. We are pretty well satisfied that peach raising has got through paying with us for the present. In an orchard in which I had 3,500 trees, as fine as a man could wish to see, I do not suppose that to-day I have anywhere near 200 that are healthy; and I am going to take them out clean next spring, with the exception of a few trees of some chance variety which so far have proved to be healthy. I do not know what that variety is. They are later than the Crawford by nearly a week perhaps. They begin to ripen about the time that the Crawford gets beyond its time. They are a little larger than the Crawford—more round, not quite so likely to be irregular—a little darker colour, a little richer peach, and a much more healthy-looking tree. We used to shorten in our trees and thin out. I had as fine an orchard as I ever saw, and took a great deal of pleasure in it. The first year the yellows attacked it, I had two or three trees affected. I did not call it the yellows; I supposed it was the effect of the hard winter. The next year I lost two or three hundred, and then I went and applied all the nostrums the books told about, and last spring, up till about the 1st of July, I thought I had got the start of the yellows—I never saw healthier-looking trees. I have heard people say that the disease was owing to the trees not being properly nourished. Well, my trees, planted five years ago last spring, some of them 18 inches in diameter, had been cut out and thinned out; and my idea of thinning out trees is to keep up about 15 inches of new growth each year. That is a great deal easier than to thin the fruit; but then of course I thin the fruit also. I had a very fine orchard, and I have seen a tree healthy with the exception that one peach on it was diseased, and the next year it would be gone. Another would have one limb only affected. Another tree would struggle along before the disease would spread. If we had not the yellows in our vicinity, and if I were going to plant a new orchard, knowing what I do now of peach growing, I would astonish the natives; I would plant it entirely with white varieties, and I would plant it entirely for drying. The white peaches are worth for drying at least 15 or 20 cents a bushel more than other peaches; they come out as white as paper. A man who dried white peaches sold them for, I think he said, 42 cents a pound, while yellow peaches were worth only 27 or 28 cents.

SUMMER MEETING.

The Summer Meeting of the Fruit Growers' Association of Ontario was held in the Town Hall, at Owen Sound, on Wednesday, the 24th day of August, 1881. The meeting was well attended. Owing to the severe frost which visited the place early in summer, the display of fruit was not so good as in former seasons, but much better than was expected.

PRESIDENT DEMPSEY having called the meeting to order, drew attention to the first subject on the programme for discussion, viz.: "To what Diseases and Insects are Plum Trees here liable?"

In answer to this question it was found that the depredations from insects were not

serious. The most destructive of these pests are tent caterpillars, but they are not so numerous but that they can be easily destroyed.

MR. R. TROTTER found that black-knot destroyed many trees, but might be got rid of by washing with copperas after the diseased part had been cut away.

MR. WM. BROWN said if black-knot were cut off twice a year and burned it would be found no serious trouble, and a good preventive of the spread of the disease.

MR. D. R. DOBIE said he had noticed a small puncture in the plum, and a dark brown track through the flesh of the plum, as if made by an insect.

MR. HILL thought black-knot was a very serious disease, and needed to be promptly amputated.

MR. T. ROBINSON said he found gum accumulated on the end of the plum, but had not found the insect he supposed to be the cause of it. He wondered whether black-knot affected all kinds of plums.

DR. CAMERON said the first symptoms of the disease appeared by the cracking of the bark, which gradually came away from the trunk and fell off; then the trunk itself began to rot, and finally died.

PRESIDENT DEMPSEY said curculio begins to sting the fruit immediately it is formed, causing it to drop.

MR. JOHN CHISHOLM said the number of insects was not sufficient as yet to be serious, but black-knot had shown itself to be more serious than any previous year, and he calculated to cut them sufficiently to remedy the evil, the shortest plan was to dig them entirely up.

MR. GIFFORD said he found that this year black-knot had affected the trees more than any previous year, and considered that cutting was insufficient to overcome the emergency—nothing less than the cutting down of whole trees would answer. So far he found it was chiefly confined to blue plums.

MR. R. J. DOYLE.—Many of the trees are propagated by suckers, and if a tree shows black-knot, suckers have no business to be taken from them, as it is sure to show itself on them also. He found black-knot had affected his wild cherries, and most trees that stood in wet soil. Under-draining and cutting off he found a simple remedy, if dealt them at an early stage.

MR. D. R. DOBIE said that black-knot was very bad among his trees this year, especially on Jefferson and McLaughlin trees.

MR. BROWN.—Black-knot was worse thirteen years ago in my garden than now. Then I cut away all the affected parts, and so in a great measure got rid of it, but this year it has shown itself worse than usual, yet I think amputation will keep it down.

MR. GIFFORD said he thought the hard winter weakened the pear trees and increased the blight, and in all probability had a great deal to do with the increase in black-knot this year.

MR. HILL said that plums worked on wild plums were less subject to black-knot; and he found suckers very subject to the disease.

MR. JOHN CHISHOLM said he had brought a sprout from Grimsby, and that for twelve years it never showed signs of black-knot. In Manitoulin Island the wild plums were entirely covered with it.

MR. W. A. STEVENS said he found that black-knot showed itself more this year than usual, especially with sprouts, and found amputation a simple and only remedy.

JUDGE MACPHERSON.—Some years ago I noticed signs of this troublesome disease on a tree, and had it cut out without damaging the tree to any considerable extent. Black-knot appeared on the beech, but in a different form to that on the plum.

MR. BUCKE.—In Ottawa neither curculio nor black-knot had shown themselves; where it did, he knew coal-tar spread over the wound after cutting would keep it down.

DR. CAMERON.—The cause of black-knot is altogether unknown. Many orchards have to be cut down on account of it.

MR. MCD. ALLAN.—In curing black-knot first get rid of the suckers, then cut away the affected parts, and manure with salt. He thought black-knot was not so formidable as curculio, but as yet he had found no signs of it, he was happy to say.

MR. BEALL said he had not seen any cases of black-knot at Lindsay until this year,

but was sorry to say it had showed itself on the red cherry, but not on plums. He, however, knew a plum tree that had been affected for over thirteen years.

MR. YOUNG said he managed to keep black-knot under by amputation, and curculio by jarring.

PRESIDENT DEMPSEY.—In 1848 I saw black-knot on the cherry; two years after it appeared again, and this time killed the trees. Sprouts came up from some of them, and they bore fruit; even after a second and third attack he had known this take place. Black-knot appeared on a plum that he had obtained from Dr. Beadle grafted on a wild plum. His neighbour's plum-orchard was covered with it to such an extent that the trees had all to be cut down; sprouts grew, and became healthy, and finally bore fruit. He found plum-rot worse to cope with than curculio.

The next subject for discussion was the "Best Means of Resisting the Borer in Apple Trees."

Very little was said on this subject, as no one seemed to find it particularly troublesome, only one person having seen any signs of it among his trees.

GRAPES.

MR. BROWNLEE said he found the Eumelan succeed well, though the bunches were rather loose, yet they ripened well, and were not subject to mildew; they were ripe on the open trellis on the 15th of September. The Delaware also succeed well and ripen, and are not subject to mildew. The Concord hardly ripens some seasons, but succeeds well. Creveling ripens well, but the bunches are very loose. He grew the Brighton, Burnet, Champion, Clinton, Concord, Creveling, Delaware, Eumelan, Hartford Prolific, Moore's Early, Muscadine, Rogers' Nos. 2, 3, 4, 5, 9, 15, and 22. A coop of chickens would eat the thrips.

SMALL FRUITS.

DR. CAMERON.—I have grown Whitesmith's gooseberry, by cutting out the wood thoroughly, with very little mildew.

MR. CHISHOLM.—Briekle's Orange raspberry does well here without protection. In July shorten the canes to strengthen them, so that they will stand up, but find no trouble in growing them. The English gooseberry I find mildews. Houghton succeeds well, as also do currants, except where they have been attacked by the saw fly. Black Naples, White Grape, Cherry, etc., all do well, but hellebore must be employed to keep the leaves from being destroyed by the saw fly.

MR. MILLER said he grew a great quantity of currants, but not many raspberries or strawberries.

MR. FROST said Downing gooseberries are my favourites, and bear well; they are hardy, but I am obliged to use hellebore. All small fruits do well, especially currants.

MR. DOYLE said he grew large quantities of strawberries, and went in especially for the Wilson.

MR. J. E. WHITE said Crescent Seedling strawberry brought him in an immense crop, and always did well. He preferred the Crescent to the Sharpless. Cuthbert raspberry promises well.

MR. MACLEAN.—Black currants grow well in our part, but do not bear well.

MR. TROTTER said he found currants do well, but was obliged to use hellebore. Raspberries also grow well, and Wilson's strawberry.

MR. ROBINSON said the late frost spoiled the crops this year. He found none so profitable for market as Wilsons; Sharpless are very promising; Col. Cheney is productive, but soft; Prouty handsome, but soft, poor on sandy soil; Sharpless must be grown in hills; Crescent will out-crop the Wilson; Glendale is valuable only for being late.

MR. BUCKE thinks highly of the New Dominion and Arnold's Pride.

JUDGE MACPHERSON thought highly of the New Dominion.

PRESIDENT DEMPSEY thinks very highly of Arnold's Pride and also of the Sharpless, which do best in clay loam; in the highly-manured gardens they do not bear well. Manures with ashes, bone-dust (half a ton of bone-dust to an acre), ten barrels of unleached hardwood ashes to an acre. Wilson's Strawberry gave 6,000 quarts to the acre.

MR. ROBINSON said Knevet's Giant was soft, but productive, good flavour, and large. Pride of Hudson is a splendid berry and rich flavour. The Victoria is very good. Franconia is the best among foreign raspberries. Cuthbert is prettier than Franconia, and bears a remarkably good crop, but is not so hardy; it is nearly as productive as the Philadelphia. Turner is very early, the best early; Cuthbert is best late. This year Turner showed signs of mildew, but has an excellent flavour. Gregg—this is a large black-cap—sold for ten cents a quart at wholesale.

MR. BEALL grows Whitesmith's gooseberry by forking up the soil in spring and covering it with a heavy coat of manure (rotted) and a quart of salt to each. Native spruce makes the best evergreen hedge. Japan Quince makes a beautiful hedge, both when in flower and later in leaf.

MR. ALLAN says osage suckers sometimes freeze. English blackthorn forms the best hedge; the Berberry also makes a good hedge; they are very handsome and very hardy. Norway spruce makes the best evergreen hedge.

After a vote of thanks to the friends at Owen Sound, the meeting broke up.

REPORT OF COMMITTEE ON FRUIT EXHIBITED AT THE SUMMER MEETING.

Owen Sound, 24th August, 1881.

Your Committee on Fruits, composed of Messrs. McLean, Young, McD. Allan, and Bucke, have much pleasure in submitting the following report on the fruits exhibited at the summer meeting to-day:

APPLES.

MR. SAUNDERS showed an apple grown in 1880—whether from long keeping or otherwise, though presenting a very pretty appearance—yellow dotted skin with a bright pink cheek—presented no special recommendation, and appeared to be a seedling.

MR. JOHN MCLEAN exhibited a Golden Russet of last year's growth in fair condition; also the Northern Spy, Cooper's Market, Æsopus, Spitzenburg, and Greening, showing their long keeping qualities, but too ripe to have any flavour. His Early Harvest of this summer was much later in ripening than usual.

MR. WILLIAM BROWN placed on the table a Seedling Russet of 1880; it is an excellent keeper. The tree is now thirty years old; a heavy and constant bearer; and your Committee would recommend it for propagation and dissemination. Also a fair sample of the Sweet Bough.

MR. D. H. CREASOR handed in some fine Hawleys, and a fair specimen of Early Harvest; also a fine lot of Duchesne of Oldenburg, but not so far advanced as those grown further south.

MR. BEATTY displayed some Red Astrachans.

PEARS.

MR. JOHN CHISHOLM exhibited the Beurre Diel and Louise Bonne de Jersey, both fair samples for the time of year.

MR. D. A. CREASOR, a plate of Bartletts, Clapp's Favourite, Seckle, all fine samples.

MR. RICHARD TROTTER showed a good sample of Early Harvest.

MR. J. MCLEAN presented the Brandywine, of fair quality.

PLUMS.

MR. RICHARD TROTTER displayed the Washington, Bradshaw, and Nectarine, especially fine samples, with no trace of curculio.

MR. D. R. DOBIE had Jefferson and Washington; the latter were well-grown, fine plums; the former were good, but disfigured by russety marks, no doubt caused by the late spring frost of 10th June.

MR. D. A. CREASOR presented Coe's Golden Drop, Duane's Purple, Bradshaw, Washington, Green Gage, Pond's Seedling, all fine specimens, with the exception of the last, which was of inferior quality.

MR. WILLIAM BROWN—Green Gage, and some Seedlings, without any special merit; one of these, however, a yellow plum, comes true from seed, and might be found hardy in a colder climate.

MR. P. E. BUCKE, of Ottawa, showed some specimens of the Glass Seedling, grown on his grounds. The tree is very thrifty, and appears to be perfectly hardy; the specimens were unusually fine, and the tree, which was sent out by the Fruit-Growers' Association, is reported as being quite an acquisition to the Ottawa district.

MR. JOHN MCLEAN placed on the table a Seedling blue plum of considerable merit; medium size; free-stone. Your Committee would recommend it for trial in other and colder localities, and if found to maintain its general good character, that it be taken hold of for general cultivation.

MR. J. CHISHOLM also exhibited a Seedling which we recommend for further trial over an extended area; it is a late blue plum, not so handsome as the previous one, but its qualities might make it as advantageous to grow and quite as profitable.

GRAPES.

MR. THOMAS BROWNLEE showed Delaware, and Rogers' Nos. 5 and 15; all were fair samples of their kind.

PEACHES.

MR. CREASOR had the Hale's Early, of-medium quality.

(Signed)

P. E. BUCKE.
ALEX. McD. ALLAN.
H. F. YOUNG.
JOHN MCLEAN.

To the President of the Ontario Fruit-Growers' Association.

REPORT OF COMMITTEE APPOINTED TO EXAMINE THE SEEDLING FRUITS SHOWN AT THE PROVINCIAL EXHIBITION AT LONDON, 1881.

Your Committee, appointed by the Association to examine the Seedling Fruits exhibited, beg to submit the following Report:

PEARS.

A large winter Seedling Pear shown by Mr. Lutz, of Stony Creek, and which was referred to in our Report last year, was again brought before us. It is very attractive in appearance, and the specimens fully equal those shown last year. We believe this to be a promising fruit, and one that deserves to be more widely distributed, and hope that some steps will be taken to place it in the hands of fruit-growers in other sections of the country for more extended trial.

Further samples of a Seedling Fall Pear, raised by Mr. P. C. Dempsey, were shown, in which the fruit fully maintained the high quality spoken of last year. We regret that the size of this fruit is too small to admit of its ever becoming popular.

GRAPES.

Albino.—Claimed to be a cross between Allen's Hybrid and Concord. This new white-grape, raised by Mr. Wm. Haskins, of Hamilton, and shown for the first time last year, was again on exhibition, and impressed your Committee very favourably. In size the

berry is about the average size of Concord; bunch a little smaller than Concord; fruit yellowish-green, with a nice bloom; fleshy, with a sweet melting pulp, and very pleasant flavour, and free from the flavour of the fox grape. Foliage about the same as Delaware. If this vine proves equally prolific, hardy and free from mildew in other localities, we believe it will take its place in the front rank among the new white grapes.

Yellow Concord.—A seedling of the same parentage as Albino, also raised by Mr. Haskins. This grape is a little larger in berry and bunch than Albino; bunches shouldered; colour of berry greenish-yellow, inclining to amber; flesh sweet, of a pleasant flavour; pulp not so tender as that of Albino. This is the first time this grape has been brought under our notice.

Abyssinia.—This new black grape we reported on last year; it is also a seedling of Mr. Haskins'. As shown this year, the bunches are large; berries larger than average Concord; skin thin, and will bear chewing without any unpleasant after-taste; berry sweet, juicy and high-flavoured, with a tender pulp. We are glad to know that this grape is being tested in other localities, as we look upon it as one of the best grapes of recent introduction.

Pocklington.—This is a large and handsome-looking grape, large in bunch and berry; fruit greenish-yellow, inclining to amber when fully ripe; appears to ripen about with the Concord; flesh sweet, with a pulp which is moderately tender; skin thin, and will bear chewing without imparting more than a slight sense of acidity. As this variety is being largely disseminated throughout our Province, we shall soon be in a position to judge of its relative merits as to hardiness, productiveness, etc. In flavour and odour this grape reminds one of the native fox grape, a characteristic present in most of Rogers' Hybrids, and one which many do not object to.

Prentiss.—This is a Seedling white grape, shown by T. S. Hubbard of Fredonia, N.Y. Bunch a little below medium in size, but very compact; berries, indeed, somewhat crowded in the bunch. If we can judge from the bunches exhibited, attached to the wood on which they have grown, it must be very prolific. Berries greenish-yellow, nearly round; sweet, juicy and of a pleasant refreshing flavour, with a tender, almost melting, pulp; skin rather thick, and imparts a slight sense of acidity to the mouth when long chewed. Although not in our opinion as fine in quality as some of the other grapes here reported on, we believe that if the Prentiss proves hardy and ripens sufficiently early in our Province, it will commend itself to the public as a good dessert fruit, and one which we are of opinion would keep well and bear shipping to long distances. Some of the bunches now on exhibition are the same as were exhibited at the meeting of the American Pomological Society in Boston three weeks ago.

Niagara.—This handsome greenish-yellow grape, which has now been before us for two years, is again on exhibition. It is shown by the Niagara Grape Co., of Lockport, N.Y. This grape has not yet been fruited in any part of our Province, and as yet we have no knowledge as to its hardiness here. The bunch is above medium in size, and compact; the berry oval, with a nice bloom on its surface; in size about the same as Concord; flesh very sweet, with a tender, almost melting pulp, and a strong odour and flavour of the fox grape. As a market variety we think this grape promises to be a very popular one, if it should succeed as well throughout our Province as it appears to do with the present owners.

MR. REED, of Port Dalhousie, exhibits two Seedling white grapes under Nos. 1 and 2.

No. 2.—Is of a greenish-amber colour; bunch medium, slightly shouldered; berry medium in size, round, and covered with a nice bloom; flesh sweet, rich and nearly melting. We are favourably impressed with the quality of this fruit, and should be glad to see it tested in other parts of Ontario.

No. 1.—Fruit yellowish-green; bunch small; berry about the size of Delaware, round, very sweet and rich; skin thin.

MR. RICKETT'S exhibits eleven varieties of his Seedlings.

Bacchus.—Is a new wine grape, about the size of Clinton in bunch and berry, but sweeter than Clinton, and with a pleasant, sprightly flavour.

Empire State.—Bunch large; berry medium; colour pale green; fruit juicy and watery, rather acid.

Excelsior.—Bunch large; berry medium; ripens unequally, like Diana; fruit juicy, sweet and sprightly, with a melting flesh, and pleasant musky flavour.

Lady Washington.—As exhibited this year, this variety is not equal in quality to those shown last year.

Irving.—Bunch large; berry above medium, round, greenish-yellow; sweet, with a pleasant, sprightly flavour and tender pulp.

Jefferson.—Bunch large; berry medium, of a pale red colour, round, sweet, with a tender, juicy flesh, and good flavour. This variety we esteem as the best among those exhibited by Mr Ricketts this year.

WM. SAUNDERS.
P. C. DEMPSEY.
D. W. BEADLE.

ORNAMENTAL PLANTING.

By W. C. BARRY, ROCHESTER, N.Y.

It hardly comes within the scope of this paper to treat of the details of landscape gardening, but ornamental planting is so intimately associated with that subject that by way of preface I will refer to some of its leading principles and operations.

DRAINAGE.

One of the first and most important considerations connected with ornamental planting is thorough drainage of the soil. Few people are aware of the importance of this operation, and many gardens and grounds which have been planted at considerable expense, afford little or no satisfaction, in consequence of lack of attention to this important work. Planters should understand that trees and plants cannot thrive in undrained soil, unless it is naturally dry, which is rarely the case. There are many potent reasons for drainage, which, if properly considered, would induce planters to devote the necessary time and thought to the subject. I will refer to some of them briefly.

Experience has taught those who have planted extensively and observed closely, that all trees and plants thrive best in a dry, deep, porous soil. The roots of such trees strike deeper, the stems grow stronger, and the young wood ripens up perfectly before the cold season sets in. It is of the greatest consequence that the young growth should ripen well, for if it does not, a severe winter is certain to kill it back, as is the case generally, if not always, with trees and plants growing in undrained or wet land. Disappointed planters sometimes tell us that the trees and shrubs which they purchased, and which in our catalogues are represented to be perfectly hardy, have been winter-killed, and they ask us how we can account for it. An examination of the case most always shows that imperfect drainage is the cause. The hardiest trees and shrubs will not root well in wet soil, and though they may live for a while, they go sooner or later. Conifers and half hardy trees particularly cannot endure such treatment, and a dry summer or a severe winter quickly puts an end to their existence.

Deep drainage, while it carries off the superfluous moisture, so injurious in its results, has also the effect to render the soil warm, friable and porous, allowing it to be worked more thoroughly, and preventing injury from drouth. Cultivators have learned that well-drained, deeply-worked land, resists the drouth remarkably by absorbing all moisture in the air. Great losses are thus averted.

Many are deterred from drainage on account of the expense. Good tile drains, sunk three or four feet in the ground, and about twenty feet apart, with a good fall and proper outlet, can be made at a moderate expense. Even though the outlay seems quite considerable at first, it is nothing compared with the losses and disappointments which may result from undrained land. After draining, the soil should be well ploughed and stirred to the depth of eighteen inches, and properly enriched. If the drains work well, we may look forward to good results from the planting.

ERRORS IN PLANTING.

The effects of judicious ornamental planting are greatly enhanced if the grounds are well laid out. Inasmuch as I intend my remarks to apply more particularly to small or medium-sized gardens, I will refer briefly to some errors in planting which are usually made, and which mar the beauty of grounds.

I suppose that I cannot be much out of the way in stating that there are few people who know how to lay out a garden. This is not strange, because it is no easy task, and it requires knowledge, experience and skill. Many imagine that they are capable of laying out their own grounds, and only find out how little they know of the subject too late—after they have planned and planted with unsatisfactory results. The laying out and planting of grounds, whether they are large or small, should, if possible, be entrusted to competent artists. The expense will be small, and the satisfaction great.

In every city and village, gardens are to be seen which have been planned and planted utterly regardless of all rules of landscape gardening. Those who have a knowledge of the art cannot refrain from noticing the blunders that are made, and it is particularly annoying to them to see fine grounds, which might have been rendered exceedingly interesting, utterly ruined by injudicious planning and planting. The owners of such grounds, though they know nothing about gardening, feel that they have made grave errors, but that it is beyond their power to correct them.

In city gardens, one of the mistakes most frequently committed is that of planting indiscriminately—leaving no breadth of turf, and destroying the lawn without realizing any effects from the plantings. If we look about us we shall see how often this occurs; yet it seems very strange that gentlemen who have spent thousands upon a house, would be willing to sacrifice beautiful grounds by careless planting. The same attention and care which are bestowed upon the house should be devoted to the garden, in order that the house and its surroundings may present one harmonious whole. Another common error is that of planting trees which attain large size, in small lots. A tall elm or Norway spruce, or other large tree, is very much out of place on a small lawn. There is no excuse for errors of this kind, for there are numbers of trees of secondary size which can be employed with advantage. In the proper place I will name a selection of trees and plants suitable for the purpose.

WALKS AND DRIVES.

These are prominent and important features in ornamental grounds, exercising a marked influence upon their appearance, and the degree of enjoyment they may afford. They should therefore receive a due share of attention, both as to location and construction. Walks and drives should be so constructed that a few moments after the heaviest shower we can go over them without the slightest inconvenience. If garden walks are not properly made with stone and a good coating of gravel, it will be necessary to deny ourselves the pleasure of many a ramble through the garden.

Walks with graceful curves are on the whole most appropriate for small grounds. They lend a charm to the garden which straight walks do not. The walk from the street to the house must often, of necessity, be straight. This divides the lawn immediately in front into regular parts, requiring a certain style of formal planting, in order to preserve harmony. If, instead of a straight walk, a curved one be started at one side of the garden, the lawn will be irregularly divided, enabling another and more pleasing style of planting to be employed. The curves of the walk must be long and easy. It will sometimes require a good deal of labour to make the curves easy and pleasing. The walks should first be marked out with small stakes, and the curves must be arranged and re-arranged until they are satisfactory to the eye. A proof of easy curves is the facility with which they may be traversed, either on foot or in a carriage. If the curves are abrupt and difficult, the edges of the grass will suffer by being trampled upon, either by horses or foot passengers. Walks with curves are often badly designed, the curves being very difficult, thus spoiling the effect of good lawn planting. Straight walks, planted on either side with large growing trees, present a majestic appearance; on large, level grounds they may be

introduced with fine results ; but curved walks are best adapted to ornamental planting, being more natural.

THE LAWN.

Since the introduction of the lawn mower, the lawn has come to be regarded as the great feature of a garden. When it is well kept there is nothing more beautiful or pleasing than a broad, open space of turf, and in the planting and arranging of trees it should be our endeavour to keep the lawn as open as possible. This can be accomplished by arranging the trees and shrubs in borders or belts around the margin, with a fine specimen tree occasionally standing alone in a prominent position, where its beauties can be seen to the best advantage.

BORDERS OF SHRUBS.

Many gardens are too much exposed. It has recently become fashionable to remove fences, and grounds thus opened might as well be public property. There is no seclusion or privacy, and every movement about the garden can be observed. One of the charms of a garden is the air of seclusion which should prevail there. To secure that privacy which all who are fond of gardening certainly desire, we would suggest the planting of a border inside the fence. This border can be varied in depth, according to the size of the garden. It should be a little higher than the lawn, and the outer line should consist of graceful curves. In this border can be planted a variety of shrubs, dwarf conifers, hardy plants, etc., but no trees. The shrubs and conifers should be planted irregularly, from three to four feet apart—the taller ones nearest the fence, and the dwarf subjects near the margin. For a border six feet in depth I would suggest two rows of shrubs, the first consisting of the larger growing ones, like Weigela, Deutzia, Forsythia, Japan Quince, Viburnum, Cornus Variegated, Red Dogwood, Tartarian Honeysuckle, Lance-leaved Spiraea, Syringa, Althæa, Calycanthus, Plum-leaved Spiraea, Barberry, Dwarf Spruce, Dwarf Pine and Juniper.

For the second row, Deutzia Gracilis, Mezereon Pink, Dwarf and Golden-leaved Syringa, Tree Peonies, Dwarf Double Flowering Almond, Prunus triloba, Dwarf Weigela, Fortune's Dwarf White Spiraea, Plum'd Hydrangea, Spiraea Thunbergi, Juniper Squamata and Tamarisk-leaved Juniper. The outer edge can be formed of Funkias, Dwarf Phlox, Japan Spiraea, Evergreen Candy tuft, Perennial Flax, Forget-me-not, Lungwort, Soapwort, Sea Pink, Sweet Violets.

Between the shrubs, near the front, may be planted lilies, tall phlox, and occasionally a hollyhock.

All the shrubs and plants which I have named are perfectly hardy, and if properly pruned can be kept of moderate size and good form. This selection will furnish a constant succession of bloom from early spring till late in the autumn.

The border should be lightly forked every autumn, and all the plants contained in it will be much benefited thereby.

In small gardens this border may be omitted altogether, and those who desire their gardens more exposed can, instead of a fence, plant a few shrubs irregularly—allowing the grass to grow quite closely around them. When fences have been removed along an entire street or avenue, the lines of each lot may be marked by planting shrubs in this way, relieving the lawn of that nakedness which would otherwise prevail.

Shrubs grown in a cultivated border thrive much better than they do grown in grass, and the border is therefore preferable.

Borders like the one above referred to may be formed at the sides of the garden, concealing division fences, if there be any. In these borders a great many varieties of shrubs may be employed, which during the summer will afford an unlimited amount of pleasure. In the smallest gardens this mode of planting may be adopted, leaving the centre of the lawn open, without a single tree or shrub. Fine effects may be produced if neighbours would unite and form a double border instead of fences, planting the taller shrubs at the centre, and the smaller ones at the outside, varying the sky outline by the introduction of a tree at intervals. In these side borders it is always well to employ shrubs that will not become too large, though any shrub, by proper pruning, can be kept small. This is the

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great advantage we have in dealing with shrubs, and when we find that they become so large as to conceal too much, they can easily be cut back. While a certain amount of privacy is very desirable, it is not pleasant to be too much confined, and in arranging these borders this point must be kept in view.

In medium-sized places a few trees may be planted on the lawn. These should have a position at the side, rather than in front, as the view from the windows of the house should never be interfered with. Often only a single tree can be admitted—perhaps a handsome Cut-leaved Birch, Oak-leaved Mountain Ash, Purple Beech, Cut-leaved Beech, Young's Weeping Birch, or Weeping Cherry. All of these form beautiful specimens, and if a little care is bestowed upon them, each one when it attains age will be a picture in itself, always attractive and pleasing. Sometimes shade is required, in which case it is necessary to plant large growing trees within twenty feet of the house. I know of no tree which affords shade so quickly and withal is so handsome, as the superb Elm. Groups of Dwarf Conifers may be introduced on lawns, such as the Dwarf Norway Spruce, the lovely Juniper, compact Arbor Vitæ, Tamarisk-leaved Juniper, Dwarf Pine and Golden Yew. All of these are hardy, and when planted three together irregularly, or in the shape of a triangle, from three to five feet apart, will in time look pretty. In small grounds it is difficult without seeing them to say where these groups should be located. The situation must be studied, and nature imitated as far as possible.

Thus far I have not referred to flower-beds in lawns. It is a common practice to make beds of geraniums in the centre of a lawn. If the style of gardening which I have suggested be carried out, a flower-bed of this kind would be out of place.

Geraniums and other bedding plants may be employed to advantage close to the house, and can be cultivated either in beds or in borders. A fine border of mixed plants, consisting of Tea Roses, Heliotrope, Double Feverfew with Coleus and Centaureas intermingled, presents a beautiful appearance, and is very useful for cut flowers. Being near the house they are easily accessible, and do not detract from the beauty of a lawn. The edges of groups and borders of shrubs are beautified by the use of such plants. We cannot admire great masses of Geraniums, but employed as they should be, they enliven a garden, and may be considered indispensable.

GROUPS OF SHRUBS.

So far my remarks have referred more particularly to small or medium-sized gardens, such as are usually seen in cities. It is my intention now to say a few words on the grouping and massing of shrubs and trees, a mode of planting suited to large gardens and grounds; and it will be my endeavour to mention only those trees and shrubs which in the first place are generally regarded as perfectly hardy. In the selection of trees and plants too much stress cannot be laid upon this important qualification. Half hardy or tender trees usually afford little satisfaction, and frequently give great dissatisfaction. Besides, the list of perfectly hardy trees and shrubs is so large, that there is no necessity of using tender trees or shrubs, or those which have not been fully tested. For all sections of our country I know of nothing which will give more satisfaction than hardy deciduous ornamental trees and shrubs, and a few conifers. The northern climate is so severe that many of the finest conifers, being tender, cannot be employed. With extra care and protection they may live for a time, but not long. After considerable experience with half hardy trees and shrubs, I have come to the conclusion that planters who are unwilling to give such subjects extra care, had better not introduce them to their grounds. There is nothing so discouraging as to rear a fine tree, and just as it becomes beautiful, to lose it by severe cold. All those who live in cold climates and plant tender stock, run considerable risk. It therefore becomes necessary for those living in severe climates to make use of such trees and plants only as are capable of resisting great cold. There is no lack of this class of trees, and if planted judiciously every desirable effect may be realized, just as well as if the most expensive and unreliable half hardy conifer or shrub were used.

Groups of shrubs are well adapted to place in the hollows of the curves of walks. Masses of shrubbery thus arranged impart a variety to the landscape, and are in imitation of nature. In placing groups upon the lawn, care must be taken not to interfere with

the view from the windows of the house, as it is from this point that the pictures in our garden will be most frequently inspected. It should be our aim to form pleasing views from all of the principal windows, and if this object is kept in view from the outset, many serious errors will be averted.

To group shrubs so that they may appear natural and informal, is somewhat difficult. Stiff groups have an artificial appearance, never please the eye, and the effect is always unsatisfactory. Their outlines should be irregular, with swells and projections, not rounded and regular, as such masses frequently are. It is customary to give masses a circular or oval shape, with the tallest plants in the centre and the dwarfer ones at the outside. Extreme regularity of outline is thus attained, a result quite the contrary of that which ought to be aimed at. We should attempt to copy nature, making the groups resemble some natural ones which we have no doubt seen. While the taller shrubs should form the centre of the shrubbery, it will often be necessary to produce irregularity by planting them at intervals near the edges among the dwarfer subjects, thus producing an uneven sky outline. The bolder projections and swells should have the large shrubs, while the smaller and narrower parts should be planted with the lower growing shrubs, thus balancing nicely the various portions of a group. Single specimen trees will form a valuable adjunct to such a group when placed at its salient points. A number of desirable lawn trees can thus be employed without interfering with the open lawn and the views across it. There are some shrubs which, on account of their peculiar foliage, are especially valuable in groups.

The *Purple-leaved Berberry*, with its handsome purple leaves, yellow flowers and fine fruit, can be used effectively where a mass of one colour is desirable.

The *Golden-leaved Spiræa*, with its golden-tinted foliage, produces an effective contrast, but it must not be employed too frequently.

The *Purple leaved-Filbert* is remarkably showy and beautiful, and where it has a background of rich green foliage, it appears to great advantage.

A recently introduced variety of *Syringa*, with pale yellow leaves, is a very useful plant. Either as a single specimen, or used occasionally in a group, it lends a charm to surrounding shrubs, and will be much prized by those who desire to form pleasing contrasts.

The *Silver Variegated-leaved Cornelian Cherry* has remarkably handsome foliage, the leaves being broadly margined with silvery white. The variegation is permanent, and the plant as a whole has a peculiar richness and elegance, which justify the planter in giving it a choice position. When it is planted alone, and can enjoy abundance of room, it becomes very attractive and showy. In the border its bright foliage contrasts well with the green of other shrubs.

The *Dwarf Variegated Weigela* is an elegant shrub of dwarf habit, and has very pretty leaves, which are broadly margined with a silvery hue. The flowers are of a delicate flesh colour, or nearly white, and contrast beautifully with the foliage. Its compact, regular form, and bright foliage, render it unusually attractive and pretty. For the edges of groups and borders it has peculiar value.

The *Variegated Althæa* is another very handsome and showy shrub, with its leaves marked with light yellow. Its flowers are double, and of a purple colour. Among variegated-leaved shrubs this has long been a favourite, and its peculiar hardness adds to its value.

Koster's Variegated Weigela is distinct and quite ornamental, the margins of the leaves being bright yellow, while the flowers are rose-coloured. It is of low habit, and will be very acceptable as a companion for the dwarf variety previously named. It has another merit, of being of recent introduction.

I give special prominence to these purple and yellow-foliaged shrubs, because they possess striking peculiarities and are valuable material for effective work. But they must be employed judiciously, rather sparingly, for a profusion will surely create an exactly contrary effect from that which ought to be aimed at. Associated with shrubs having rich green foliage, a few of these purple and yellow-leaved shrubs produce fine effects. Whenever they are employed in groups, be careful to have an abundance of green about them, and if planted singly, use but few in a garden. In extensive grounds striking effects may be produced by planting a number of the purple in a mass, with a

row of yellow shrubs about. But groups like this are too artificial and formal, and are only admissible for distant effects.

Effective masses may be made of flowering shrubs; for example, by planting ten or twelve plants of *Wiegela Desbois* together, using one of the dwarf varieties as an edging. The profusion of beautiful rose-coloured flowers with which every branch is thickly covered, and which wave gracefully in the air, will not fail to excite admiration, and the naturally straggling, irregular growth of the variety removes all appearance of stiffness or formality.

The *Plumed Hydrangea* can be used in a similar manner, with good results. When in flower its immense panicles bend gracefully, rendering a mass showy and elegant. Hundreds of panicles thus assembled present an admirable effect; but this mode of planting can only be recommended for extensive grounds.

The *Double-Flowering Plum* (*Prunus triloba*) and the dwarf *Double-Flowering Almonds*, white and rose, present a charming appearance when planted together. They flower at the same time, and their profuseness of bloom, delicacy and beauty of flower, satisfy the most fastidious, and excite admiration in the most indifferent observer.

FLOWERING SHRUBS OF SPECIAL MERIT.

A long list of species and varieties, as enumerated in the catalogues, is often perplexing. I think a brief reference to some which merit special attention will not be out of place.

Rose-Coloured Dogwood.—The common Red Dogwood is well known, and is desirable for its winter effects, its red branches being very showy when divested of their leaves. The variety under consideration has much brighter bark—of a bright rose colour, and the habit of the plant is more compact and bushy. Although not new, it is undoubtedly quite rare, and has much to commend it for the purposes for which the Red Dogwood is usually employed—winter effect.

The various varieties of *Japan Quince* are too well known to require any notice; still, the attributes which they possess are so important that I am prompted to say that we do not appreciate them as we ought.

The *Double-Flowering Deutzias* are rapidly growing in favour, and they ought to find a place in every garden, large or small. The dwarf single-flowering is a charming plant, which, on account of its small size, free flowering qualities and hardiness, cannot be too highly recommended for small gardens. It has ample bright green foliage, its flowers are snowy white, and are produced in great profusion early in June.

We have already referred to one variety of *Weigela* which cannot be praised too highly. It is called *Desboisi*. The old and well-known *Rosea* still holds its own against all new comers, on account of its fine habit. A vigorous growing, pure white *Weigela* has been much sought after, and it is gratifying to state that this want will soon be supplied. Another year, and this new variety will be offered for sale.

The *Forsythia*, with its golden bells, early in spring has few equals among shrubs; while the *Halesia*, with its pretty, white, bell-shaped flowers, always commands the admiration of all lovers of nature. The *Altheas*, as autumnal bloomers, have a special value, and are therefore indispensable. *Duc de Brabant*, which produces reddish lilac flowers, and *Leopoldii* (flore pleno), yielding rose-coloured blossoms, are two of the newer sorts, the qualities of which are commendable.

The large-flowering pink *Honeysuckle* is a charming shrub, and the old, sweet-scented *Syringa* must not be overlooked. The *Spiræas* are numerous, and the various varieties flower in succession from April till September. While all are so desirable as to seem indispensable, some have characteristics which entitle them to more than ordinary consideration. The *Double-Flowering Plum-leaved Spiræa*, though old and well known, is, in my opinion, one of the best shrubs in cultivation. Its habit is graceful and elegant, its foliage is glossy and fine, and its snowy white flowers are produced in the greatest profusion, and keep in perfection for a remarkably long period.

A large plant is attractive, even from a great distance, and the remarkable purity of its flowers always impresses the observer. While it is always useful and beautiful wherever employed, it seems to be specially adapted to cemetery lots.

Thunberg's Spiraea will always be admired for its graceful habit and delicate foliage. It does not grow large, and yields its blooms very early in spring. It is very appropriate for small gardens.

Fortune's Dwarf Spiraea, as its name indicates, does not grow large; nevertheless, it produces an abundance of flowers in August, when there is a great scarcity of bloom. It is much esteemed on that account, as well as for its naturally rounded, regular form. It is appropriate for small lawns, and for the margins of borders and groups.

The *Lance-leaved Spiraea* is an admirable shrub for the lawn. Its flowers are white and freely produced, and the foliage and habit of the plant are all that could be desired. I have already referred to the *Golden-leaved Spiraea*, which preserves its handsome yellow foliage the entire summer. Planted by itself on the lawn, it forms a conspicuous and beautiful object.

The *Lilacs*, with their immense panicles of fragrant flowers and rich foliage, will always be admired and esteemed. Two varieties deserve particular notice. *Cerulea superba* bears large clusters of blue, fragrant flowers, and *Rothomagensis* produces large panicles of red flowers. The *Viburnums* are a most valuable family, and the various members present an array of good qualities rarely met with. *Lantanoides* has fine foliage, and white flowers, followed with crimson fruit. Throughout the season, in the various stages of growth, flowering and fruiting, it is always charming, and merits wide dissemination.

The *Japan Snowball* is one of the best of the newer shrubs. Its plaited leaves are remarkable and beautiful, and its globular heads of white flowers are very showy. It surpasses the common variety in many respects. Its habit is better, foliage much handsomer, and the flowers are of a purer white and more delicate.

Among climbing shrubs for the decoration of houses, *Hall's Japan Honeysuckle* is superior to any other. It grows rapidly, its foliage is handsome, and almost evergreen, as it remains in perfection often till January; and its straw-coloured flowers have an exquisite fragrance, and are produced in the greatest abundance all summer. For the verandah it has no equal.

The *Clematis* is deservedly very popular. Superb varieties are just being propagated, but I cannot now refer to them.

For covering stonework, walls, etc., the *Japan Ivy* is most valuable. When introduced it was feared that it might not prove hardy, but it has withstood the severest winters. Its mode of growth is very interesting, and its foliage is glossy and luxuriant, without any coarseness. It furnishes a much handsomer covering for walls than the American Ivy, and is worthy of the attention of all planters.

I have spoken at some length of shrubs, because this class of plants is particularly adapted to small or medium-sized gardens. All that I have named are particularly hardy, of easy culture, and never fail to afford the greatest satisfaction. I desire to add a few words relative to the

PRUNING OF SHRUBS.

Many persons trim and shear them into regular shapes, imagining that regular outline adds to their effect and beauty. While symmetry and regularity of form are to be admired in a shrub, this quality should never be gained at the expense of health and natural grace. Each shrub has peculiarities of habit and foliage, and we should aim to preserve them as far as possible. Judicious pruning to secure health and vigour is necessary; but trimming all kinds of shrubs into one form shows a lack of appreciation for natural beauty, to say the least. *Weigelas*, *Deutzias*, *Forsythias* and *Mock Orange* flower on the wood of the preceding year's growth; hence these shrubs should not be pruned in winter or spring, but in June, after they have finished flowering, when the old wood should be shortened or cut out, thus promoting the growth of the young wood, which is to flower the following season.

Spiræas, *Lilacs*, *Althæas* and *Honeysuckles* may be trimmed during the winter or during the spring, but the branches should only be reduced enough to keep them in good shape. The old growth should occasionally be thinned out, and the suckers and root sprouts removed when they appear. The best time, however, for pruning all shrubs is

when they have done flowering. The *Plumed Hydrangea* should be severely cut back and thinned early in spring.

TREES WITH COLOURED FOLIAGE.

Some trees have remarkably distinct and showy foliage, and are therefore peculiarly valuable for planting singly or in groups.

The *Purple Beech*, with its rich purple leaves, is unequalled among trees of its colour.

Schwedler's Maple, a new variety of the Norway, with purple foliage, is a charming tree, and promises to occupy a high place among purple-leaved trees. It is perfectly hardy, healthy and vigorous.

The *Blood-leaved Peach* has beautiful crimson foliage, and when making its young growth, is very striking. It grows rapidly, and becomes effective very quickly. It is not, however, a long-lived tree, and should only be used where immediate effects are desired, making provision for its loss, which is likely to occur in a few years.

The *Tricolour-leaved Sycamore* is one of the handsomest ornamental trees, its leaves being mottled and marbled with yellow. The variegation is constant and very effective. The *Purple-leaved Sycamore* is also a very interesting tree.

The *Golden Locust* has handsome gold-tinted leaves, and may be employed in groups very effectively.

Memminger's Horse Chestnut is one of the newer trees which is worthy of mention, on account of its peculiar foliage. Its leaves are, as it were, sprinkled and dotted with white, the effect of which is quite remarkable. As a single tree upon the lawn it is very attractive.

The *Silver-leaved Linden* is a charming tree of fine habit, and with rich silvery foliage. It deserves to be better known.

The *Variiegated-leaved Bird Cherry* has handsomely variegated foliage. Its branches droop, rendering it a very graceful tree.

The *Royal Willow*, with its bright silvery leaves, is very conspicuous. In groups it is very effective.

The *Golden Oak*, as well as the *Purple-leaved Oak*, are both distinguished for their remarkable foliage.

The *Hybrid Mountain Ash* has very distinct grayish leaves, and is a choice tree.

The *Acuba-leaved Ash* has handsome, variegated leaves, and is very showy.

I have brought these trees with beautiful foliage together, so as to show what valuable material we possess for effective groups. If arranged judiciously and artistically, the most extraordinary results may be produced.

TREES DESIRABLE ON ACCOUNT OF THEIR ATTRACTIVE FLOWERS.

Under this heading I propose to enumerate a few trees desirable on account of their flowers. In the selection of trees this characteristic is often overlooked, and some of the best flowering trees are little esteemed.

I name first the *Virgilia lutea*, which undoubtedly is the finest flowering tree we have. Its long, white racemes of pure white flowers hang gracefully about the tree and form a picture, the admirable points of which it is difficult to describe.

The *Chinese Magnolias* are so well known that it is not necessary to refer to them except in a general way. The *Judas Tree* may be associated with them in groups with fine results.

The *Large Double-Flowering Cherry*, *White Flowering Dogwood*, *Double Scarlet and Double White Thorns*, *White Fringe*, and the *Lindens*, are all admirable trees, and merit prominent places in ornamental grounds.

The *Double-Flowering Horse Chestnut* is justly admired for its elegant form and magnificent inflorescence. The absence of fruit, by which much litter is avoided, is an important argument in favour of its employment.

The *Red-Flowering Horse Chestnut* is surpassed by few ornamental trees.

Kolreuteria paniculata, with its golden yellow flowers, and *Catalpa syringifolia*,

producing great clusters of white and purple flowers, cannot be too highly prized, as they blossom at a season when flowers are very scarce.

The *Double-Flowering Peaches*, which flower immediately after the *Prunus triloba* and Dwarf Double-Flowering Almond, are very desirable. One variety produces double rose flowers, another double white, and another double red. At the flowering season every branch of these trees is thickly studded with blooms, which are remarkable for their size, beauty, and the length of time they remain fresh. The three are a trio of flowering trees which deserve to be extensively planted.

The *Scarlet Maple* yields a profusion of scarlet flowers early in spring before the leaves appear. It is very showy and ornamental.

TREES WITH CUT OR DISSECTED FOLIAGE.

Wier's Cut-leaved Maple has distinct foliage, and the half drooping habit of the tree renders it a handsome object upon the lawn.

The *Dissected-leaved Norway Maple* is much admired for its deeply-cut leaves.

The *Cut-leaved Japan Maples* are exceedingly showy and beautiful, but their slow growth and difficult propagation will always render them rare and expensive. Their hardiness is still questioned, although in our grounds they came through the past winter in good condition, unprotected. I do not lay much stress upon this class of trees, preferring to draw attention to thoroughly hardy, vigorous, rapid growing, easily propagated trees, which can be sold at moderate prices. When the hardiness of the Japan Maple is no longer in question, and its propagation has been rendered less difficult, it will be soon enough to suggest it to the public for general planting.

The *Imperial Cut-leaved Alder* and *Cut-leaved Weeping Birch* are two elegant trees which are much esteemed for lawn planting. The *Cut-leaved Beech* is one of those extraordinary trees which claim special attention. A proper consideration of its qualities will lead us to the conclusion that it is one of the finest trees known to cultivators. Hardy, vigorous, luxuriant, of pleasing outline, and possessing delicately cut foliage, it has all the valuable characteristics that could be asked for.

The *Oak-leaved Mountain Ash* merits the attention of planters, as it has few equals among handsome trees. Its regular and rich foliage makes it an object of much interest.

The *Cut-leaved Oak* is an interesting and beautiful tree.

OTHER NOTEWORTHY TREES.

Maiden Hair Tree, Broad-leaved Beech, Oak-leaved Beech, Willow-leaved Ash, Liquidambar, Scarlet Oak, Moss Locust, Laurel-leaved Willow, Rosemary-leaved Willow, Red Fern-leaved Linden, Elm *superba*, and *Monumentalis*.

DESIRABLE DROOPING TREES.

Young's Weeping Birch, Japan Weeping Cherry, Dwarf Weeping Cherry, White-leaved Weeping Linden, Camperdown Weeping Elm, Small-leaved Weeping Elm.

THE AMERICAN CRANBERRY.—(*Oxycoccus Macrocarpus*.)

ON THE PLANTING, CULTURE, SOIL, ETC.

BY F. TROWBRIDGE, MILFORD, CONN.

As the raising of Cranberries is receiving much attention from those interested in their culture, both in this country and in Europe, it may be of service to give a few facts in regard to the mode of raising them successfully.

The selection of land for cultivation and growing of plants is the first consideration—unless it is adapted to their growth, it will be useless to plant them.

The soil best adapted is low, moist land, suitably drained, so that the water will be

from twelve to eighteen inches under ground. They will grow on moderately damp soil that can be ploughed or cultivated (they will not do well on dry sand or clay soil), or on the borders of streams or ditches, as the plant draws its nourishment from air and water; light sandy soil, or peat covered with two or three inches of sand, is the best adapted to their culture. If planted on rich muck, or loam, they grow rank and strong, sometimes eight or ten feet, and cover the ground over with a net of vines three or four inches thick, but the crop will be light, as the fruit grows on the end of the shoot, and the rank growth throws out but few buds; but if sanded over the shoots are of small growth, and throw out more and stronger fruit buds. There are large portions of land all over our country that would grow large quantities of fruit that is now of but little worth, too wet and too cold for grass, if properly prepared by draining and sanding, would give good results.

In preparing the ground, if wet and spongy it should be drained, and the surplus water left about ten or twelve inches below the surface. It can then be prepared by burning over and removing the top soil—by carting off for compost, or burning when it is dry—by levelling the ground and covering it with pure sand (free from organic matter) two or three inches deep, to keep the surface loose, and to prevent foul grass from choking the plants. Some growers prefer putting on two or three inches of sand (on the ice), and after two years' growth spread on one or two inches more, which I think is an improvement. When the land is mixed with the soil, or top strata, it will invariably throw up weeds, and a large increase of labour is necessary to keep the ground clean. The roots of the Cranberry are very fine, and do not retain their vitality, but roots are thrown out from the stem—these should be put in with a notched stick, or dibble, to make a hole four or five inches deep, in which you place the plant—press the dirt around it with the heel of the boot.

The vines should be left from one to one and a half inches above ground. When planting, pour on water after setting, to settle the sand around the plant—the stem will soon start to grow. They are very tenacious of life, and if when removed they be put into water from fifteen to twenty hours before planting, if apparently dry they will regain their freshness, and are sure to grow; where failures have occurred, it has been owing to their having been taken from the parcel, and put out in dry soil.

Another plan adopted by some growers is to take the vines up without roots, often four or five feet in length, which they cut and sow in drills, or lay the vines down in a trench and cover with dirt, or with a stick two inches wide and half an inch thick; crowd the vines down three or four inches. It will take eight or ten barrels of clean vines per acre; in this case they are planted more shallow, and not so apt to live as when planted with a dibble, as proposed above, cut in suitable lengths. If planted two feet apart, each way, 10,000 plants will plant an acre; they can be cultivated with a cultivator or horse hoe, to keep down the grass and weeds; after one or two years' cultivation they will take care of themselves, or you will only need to pull out what little grass may grow. If wanted in small patches or in gardens, they can be planted a foot apart, and will cover the ground much sooner. They can be planted out at almost any season of the year when the ground is not frozen: in the fall, from September until the ground freezes; in spring, until July.

Overflowing.—It is desirable, and, I might say, indispensable to complete success, that the water can remain on the vines to the 10th or 15th of May, or until there is no danger from frost; it can cover the vines from one to two feet or more, and if it can be let on or off at will in the course of a few hours during the season, it will prevent drought, or the worm, which are very destructive sometimes. The water should not stand on them when in blossom, or quite green fruit.

Varieties.—The best known and most extensively cultivated have been the Bell, of which there are two or three varieties. The Cape Cod Bell are the best known, and have been more extensively cultivated than any other variety. The colour is a dark red, but they often vary in colour and shape on different soils, but the bearing and ripening qualities are the same—good size and medium early.

The Bugle is an old variety, rather early; size, medium to large; good keepers; colour dark scarlet; medium bearers.

Cherry generally grows on wet soil or moist upland. There are a number of

varieties; the one most commonly planted is of medium size, round shape, and bright red colour; good bearers, but later than other varieties; a still later kind, larger, and late in colouring; another called Mottled Bell, pink on white ground; very handsome fruit, but late and little grown. Two new varieties have lately been introduced, which, by a number of years' cultivation, we find superior to the above in several particulars; early and constant bearers when others have failed, and in the future we shall not plant any other. The two last years we should have had a short crop but for these kinds.

The Eaton's Early Black Bell stands first; it ripens very early, and is fully coloured by the 5th September in New England; uniform in colour and shape, very handsome dark-red colour, almost black; medium and uniform size; great and constant bearers; good keepers; vines hardy; being early, they bring the highest price in the market.

Mansfield Creeper.—This was first discovered in a corn-field, and transplanted to a cranberry bed. In its new position it was found to be entirely different in its growth and habit from all varieties; it seemed to creep on the ground, and take root at every point, bearing shoots every two or three inches on the vine; and throws out fruit buds for a fresh start another year. It is a few days later than the Eaton Bell, both adapted to upland culture. It is of large size, and a great bearer; the flesh is more tender, not as acid; fine keeper; colour dark-scarlet on one side, the other side nearly white, with a slight mottle; shape roundish oval.

REPORT OF THE COMMITTEE APPOINTED BY THE FRUIT GROWERS' ASSOCIATION OF ONTARIO TO AID IN DIRECTING THE HORTICULTURAL DEPARTMENT OF THE ONTARIO SCHOOL OF AGRICULTURE AT GUELPH.

To the Honourable the Commissioner of Agriculture:

SIR,—The Committee appointed by the Directors of the Fruit-Growers' Association to aid in arranging and directing the operations in Horticulture and Forestry at the Government Institution at Guelph, beg to submit the following Report:

During the season the orchard of five acres of standard fruit trees planted last year has been extended so as to cover about seventeen acres, and a considerable portion of the spaces between the trees planted with small fruits. The fruit trees consist of the following varieties:—

APPLES.

10 Early Harvest.	10 Talman's Sweet.
5 Benoni.	10 Cox's Orange Pippin.
2 Tetofsky.	2 Fallawater.
2 Early Strawberry.	2 Jonathan.
5 Sweet Bough.	2 Baxter's Red.
10 Hawthornden.	2 Monmouth Pippin.
10 Chenango Strawberry.	2 Newtown Pippin.
20 St. Lawrence.	5 Peck's Pleasant.
10 Fall Pippin.	2 Canada Reinette.
25 Duchess of Oldenburg.	2 Rome Beauty.
10 Pomme Royal.	2 Smith's Cider.
8 Blenheim Orange.	2 White Winter Pearmain.
2 Sutton's Early.	2 Willow Twig.
20 Rhode Island Greening.	2 Bottle Greening.
20 Grimes' Golden.	5 Bailey's Sweet.
25 Swayzie Pomme Grise.	2 Calkins' Pippin.
20 Wagener.	2 Clarke's Orange.
2 Ohio Nonpareil.	2 Haas.
10 King of Tomkins County.	2 Jefferson.

Apples—continued.

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|----|--------------------------|----|-----------------------|
| 2 | English King of Pippins. | 10 | Wealthy. |
| 2 | Lord Burleigh. | 20 | Ribston Pippin. |
| 2 | Lyon's Dessert. | 10 | Mann Apple. |
| 2 | Mere de Menage. | 10 | Norton's Melon. |
| 5 | English Russet. | 5 | Stott's Russet. |
| 2 | Omar Pasha. | 2 | Black Detroit. |
| 10 | Shiawasse Beauty. | 50 | Northern Spy. |
| 2 | Cellini. | 2 | Rawle's Genet. |
| 2 | McIntosh Red. | 2 | Red Canada. |
| 2 | Wallbriege. | 5 | Seek no Further. |
| 2 | Addie. | 5 | Vandevere. |
| 2 | Eveline. | 2 | White Pippin. |
| 2 | Baxter. | 2 | Brabant Bellflower. |
| 10 | Keswick Codlin. | 2 | Bethel. |
| 10 | Red Astrachan. | 5 | Chebucto Beauty. |
| 2 | Yellow Transparent. | 2 | Capp's Mammoth. |
| 2 | Early Joe. | 2 | Flushing Spitzenburg. |
| 2 | Williams' Favourite. | 2 | Irish Peach. |
| 10 | Twenty Ounce. | 2 | Kingston Seedling. |
| 10 | Alexander. | 2 | Lord Derby. |
| 5 | Beauty of Kent. | 2 | Lady Hennicker. |
| 25 | Gravenstein. | 2 | Marquis of Lorne. |
| 2 | Jefferics. | 2 | New Hawthornden. |
| 5 | Maiden's Blush. | 2 | Morton's Red. |
| 2 | Hawley. | 2 | Peffer's No. 1. |
| 50 | American Golden Russet. | 2 | Minister. |
| 10 | Roxbury Russet. | 2 | Porter. |
| 10 | Yellow Bellflower. | 2 | Ackerman. |
| 20 | Baldwin. | 2 | Canada Baldwin. |
| 10 | Snow Apple. | 2 | Andrew's Favourite. |
| 2 | Perry Russet. | 2 | May. |
| 10 | Swaar. | 2 | Martha. |

PEARS.

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|---|-----------------------|---|-------------------------|
| 2 | Des Nonnes. | 5 | Tyson, |
| 5 | Beurré d'Anjou. | 2 | Mount Vernon. |
| 5 | Bartlett. | 5 | Flemish Beauty. |
| 5 | Goodale. | 5 | Dr. Reeder. |
| 2 | Bloodgood. | 5 | Brandywine. |
| 5 | Manning's Elizabeth. | 2 | Beurré de Waterloo. |
| 3 | Beurré Hardy. | 2 | Beurré Superfin. |
| 2 | Napoleon. | 2 | Buffum. |
| 2 | Doyenné Boussock. | 5 | Howell. |
| 2 | Paradise d'Autumn. | 2 | Paul Ambre. |
| 2 | Swan's Orange. | 5 | Beurré Clairgeau. |
| 2 | Beurré Diel. | 2 | Doyenné du Comice. |
| 2 | Jones' Seedling. | 2 | Glout Morceau. |
| 5 | Josephine de Malines. | 2 | Pound. |
| 2 | Pratt. | 2 | Rutter. |
| 2 | Brockworth Park. | 2 | Dearborn's Seedling. |
| 2 | Ananas d'Eté. | 2 | Duchess de Berri d'Eté. |
| 2 | Doyenné d'Eté. | 2 | Elliot's Early. |
| 2 | Prince Albert. | 2 | Pitmaston Duchesse. |

PLUMS.

10 Lombard.		2 Duane's Purple.	
2 Bradshaw.		2 Coe's Golden Drop.	300
2 Fellenburgh.		2 German Prune.	500
2 General Hand.		5 McLaughlin.	100
5 Imperial Gage.		2 Lawrence's Favorite.	100
2 Yellow Egg.		2 Munroe.	100
2 Orange Egg.		2 Smith's Orleans.	500
2 Peter's Yellow Gage.		2 Gueii.	100
2 Prince Englebert.		2 Victoria.	100
2 Washington.		2 Denniston's Superb.	100
5 Hudson River Purple Egg.		2 Peach Plum.	12
2 Quackenboss.		1 Goderich.	
1 Evans.		1 McGill's Seedling.	
2 Mill's Seedling.		2 Ontario.	1400

CHERRIES.

5 May Duke.		2 Elton.	
2 Tradescant's Black Heart.		3 Olivet.	100
2 Downer's Late Red.		2 Coe's Transparent.	100
2 Knight's Early Black.		2 White French Guigne.	100
2 Yellow Spanish.		2 Gridley.	100
2 Monstreuse de Mezel.		2 Rockport Bigarreau.	200
2 Carnation.		10 Early Richmond.	
2 Empress Eugenie.		2 Late Duke.	
2 Montmorency Ordinaire.		2 English Morello.	
2 Reine Hortense.		2 Norton's Seedling.	
2 Lieb.			

In all, these number—of apple trees 678, pear trees 112, plum trees 70, and cherry trees 54. Among the fruit trees of last year's planting, there were planted the following small fruits:—

GOOSEBERRIES.

100 Downing's Seedling.		100 Houghton's Seedling.	25
100 American Seedling.		100 Smith's Improved.	200

400 in all.

RED AND WHITE CURRANTS.

200 Fertile de Pallou.		25 Cherry.	3
100 Versailles.		25 Red Dutch.	12
50 White Grape.		25 London Red.	10
25 Red Grape.		50 Victoria.	2

In all 500.

BLACK CURRANTS.

100 Black Naples.		100 Lee's Prolific.	10
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In all 200.

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RASPBERRIES AND BLACKBERRIES.

300 Cuthbert.	200 Brandywine.
500 Philadelphia.	100 Highland Hardy.
100 Herstine.	100 Thwack.
100 Turner.	200 Clarke.
100 Franconia.	200 Gregg.
500 Mammoth Cluster.	100 Davison's Thornless.
100 Doolittle Black Cap.	100 Ontario.
100 Niagara.	100 Saunders' Hybrids.
100 Reliance.	100 New Rochelle.
12 Caroline.	

In all 3,112 plants.

STRAWBERRIES.

1400 Crescent Seedling.	200 Sharpless.
200 Monarch of the West.	200 Captain Jack.
500 Jucunda.	100 Glendale.
200 Triomphe De Gand.	100 Kentucky.
100 Nicanor.	200 Charles Downing.
100 Mount Vernon.	100 Cumberland Triumph.
100 Great American.	100 Mary Fletcher.
100 Alpha.	100 Maggie.
100 Arnold's Pride.	100 Bright Ida.
200 Early Canada.	

4,200 plants in all.

VINERY.

A very eligible location has been selected for a vinery on the crest of the hill at the back of the College buildings, and sloping down towards the south; the soil is very suitable, and the aspect all that could be desired, and when completed, and the vines have attained some growth, the vinery will present a very handsome appearance from the back of the College grounds and buildings. Herewith is a list of the vines which have been planted:—

25 Burnet.	25 Moore's Early.
200 Concord.	50 Delaware.
25 Massasoit.	25 Wilder.
12 Agawam.	12 Salem.
5 Barry.	5 Gaertner.
5 Herbert.	12 Lindley.
5 Merrimac.	5 Senasqua.
6 Martha.	3 Hartford Prolific.
10 Champion.	3 Eumelan.
3 Israella.	3 Iona.
12 Creveling.	3 Early Dawn.
10 Brighton.	50 Clinton.
2 Canada.	3 Brant.
2 Amber Queen.	2 Black Hawk.
2 Alvey.	2 Croton.
2 Cuyahoga.	2 Elvira.
2 Ives' Seedling.	2 Lady.
2 Munroe.	2 Telegraph.
10 Worden.	1 Duchess.
1 Rochester.	1 Lady Washington.
1 Jefferson.	1 Prentiss.
2 Pocklington.	1 Walter.
1 Black Eagle.	2 Rogers' No. 30.
1 Maxatawny.	1 Eva.
2 Vergennes.	1 Pearl.

To which may be added three of Mr. Dempsey's new hybrids, presented by him for the purpose of having their value tested in this locality—1 No. 4, 1 No. 18, and 1 No. 25. In all 567 vines.

FORESTRY.

In this department, also, the Committee have laboured to lay a good foundation both by forest planting during the season, and by securing such portions of material as could be obtained in advance for next year's planting. All failures in clumps of Black Walnut planted last year have been replaced, also those in the plantation of European larch; besides which, four additional clumps have been planted of about half an acre each, all in such situations as will permit of their serving a double purpose, either as shelter or ornament, or for the hiding of unsightly buildings. These consist of a clump of Butternut, one of Sugar Maple, one of Ash—European and American—and one of mixed forest trees, such as Ash, Elm, Hickory, Larch and Walnut.

We have also secured and had planted in rows, in a nursery bed, a considerable number of trees of the following varieties: Hickory, White Oak, Birch, Beech, Black Spruce, Hemlock, Arbor Vitæ, Native Larch or Tamarack, Native Pine; also an additional quantity of Sugar Maple and European Larch. All this young stock will be available for planting during the next and succeeding years, and the Committee hope and expect that by thus anticipating future wants in this direction, and providing a sufficient quantity of suitable young trees, well grown in nursery rows, with good roots, to obtain more successful results in forest planting than heretofore, the young growing trees in the meantime affording a means of instruction to the young men who have the charge of them.

ARBORETUM.

This important and instructive section of Arboriculture in connection with the College grounds has received large additions during the past year—so large, indeed, that the ground set aside for this purpose has been filled, and some additional space will now be required for the continuance of this very important educational feature in connection with the College. It is the purpose of the Committee to continue to add to the arboretum until it shall contain a specimen, properly labelled, of every tree and shrub which will grow in this locality. The following have been planted during the past season, one specimen of each sort:—

Euonymus Europeus.	Nettle Tree, Australian.
Hybiscus Syriacus carnea pleno.	“ “ American.
“ “ Alba flore pleno.	Pawlonia Imperialis.
“ “ purpurea fl. pl.	Paul's Scarlet Thorn.
“ “ foliis variegata.	Double Pink Thorn.
“ “ Lady Stanley.	Ailanthus glandulosa.
Exochorda grandiflora.	Ash, American.
Itea virginica.	“ Acuba-leaved.
Kerria Japonica.	“ Golden barked.
Ligustrum Japonica var.	“ Jaspidea.
Lonicera Alba grand.	“ Walnut-leaved.
Rhus cotinus.	“ Willow-leaved.
Philadelphia coron. Zeyheri.	“ Spectabilis.
Spirea Ballardii.	“ green.
“ Douglassi.	Akebia quinata.
“ opulifolia aurea.	Wistaria frutescens.
“ Salicifolia.	“ Japonica.
Mountain Ash, oak-leaved.	“ magnifica.
New American Mulberry.	“ multijuga.

Wistara Sinensis.
 " " alba.
 Retinospora obtusa.
 " pisifera.
 " squamosa.
 Callicarpa purpurea.
 Corylus purpurea.
 Acer spicatum.
 " Tartaricum.
 Acacia julibrissin.
 Viburnum sterilis.
 Linden, cut-leaved.
 Magnolia glauca.
 Maple colchicum.
 " Hance's variegated.
 " Oregon.
 " purple-leaved Sycamore.
 " striped Bark.
 Osage Orange.
 Willow, white.
 " ring-leaved.
 " purple.
 Aralia Japonica.
 Spanish Chestnut.
 Cypress, Chinese Weeping.
 " deciduous.
 " new weeping.
 Dogwood, white flowered.
 Elm, pyramidal.
 Linden, American.
 Box, Handworthi.
 " sempervirens.
 Willow, royal.
 " Salamon's.
 Arborvitæ, pyramidal.
 " globe.
 Juniper, prostrate.
 " Sabina.
 " ericoides.
 Spruce, Engleman's.
 " Menzies'.
 Clethra alnifolia.
 Cornus mas.
 " " variegated.
 Alder, cut-leaf.
 " maritima.
 Amelanchier botryapium.
 Anona triloba.
 Birch, lenta.
 " poplar leaf.
 " red.
 " paper bark.
 " yellow.
 " purple.
 Carya alba or Hickory nut.
 " aquatica.
 " microcarpa.

Carya porcina.
 " sulcata.
 " tomentosa.
 " amara.
 " olivæformis.
 Fraxinus, heterophylla.
 " Theophrasta.
 " platycarpa.
 " quadrangulata.
 " sambucifolia.
 " excelsior.
 " Americana.
 Magnolia acuminata.
 " glauca.
 Negundo fraxinæfolia.
 Platanus occidentalis.
 Pyrus laciniata.
 Populus alba.
 " monilifera.
 " angulata.
 " augustifolia.
 " Empress Eugenie.
 Quercus nigra.
 " obtusiloba.
 " palustris.
 Andromeda arborea.
 Aralia spinosa.
 Catalpa bignonioides.
 " nana.
 " speciosa.
 Celtis occidentalis.
 " pumila.
 Cercis Canadensis.
 " siliquastrum.
 Cerasus padus.
 " Virginica.
 " double-flowering Chinese.
 " Carnea plena.
 " ranunculæflora.
 Gleditschia horrida.
 Gymnocladus Canadensis.
 Juglans cinerea.
 Kolreuteria paniculata.
 Laurus sassafra.
 " benzoin.
 Liquidambar styracifera.
 Liriodendron tulipifera.
 " integrifolia.
 Morus rubra.
 " Downing's.
 Ostrya Virginica.
 Quercus alba.
 " aquatica.
 " bicolor.
 " Bannisteri.
 " cinerea.
 " coccinea.

Quercus imbricaria.
 " *lyrata.*
 " *macrocarpa.*
 " *prinus.*
 " *rubra.*
 " *robur.*
 " *tinctoria.*
Salix alba.
 " *annularis.*
 " *caprea.*
 " *candida.*
 " *discolor.*
 " *Forbyana.*
 " *Japonica.*
 " *myricoides.*
 " *pentandra.*
 " *Russelliana.*
 " *rosmarinifolia.*
 " *Villarsiana.*
 " *vitellina.*
Cotoneaster vaccillar.
 " *floribunda.*
 " *obtusa.*
 " *acuminatus.*
 " *buxifolia.*
 " *frigida.*
Crataegus oxycanth. variegata.
 " " *Douglassii.*
 " " *rubra splendens.*
 " *crus-galli.*
 " *apiifolia.*
 " *cordata.*
 " *flava.*
Hydrangea quercifolia.
 " *flavescens.*
Hypericum ascyron.
 " *prolificum.*
 " *Kalmianum.*
Magnolia Soulangeana.
Salisburia adiantifolia.
Staphylea trifolia.
Sophora Japonica.
Tamarix tetrandra.
Tilia Americana.
 " *Europea aurea.*
 " *heterophylla.*
Ulmus montana.
 " *fastigiata.*
Zanthoxylum fraxineum.
Andromeda mariana.
 " *racemosa.*
Amygdalus nana, pink.
 " *white.*
Azalea viscosa.
Ceanothus Americana.
Cephalanthus occidentalis.
Colutea arborescens.

Cornus alternifolia.
 " *paniculata.*
 " *sericea.*
 " *stricta.*
Deutzia, Pride of Rochester.
Eleagnus flava.
 " *parvifolia.*
Euonymus, European var.
 " *Americanus.*
Hamamelis Virginica.
Halesia tetraptera.
 " *Meehani.*
Lonicera orientalis.
 " *Philomela.*
 " *Sibirica.*
 " *xylosteum.*
Ligustrum buxifolium.
 " *myrtifolium.*
Myrica cerifera.
Pavia macrostachya.
Philadelphus Gordonianus.
 " *Columbianus.*
 " *tomentosus.*
 " *Keteleeri.*
Pyrus Japonica, white.
 " " *variegata.*
 " " *cardinalis.*
 " " *semiplena.*
 " " *malus prinos.*
 " " *floribunda.*
Ribes Utah, blue.
 " " *black.*
 " " *yellow.*
 " *Floridum.*
 " *Gordoni.*
 " *Sanguineum albidum.*
Syringa Vulgaris, purple.
 " " *white.*
 " " *rubra insignis.*
 " " *Dr. Stockhardt.*
 " " *vallettiana.*
 " " *double purple.*
 " *Gloire de Moulins.*
 " *Persica.*
 " *oblata.*
 " *Princess Mariae.*
Weigelia multiflora.
 " *Groenwegeni.*
Weeping Cherry.
Biota orientalis.
 " *aurea.*
Ilex opaca.
Juniperus suecica.
 " *Virginiana.*
Kalmia latifolia.
Ligustrum ovalifolium.
 " *Stauntoni.*

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Prunus umbellata.	Andromeda calyculata.
" Americana.	Euonymus radicans, variegated.
" Chicasa.	Genista scoparius.
Ptelea trifolia.	Juniperus communis.
Rhus copallina.	" occidentalis.
" glabra.	" Sabina.
" typhina.	Kalmia angustifolia.
" trilobata.	Pinus Benthamiana.
Rhamnus Caroliniensis.	" Lambertiana.
" frangula.	" mugho.
Rosa rubiginosa.	" pungens.
" rugosa.	" ponderosa.
Robinia hispida.	" strobis.
Spiraea aurea.	Thuya ericoides.
" carpinæfolia.	" Geo. Peabody.
" crinita.	" glauca.
" chamadræfolia.	" spiralis.
" Indica.	Highland Juniper.
" nobleana.	Pinus inops.
" Regeliana.	" laricis.
" sorbifolia.	" mitis.
" Thunbergi.	" pinaster.
" vaccinæfolia.	" rigida.
Vaccinium corymbosum.	Podocarpus Japonica.
Viburnum acerifolium.	Thuya gigantea.
" lentago.	" Hoopesii.
" nudum.	" pumila.
" prunifolium.	" Tartaricum.

MISCELLANEOUS.

The following have also been secured and planted in rows, from which they may at any time be transplanted to any location where they may be required: For hedge plants, 1,000 two-year-old Barberry plants; 1,000 one-year-old Buckthorn; 100 two-year-old Buckthorn; 1,000 two-year-old Honey Locust. Also

20 Cannas.	100 Gladiolus, mixed.
12 Iris, new sorts.	12 Tuberous Rooted Begonias.
50 Hardy Herbaceous Plants.	100 Hardy Herbaceous Phloxes and Peonies.
25 Hybrid China Roses.	1 English Honeysuckle.
1 Clematis Erecta.	2 Japan Honeysuckles.

The results of the planting this year have on the whole been very satisfactory, and while there have been some failures, they are few as compared with the total amount of material planted.

FUTURE OPERATIONS.

During the coming spring your Committee propose to replace all failures, continue and extend the forest planting, make additions to the arboretum and ornamental department, extend the orchard, and, if possible, complete the shelter belts for the protection of the young trees. Before the orchard and shelter belts can be completed, it will be absolutely necessary that an acre of land, which now makes a most unsightly break in the middle of the orchard, be purchased. This land is not put to any use by the owner, and has become a general distributing point for weeds, and is most unsightly in every way. To carry out the planting for next season we shall require a further grant of \$300.

We take pleasure in acknowledging the cordial assistance which has been rendered

us by the Principal (Prof. Mills), the Professor of Agriculture (Prof. Brown), and to the able and painstaking manner in which the Head Gardener, Mr. Forsyth, has discharged the onerous duties devolving upon him.

All of which is respectfully submitted.

P. C. DEMPSEY.
W. M. SAUNDERS.
D. W. BEADLE.

SMALL FRUIT CULTURE.

By B. GOTT, ARKONA.

It is a task not easily defined to state with precision just which kind of soil is positively best for the different classes of small fruits. We doubt not that different results will be obtained by planting the same fruit on different soils, and much more different by planting different fruit on different soils; but to say exactly which is the best for obtaining the best results is a question for scientific and superior investigation. At a former period in our experience, we most decidedly held the opinion that a fine, strong, well-drained sandy loam, rich in vegetable ingredients, and not too loose, was the best possible condition of soil for strawberries and raspberries; but later on in our course of fruit culture, and as our observations widened in these matters, our opinion came gradually to a wide and material difference of caste, and now we strongly lean to a preference for a strong and well-drained clay loam for both these fruits, if not too much condensed.

One of our local growers has a small fruit farm established on just such a description of soil as this last, and the results of his plantings are all that could be desired—plenty of fruit, and of fine quality. If there is any advantage in favour of the sandy loam for small fruits, it may be on the score of wintering; for on this soil the plants do not appear so liable to frost and heaving as on the clay soil. The flavour, too, may be very much finer in fruits from sandy soil, but we most emphatically deny that the fruit may be either more or of better quality. Any of our clay loams, therefore, of proper texture, and if thoroughly and systematically drained, are clearly suitable for the successful growth and development of small fruit plants and of the finest possible quality of fruit.

With these preliminaries we will at once proceed with our subject in hand, viz.: Character of Soil for Small Fruits; Its Preparation, Culture, etc. By small fruits we shall at present understand to be meant our popular berries, as strawberries, raspberries, blackberries, gooseberries, and currants; and for their successful culture we shall prefer a medium clayish loam, of a dark colour and a crumbly texture, and very rich in vegetable matters in composition, and laying on a solid clay subsoil at the depth of from twelve to twenty inches from the surface.

We would prefer the surface to be nearly on a level, or, at the most, with merely gentle slopes to prevent severe washing from heavy and frequent rains. The whole must be thoroughly underdrained, by laying at systematic distances hard-burnt clay tile, two inches in diameter in the bore, and from two to three feet under the surface. These drains should not be more than twenty or thirty feet apart, according to the dryness or wetness of the soil, and the whole laid with a careful reference to a good and efficient outlet. The mode of preparation consists in thoroughly cleansing the ground of all annoyances, as stumps, stones, sticks, etc., as impediments to the easy progress of the plough and the cultivator. Before the planting is done the ground must be thoroughly broken up to a depth of ten or twelve inches by good ploughing and subsoiling, and after cultivation during the entire summer. For the soil I am now describing being in a virgin state and unexhausted, very little application of artificial fertilizers is required; but if the ground is worn out, or in the least depleted of its vegetable fertility, those artificial stimulants must be most certainly applied with unsparing liberality. This application, in the main, must be made during the workings of the summer months.

The after culture consists, in the main, of a thorough and constant moving and stirring of the soil to prevent the effects of summer drouth and the progress of the least tiny weed. This point—the eradication of all weeds—must be most assiduously attended

to from the beginning, and the success of the whole operation mainly depends upon the efficiency of this part of the work. Do not consider the weeds merely in the light of a curse, but rather as a blessing in disguise, and go at them with a settled determination of will. In the culture of strawberries for market, the planting is generally proceeded with in the following manner:—The ground being, as described, thoroughly prepared, is then marked off in distances of three or four feet apart, entirely across the field, and the plants set in those rows $1\frac{1}{2}$ feet apart. The season for doing this is as early as the ground can be profitably worked in the spring of the year. You have now your field nicely set with plants, at regular distances 2 x 3 feet apart, or 7,260 plants to the acre. The first season nothing is to be done but thorough cultivation and cleaning, and nothing is to be expected of them but to grow out, occasionally directing the young plants where to root as the runners push out. The object is to cause the young plants as much as possible to root in the rows, and there mass up; and keep the spaces between clear for cultivation and gathering the fruit. In this system scarcely any fruit is matured the first year; but in the second year a very large and heavy crop is the result of thorough and patient care, and will amply reward all the labour and expense incurred. This method is continued two or three or more years, according to circumstances, and the whole is then ploughed up and planted with some other crop, or the ground is thoroughly manured and again planted with the same fruit.

For planting in the hill system the ground is marked off 3 x 3 feet, or 4,840 hills to the acre, and the plants are carefully set at the crossings in the shape of a triangle, three plants to a hill. This makes a very nice plantation, and is carefully and thoroughly kept, cultivated, and cleaned from all weeds, and the runners scrupulously kept closely off. In this way, large and fine masses of fruit are matured the second year in large clusters around the hills. This system is much more expensive than the first, and nothing but constant watchfulness and labour can expect to be successful with it. The hills must be underlaid with straw as the fruit is ripening, to prevent it being damaged by contact with the neighbouring earth, and so making it unfit for use. Both of these systems of strawberry-culture have their stern advocates; but we greatly prefer the first, as it seems more practicable for general field culture in a country like this, where every item of labour is intensely expensive.

For raspberries, gooseberries and currants, the land is prepared as before, and marked off 3 x 6 feet, or 2,620 plants to an acre, and the young plants placed in the crossings. The matter of planting raspberries is very simple and easy, and consists in merely placing the young plants, previously prepared, in their places with a spade and tramping them firm. The planting of gooseberries and currants, however, requires much more labour and care, as the plants used are fine, thrifty, two-year-old plants, and have plenty of long fibrous roots that must be carefully placed as the planting goes on. Careful and constant cultivation must not be neglected, and regular prunings must be attended to. Blackberries are planted as raspberries, but the distance apart for the plants must be far greater, or 6 x 6 feet, being 1,210 plants to an acre. For this fruit, being so rampant and irresistible in its growth, constant and systematic prunings are necessary, and cannot be dispensed with for a season. If this is not attended to, neither cultivation nor fruit-gathering can be proceeded with with safety or profit. In a former paper on small fruits I have sufficiently indicated the varieties of these fruits preferable for the purpose of planting. I have, therefore, now nothing further to do in this paper than to throw out some hints on the profitableness of small-fruit culture and the condition of the market.

The demand for small fruits is annually increasing in most of our respectable country markets, and the difficulty of disposing of a fine crop of fruit is annually decreasing. It is this demand in the market that regulates the price of small fruits, as of every other commodity, and consequently determines the question of its profitableness. If a large crop of small fruit, as of anything else, is put upon a flush market, the profit side of the account sinks; but if the same crop can be put upon a keen market, the balance rises in grateful proportions. Again, the question of profitableness is determined by the method of culture, the nature of the soil, its location, etc., the skill in management, and the economy of gathering and marketing the crop.

By this it will easily be seen that the question of product is not by any means the

only question in the profitableness of the crop. In all cases where the business is studiously and intelligently followed on from year to year, with perseverance, good judgment, and favourable circumstances, small fruit culture is universally found to pay, and amply pay, the painstaking cultivator. Let none, therefore, be discouraged in their attempts, but wherever good, sound taste for the business exists, accompanied by a small amount of capital at command, and a moderate amount of experience, any one may engage in it with an absolute certainty of being well repaid for their outlay in this direction.

FRUIT REPORT FOR SECTION NO. 4.

This Section consists of Lennox and Addington, Prince Edward, Hastings, Northumberland and Durham, nearly all of which are tolerably good for "general fruit-growing"—probably the most favoured sections are the counties of Prince Edward and East Northumberland. Very large quantities of strawberries are annually shipped from here, principally to Montreal. The following varieties for market are the favourites here:—Wilson's Albany, Crescent Seedling, and Sharpless. The Captain Jack, New Dominion, and some of Arnold's varieties, are promising well, but have not yet been thoroughly tested here. Large quantities of raspberries are also shipped from here; the most prolific bearer is the Philadelphia Red, but rather soft for market; the Clarke, Herstine, Queen of the Market, are not so prolific, but better for market.

Black Raspberries.—Mammoth Cluster, Davidson's Thornless, Gregg, and Doolittle, do well on loamy soil.

Currants.—The varieties that succeed best here are Red Cherry, La Versailles, and White Grape. Among black currants the Black Naples is most popular.

Gooseberries.—Houghton's Seedling and Smith's Improved succeed best.

Cherries.—A number of varieties, but the Early Richmonds are most successful.

Grapes.—A large variety of grapes are grown, principally the Concord, Delaware, Burnet, Brighton, and a number of Rogers' Hybrids. The newer varieties are being tested, some of which look very promising, particularly the Pocklington.

Plums.—The cultivation of plums in this section is at a discount, owing to the curculio and rotting of the fruit. Lombards, Smith's Orleans, Imperial Gage, Pond's Seedling, are all good on heavy clay.

Pears.—The cultivation of pears is very uncertain, owing to the fire blight, many hundreds having been ruined during the last two years: Clapp's Favourite, Manning's Elizabeth, Bartlett, Beurre Hardy, White Doyennè, Beurre Bosc, Beurre d'Anjou, Josephine de Malines, Lawrence.

Apples.—The region within a few miles of the Bay of Quinte as an apple-growing country is notably unsurpassed. The following varieties are found most valuable for market purposes:—Red Astrachan, Early Harvest, Duchess of Oldenburg, St. Lawrence, Colvert, Alexander, Northern Spy, Baldwin, Rhode Island Greening, Golden Russet, Roxbury Russet, King of Tompkins County, and Ben Davis. The following new varieties are doing well:—Wealthy, Ontario, Dora, Ella, Arnold's Beauty, Peewaukee, Winter St. Lawrence, and Cox's Orange Pippin.

It is impossible to ascertain the quantity of fruit shipped from this section, but many thousands of barrels are shipped annually to British and foreign markets. The following is as nearly correct as possible, viz.:—

Small fruit, for 1880.....	50,000 quarts.
“ “ “ 1881.....	200,000 “
Plums “ “ 1880... ..	5,000 bushels.
Pears “ “ “	2,000 barrels.
Apples “ “ “	150,000 “

For the present year, with the exception of small fruits, the crop will be much short of last year. The apple crop of 1881 is only about 25 per cent. of that of 1880.

REPORT FROM DIVISION NO. 5.

In accordance with a resolution passed at a meeting of the "Board," at Owen Sound, and in conformity with your notice of the 6th inst., I submit the following Report on Fruits, etc., for the Fifth Agricultural Division of the Province:—

The strawberry crop was unusually good in the northern part, and a good average in the southern part of the division. Prices ranged from 15 cents to 8 cents per quart. Contracts were made with some of the larger growers for 8 cents for the whole crop. The Wilson is almost the only strawberry grown here, and so long as this variety continues to produce such excellent crops of large, luscious and beautifully coloured berries, people will be slow to speculate with new varieties. From a large lot ready for the market, I selected five baskets, and found them to contain an average of sixty-eight (68) berries to the basket.

Raspberries were less than an average crop. The canes—where I had an opportunity of observing them—seemed to lack vigour; they bloomed freely; but the fruit did not set well, and, when ripe, was much smaller than usual. Probably the extremely low temperature of the air in January last may have so weakened the canes as to prevent the fruit setting freely. The kinds generally grown here are the Philadelphia, Brinkle's Orange, and the Mammoth Cluster. The kinds distributed by the Association have not yet become favourites. The light-coloured one (I have forgotten its name) which was sent out about four years ago promised well for the first two seasons, but during the last two seasons it has not fruited as well as the older varieties. The berries were lighter-coloured than Brinkle's Orange, a little larger, and much finer in flavour. The canes, too, were much more productive at first. There was no fruit this season, although the canes seemed healthier than the Philadelphia or the Brinkle's Orange growing near by.

The purple one, one of Mr. Saunders' hybrids, is disliked because of its colour, and also because the berry crumbles so badly while being gathered.

The one distributed in the spring of 1880 is generally reported as making an unusual growth of wood. It has fruited satisfactorily with some persons. I have not yet seen the fruit.

Currants of all kinds, red, white, and black, did well, the crop being above the average.

Gooseberries never fail altogether in this section, and this year the crop has been very good. The kinds generally grown are Houghton's Seedling and Downing. A few persons grow the English Whitesmith, but this variety does not withstand the peculiar treatment usually accorded to gooseberry bushes by most growers in this locality, and is therefore not a general favourite. The practice here is to gather the fruit as soon as the caterpillars have destroyed the foliage, which will be when the Houghton and Downing berries are about the size of large peas. Such fruit sells readily in this market at from 6 cents to 7 cents per quart, the bushes being allowed to remain without a leaf until the following spring. What wonderful vitality these two kinds must possess to endure such treatment year after year, and continue to yield a fair crop! The Whitesmith, which usually does so well in our rich clay soil, yielded rather below the average this year. It sold readily at from 12 cents to 15 cents per quart.

Pears.—There are but few bearing trees in this neighbourhood, but the quantity produced this season was above the average. A considerable number of pear trees have been planted in this vicinity during the past ten years. Most of them, however, have died, as they were varieties unsuited to this soil or climate. The Flemish Beauty and Clapp's Favourite succeed well, and so will—possibly—a few other varieties; but the present prospects are, that the number of the varieties will be few.

In the southern part of this division, where the pear has hitherto been more successfully grown, the crop was below the average; but the quality—judging by the exhibits at the Cobourg Show Fair made by Mr. Ramsay, Mr. M. Evers, and several others—was equal to the best exhibited at the Provincial Fair. Some 25 or 30 varieties were on the tables, and nearly all first-class samples. Louise Bonne de Jersey, Beurre Gris de Hiver, Beurre Clarigeau, Glout Morceau, Josephine de Malines, Flemish Beauty, Howell,

Duchesse d'Angouleme, White Doyenne, Beurre Hardy, Buffum, Beurre Bosc, Seckel, Lawrence, Easter Beurre, Winter Nelis, Vicar of Winkfield, and many others were exhibited there.

The apple crop throughout this district was below the average, but the samples exhibited at all the fairs were unusually fine. After making inquiries from all parts of this Division, I am pleased to be enabled to add that the codlin moth has done less injury during the past summer than for several previous seasons.

Plums throughout this district have been nearly a total failure. One report from the eastern side of the district gives promise of a "good time coming." Mr. Johnson, of Campbellford, has about 100 plum trees. These trees (like all the plum trees in this section) blossomed freely. Observing great numbers of curculios on the trees at this time, he determined to experiment on a small scale by dusting a few of the trees with air-slacked lime. He selected five trees—two Lombards, one McLaughlin, one Imperial Gage, and one Peach plum. A good sprinkling was applied about the time the bloom was falling. The dose was repeated in about two weeks, and again about two weeks from the time of the second application. The result was, that from these five trees he gathered sufficient fruit for the use of his family, and sold thirteen pails of plums. From the remaining ninety-five trees of the same and similar kinds, and all about the same age, he did not get one bushel.

If the Wealthy apple tree succeeds as well generally as the one Mr. Morris, of Fonthill, sent me two years ago, the Fruit-Growers' Association of Ontario will deserve the thanks of the whole community for disseminating it last spring. This tree of mine, planted in May, 1880, bore several apples this summer. The fruit resembled the Snow Apple in appearance. It was about the same size; rather more round; but the colour was not so brilliant; the flesh was altogether different. It was yellow in colour, of fine texture, with a flavour resembling that of the Spitzenburg. Judging from the experience I have had, I think the tree will very quickly supersede the Snow Apple. It seems perfectly hardy.

All of which is respectfully submitted.

THOS. BEALL.