

REPORT

OF THE

Fruit Growers' Association

OF THE

PROVINCE OF ONTARIO

FOR THE YEAR

1878.

Printed by Order of the Legislative Assembly.



Toronto

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ANNUAL REPORT
 OF THE
 FRUIT GROWERS' ASSOCIATION
 OF THE
 PROVINCE OF ONTARIO,
 FOR THE YEAR 1878.

To the Honourable the Commissioner of Agriculture.

SIR.—I have the honour to transmit herewith the Report of the Fruit Growers' Association of Ontario for the current year.

You will be gratified to perceive that the Association continues its work with unabated zeal, and that it is improving every means within its power for the gathering and disseminating of useful information concerning the cultivation, gathering, preserving and marketing of the Fruits of Ontario.

The Directors have this year ventured to carry out a long contemplated and much cherished purpose which they have been fully persuaded would be most conducive, nay, absolutely necessary, to the highest efficiency of this Association, namely, the issuing of a monthly, which would bring interesting intelligence or instructive hints more promptly to the knowledge of our fruit growers and horticulturists, and serve as a medium of communication between the members. There is reason to believe that this action has been very acceptable, and that the Little Monthly, which has been designated by the title of *The Canadian Horticulturist*, has been most heartily welcomed.

It has been found that the system adopted by the Legislature enjoining the election of a Director from among the members resident within each Agricultural division, has very materially increased the expense of holding the Directors' meetings, and that in consequence of this and of the expense incurred in publishing the *Horticulturist*, the Association has exhausted its revenues and is very considerably in debt. The Directors therefore hope that you will request Government to recommend to the Legislature at its present Session to grant a further sum in aid of the objects of this Association.

The past year has not been on the whole an unfavourable one to the fruit interests of this Province. The crops of small fruits, though somewhat injured by the late spring frosts, proved to be bountiful, and the apples sufficiently abundant and of excellent quality. Canadian apples have compared favourably in the home markets with those from the United States, and have brought remunerative prices to shippers who have made careful selections

and put up strictly first-class samples. Orchards that have come into bearing have generally yielded such satisfactory returns that more trees have been planted, and such has been the increased planting of orchards for commercial purposes that it is apparent our fruits will soon become an important part of our products, a source of wealth to the Province, and a valuable item of export.

Thanking you for the interest you have ever manifested in the welfare of this Association and the liberal and enlightened encouragement given to all its efforts to promote the fruit growing interests of Ontario.

I have the honour to be,

Your most obedient servant,

D. W. BEADLE,

Secretary of the Fruit Growers' Association of Ontario.

PROCEEDINGS AT THE ANNUAL MEETING.

The Annual Meeting was held in the Agricultural Hall, Yonge Street, Toronto, on the Evening of the 23rd day of September, 1878.

The President took the Chair and called the meeting to order. The Secretary read the minutes of the last annual meeting.

The Directors submitted their annual Report.

DIRECTORS' REPORT.

Your Directors take much pleasure in being able to state that during the past year there has been continued interest manifested in the operations of the Association by the members, and that the meetings have been very interesting and, we believe, productive of good results. The winter meeting was held at Hamilton, in February, the summer meeting at St. Catharines, and the autumn meeting at Sarnia.

This year has been marked by a new feature in the work of the Association. It has for a long time seemed to be very desirable that we should have some medium of intercourse between the members on horticultural subjects, more frequent than the annual Report, something that would present as often as once a month topics of interest to our membership, and become a record of our progress. After careful deliberation your Directors decided to issue a monthly serial of sixteen pages, devoted to the interests of this Association. The ninth number is already in your hands, and we hope you have found this publication a welcome visitor at your homes. It is not intended to supply fully the place of the annual Report, but to place more promptly before you information that has hitherto been obliged to remain until the close of the year.

In the spring we caused the Burnet Grape to be sent to all the members, and have reason to believe that the plants were carefully put up and mailed, and trust that this variety will prove a decided acquisition to our list of grapes.

This has been the first year of our history under the provisions of the Act confining our representation in the directorship to that of the Agricultural Association. As was to be expected this change has added to the expense of attendance upon the meetings of the board, and this, together with the increased expenditure incident to the publication of our monthly, has more than absorbed the means at our command. (We trust that in as much as this increased expense is largely due to the passage of the new Act our Legislators will see the propriety of soon adding to our annual grant.)

We have to lament the death of one of the members of the board. Francis Hansford Hora, died at his residence, near Kingston, on the 4th of May last. Deeply interested in promoting the objects of this Association, it was a pleasure to him to do all that he could to help on the work of gathering and disseminating information on the subject of fruit culture.

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His seat at the board became thus vacant before the expiration of his term, and his colleagues have been compelled to finish the year without his excellent counsel and assistance.

Another prominent member and former Director, Mr. John Freed, of Hamilton, has been called away by death. Of his many services in the cause of Pomology and Horticulture there is not time to speak. His works live after him. We can only close up our broken ranks and press on; time flies, "and soon the night cometh in which no man can work."

All of which is respectfully submitted,

R. BURNET,

President.

The Treasurer submitted his Report which was received and it having been duly audited, was referred to the Directors.

The President then read his annual address, which, like its predecessors, is replete with useful information. It was received with thanks, and ordered to be printed in the annual Report.

The meeting then proceeded to the election of Officers for the year. On motion of P. C. Dempsey, seconded by W. McKenzie Ross, Rev. R. Burnet was unanimously chosen President.

On motion of W. Saunders, seconded by P. E. Bucke, Wm. Roy, Esq., of Owen Sound, was unanimously elected Vice-President.

A Committee having been struck to nominate a Director from each Agricultural Division, on the bringing in of their report the meeting proceeded to consider it by divisions, and elected the following gentlemen to serve as Directors for the year, namely:—

No. 1. John Croil, Aultsville; No. 2, P. E. Bucke, Ottawa; No. 3, R. J. Cartwright, Kingston; No. 4, P. C. Dempsey, Albury; No. 5, Thos. Beal, Lindsay; No. 6, Geo. Leslie, Jr., Leslie; No. 7, Wm. Haskins, Hamilton; No. 8, A. M. Smith, Drummondville; No. 9, Chas. Arnold, Paris; No. 10, A. McD. Allan, Goderich; No. 11, W. Saunders, London; No. 12, Joshua Adams, Sarnia; No. 13, Henry Robertson, Collingwood.

On motion of W. Holton, seconded by Col. John McGill, Robert Roy and Angus Sutherland, of Hamilton, were appointed Auditors.

TREASURER'S REPORT.

RECEIPTS.

Balance from last year.....	\$ 332 56
Members fees from London, less commission, in 1877....	8 10
Members fees in 1878.....	1,497 00
Advertising in Canadian Horticulturist.....	20 00
Government Grant.....	1,000 00
Total.....	<u>\$ 2,857 66</u>

DISBURSEMENTS.

Auditors.....	\$ 20 00
Directors and Committees.....	628 00
Postage.....	70 79
Prizes.....	165 00
Printing.....	252 08
Binding and mailing.....	196 00
Grape vine distribution.....	515 75
Paper.....	199 36
Advertising.....	120 70
Commissions.....	45 25
Duties.....	5 30
Coloured Lithograph.....	150 00
Caretaker of rooms.....	4 00

Guarantee premium	\$20 00
Clerk	83 00
Freight and Express.....	9 01
Secretary and Treasurer.....	200 00
Editor, Canadian Horticulturist.....	300 00
	\$2,984 24
Balance due Treasurer.....	126 58
	\$2,857 66
September 23rd, 1878.	
The balance due Treasurer.....	\$ 126 58
Due on account Burnst Grape.....	530 00
	\$ 656 58

AUDITORS' REPORT.

We have examined the foregoing receipts and disbursements and found them correct, which shows a balance due the Treasurer of \$126.58.

(Signed) ROBERT ROY, } *Auditors.*
ANGUS SUTHERLAND, }

Dated Hamilton, 23rd September, 1878.

ANNUAL ADDRESS.

GENTLEMEN:—To me, in the capacity of President of your Association, the great event of the year has again come round, and I find myself in the position of again addressing you on the fruit interests.

The subject is a wide and attractive one, and I wish that I could do it justice. Had I the ability and the practical knowledge of many now hearing me, the picture would be better, because better painted. Your indulgence, however, has been so long extended to me, and to my efforts, that I am emboldened to pass in review before you matters deeply affecting fruit-growers, and fruit interests in the Province.

Like all other commercial interests in the country, fruit interests have been passing through a time of trial. Season has succeeded season, and the hopes of the husbandman have been deferred, if not disappointed. As a rule, the present is a poor fruit year, though here and there, owing to local causes, and the great extent of our country, several varieties have succeeded, and made a good return. The great staple—apples—is everywhere almost a poor crop, the samples, however, being singularly fine.

After the most abundant promise of fruit ever witnessed in Ontario, three nights of frost well nigh annihilated the entire yield. This event occurred just at the most critical period, from the 12th to the 15th of May. The apple, pear, and cherry buds were just developing the pollen—the first, and finest berries on the strawberry—the whole of the cherry crop, and the early shoots of the vine were cut down as if they had never appeared. Currants, black and red, though the latter were more severely handled than the former, were entirely despoiled.

The feelings of the amateur and professional can be better imagined than portrayed. One gardener, in the neighbourhood of London, estimated his loss alone on his small fruits at \$1,000. The fruit which was not wholly destroyed was severely injured. Those blotches on many specimens of fruits have doubtless been caused by the frost.

Strawberries were gnarled, apples, in many cases, were covered with rough, russetted patches, indicative of the severity of the frost, and even plums had an injured side, thickened and blackened, where the early varieties had made sufficient progress to be exposed to the visitation.

With all said and done, however, some fine samples have been produced. Sparse crops have enabled the trees and vines to put forth greater efforts in wood production, and the remaining fruit is fine and largely developed.

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Late grapes have done well. There are sections in which nothing in the shape of grapes have been left. Plums are about half a crop, in some places abundant, and realizing good prices. Mr. Woolverton, Grimsby, says that in his district, the apples are not much touched. Peaches largely escaped, but owing to another evil, not less terrible than the frost—the Yellows—are but an indifferent crop, and of very poor quality where this disease has prevailed.

The difficulties attending fruit-growing are steadily on the increase. We had supposed that, as the country progressed in its material advancement, as clearances became more numerous, and the land better cultivated, our culture would make correspondingly rapid strides. This, however, in our experience is not found to be the case. Innumerable evils and trials beset the path of the horticulturist. Last year, in my address, I directed attention to the drawbacks to our cultivation, caused by the terrible depredations of insect pests. Their name is legion, and many of them unpronounceable. Thoughtful individuals amongst us have begun to consider what are the best means for lessening, if not for the removal of these evils. It will be a happy day for the fruit-grower when adequate methods are devised, and universally carried out, for the total destruction of all noxious insects, or at least their being brought under the control of the fruit-grower.

In the case of frosts, even much can be done to alleviate, if not obviate its sad ravages. One man of my acquaintance had a large number of chip piles through his orchard, and on the appearance of a clear sky, indicative of frost, fired them. Whether a sheltered locality, or the means he employed, favoured him, true it is, that his orchard is loaded with fruit.

We are persuaded that insect pests can only be got rid of by legislation. It is not until the whole country is aroused to the loss entailed on the community by the attacks of insect pests, not until a well enforced law to destroy fallen and stung fruit be carried out, will our fruit-growers reap the full reward of their labours.

Surely it is a matter of regret that year after year passes, annual meetings of the F. G. A. of Ontario come and go, without active and practical plans being broached and executed for the protection of our own members.

Perhaps the habit of lecturing is so engrained in the nature of your presiding officer, that his address would be scarcely *sui generis* unless it contained an earnest inculcation to immediate action. There are so many drags on the wheels of action, that there is no fear of any sudden catastrophe from our stepping down and out.

Why should we not appoint an active committee to draft such a bill for the protection of fruit interests as would meet with favour in the eyes of our legislators at Ottawa, who might pass it into a permanent enactment? Such a bill might embrace two or three paragraphs on statistics.

The importance and advantage of such immediate action can scarcely be denied. I have sometimes thought, that an Executive Committee formed from our direction would effect great results, if armed with the necessary power to originate and carry out plans for the better working of our associational efforts.

Another subject, and pressing, demanding the immediate and prompt attention of our members, is, the ravages of "the Yellows" in our peach orchards. Mr. A. M. Smith, nurseryman, Drummondville, deserves well of our Association in that he has been sounding the trumpet of warning in reference to this destructive agent. In a recent communication to me, he says: "The peach-growers of Grimsby, and, I might say, of Ontario, are in trouble, and are in danger of a great calamity, and not only peach-growers, but all lovers of this delicious fruit as well." It is spreading with fearful rapidity in Western New York, nearly all the orchards, in what was formerly the best peach section being more or less affected. Some orchards are entirely ruined by it. Mr. Smith further says, that he and others, have been examining the orchards in and around Grimsby, and traces of the disease are found in several places. "The Committee of investigation found out this fact, that in all the orchards where there were symptoms of the disease, there were more or less trees which had been imported from the States, and where the trees were all home grown, there was not one as yet affected. The disease is no doubt disseminated in diseased pips, buds, and young trees, and fruit of the present year. There have been hundreds of baskets of diseased peaches, shipped from Western New York to Canada, and you will hear the universal verdict wherever it has been sold, that it is tasteless and almost worthless."

The cry is for the proper remedy. We must help ourselves. We must be up and doing. We must get the means to aid us in our beneficent projects.

I am old-fogy enough to think that good laws, well executed, are the characteristics of good government, and the instrumentalities of great benefits. When the Short-horn class of cattle, and other breeds, were threatened with Pleuro-pneumonia, what did the Government do? Why, they at once, on the advice of leading agriculturists, issued an order in Council to stop the importation of cattle. What was necessary in the case of cattle, seems to me equally urgent in the case of importation of diseased fruit and fruit trees. We must protect ourselves and our interests. Representation should at once be made to the Privy Council, consultation held, and action urged.

To us, in conclave, as we are, interesting queries arise in regard to "the Yellows." I am persuaded the disease is not new. I cultivated peaches some years ago, before I fell into the pear fancy. The facts noted by me then, may be of some service now. I found in all cases of Yellows, that the pith had been injured. In examining peach buds hurt by the frost, one can always tell the degree of cold that has been endured. If the core be green, then the intensity of cold has been under 12° Fahrenheit. If brown, the evil has been accomplished, but by a degree of cold not less than 14° or 16° Fahrenheit. Trees affected with Yellows have the pith as brown as a nut, which has led me to conclude after a deal of observation and thought, that the root of these, and kindred evils is to be found in the injury done by cold, and in being allowed to overbear. Tender shoots of the peach, especially those in shade are first to show symptoms of Yellows. In late fall these shoots are found growing vigorously—they cannot resist the cold—the sap vessels are burst, the sap becomes frozen, the due elaboration of the juices is prevented, and disease is the consequence. Trees propagated from these diseased stocks propagate the disease. Fruit grown from such diseased trees bear marks, as Mr. Smith says, of the ravages of the evil, in its tastelessness, and worthlessness.

Let our future Executive Committee take another note for another paragraph in their incipient bill to form the basis of future legislation.

It might justly be noted here that premature and diseased fruit from Ohio, and other States, anticipates our Canadian markets. These introductions lower the price of our Canadian horticultural products. Our fruit-growers are thus deprived of the benefit accruing from being first in the market. Buyers will not give, a fortnight after the season has begun, the prices obtained easily at the opening. Our horticulturists are thus placed in the position of being unable, in some instances, to meet their rents when due, in other, not able to meet their liabilities, and general depression is the consequence. You are well aware, gentlemen, that this is no imaginary picture.

Elemental nature, insect pests, and disease, while they rank among the most potent evils with which we have to contend, are by no means the only obstructions to successful fruit-growing. We have to contend against the thievish propensities of men and boys, who, perhaps, destroy more by the damage they do to the trees and vines, than by the amount they steal. It is provocative of bad thoughts, words, and actions, to find, after all our care, that our trees are sufferers as well as we ourselves. A better and a finer feeling prevails on the other side of the lines. We have been in different parts of the States, where without fences, or guards of any kind, the fruit was respected, and perfectly safe from passers-by. To remedy the wonderfully natural propensity for fruit stealing, which is a very old story, I suggest, that our efforts be put forth to make fruit-growing universal. Remove the temptation to steal by having everyone cultivate his own fruit, and such a plan once carried out will do more to preserve fruit, and your equanimity of mind, than the best coercive means that could be devised.

Perhaps, however, there is no greater drawback to our culture than the want of appreciation of the advantages of fruit-culture among our own people. Notwithstanding all that has been said, written, and done, by our Association, much remains to be done, to enlighten, and urge our people to cultivate fruits. In the past, there has been, probably, some excuse for our yeomanry. I feel, however, that the time is past for excuse making. In how many districts of our Province of Ontario, do we find most miserably stunted and ill-cared-for orchards? It's cheaper to grow good trees than bad, just as it is as cheap to have cattle in good than in poor condition. Local Associations are greatly needed to give an impetus to fruit-growing. Last year at the Northern Fair at Walkerton, I found, that a certain pippin had

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borne a wrong name for seventeen or eighteen years. Would it be believed, that the grower, who had annually carried off prizes for his apple bearing a wrong name, was greatly annoyed, that it was ruled out of competition, because it was wrongly named, and entered for competition in the wrong section. Local efforts to raise our culture into its proper place, and to the enjoyment of its true dignity, must be made in every quarter, and then, and then only, shall the want of due appreciation for fruit-growing be exploded, from our townships and towns.

The ennobling pleasures of fruit-growing are yet to be commended to our artisans and tradesmen. Once an individual has been launched upon the Pacific ocean of tree culture and fruit-growing, he forsakes and considers mean, former debasing attractions. Elevating delights are to be found around the family circle at the first exhibition of the first dish of plums, peaches or pears. How the commendations of the approving wife, and the expressed appreciation of the younger children over some toothsome grapes, gratifies, and is ample reward for the time spent, and the labour bestowed in the cultivation.

An esteemed correspondent, Mr. Adamson, of Hamilton, has been urging me to give greater attention to the enlisting of the hard-working villagers, townspeople, and citizens in fruit-culture. Amateur fruit and flower-growing associations affiliated to our Provincial Association would have a beneficial effect in developing fruit tastes, and bringing out the desire to cultivate fruits and flowers.

I wonder, if I should provoke hostile criticism, if I extended my remarks on the want of appreciation of the benefits accruing from fruit culture, to the individual members of our Association? How much of the labour is undertaken by a very few? Let the contributors to our periodical, the *Horticulturist*, testify to the truthfulness of this remark. It is where all, or, at least, a large proportion of the membership of any society lend a helping hand in forwarding its interests, that success attends the efforts. We need a long pull, a strong pull and a pull altogether, and there is no fear of failure. What we want is more concentrated and united purposes among fruit-growers professionally. Earnest discussions on the best fruit markets—on the best methods of preserving our markets from being over-glutted, either by the home or the American producer. We have powerful rivals across the lines, men possessed of brains, as well as abundance of pecuniary means, who are continually scheming in the good sense, and carrying out almost invariably their plans to successful issues. A barrier to the difficulty we have for years had in accomplishing these results has been lately removed by the establishing of the *Horticulturist*. I must say, however, candidly and truthfully, that advantage has not been taken of this mode of ventilating the remedies for our difficulties. That great difficulties do exist is undeniable. How best are they to be removed? They are not likely to rectify themselves. Determination and action are necessary and pressing. I am certain our editor, Mr. Beadle, would open his pages to a temperate and full discussion of these and kindred topics.

When the best, however, has been devised and done, and the fruit raised, we have still difficulties to contend with. From our peculiar position, a few degrees further north than our more southern neighbours, our markets are permanently flooded with foreign fruit before ours is ready. The problem how best to meet this state of things is arduous and almost embarrassing. The American grower ought not, and cannot be excluded from our markets. How then are we to be protected? I suggest that reciprocity in fruits become the order of the day. If our energetic neighbours and cousins anticipate our fruits in our own markets, what hinders that we lengthen out theirs by carrying the war into Africa? Our own supineness alone prevents our supplying Buffalo, Detroit, Rochester, and Ogdensburgh with our late small fruits. If separating tariff views and notions hurtful to commerce prevail, as we believe they do prevail, let us by all means urge on a better state of things. We require, we need reciprocity in fruit interests. What is true in regard to fruit is equally true with regard to fruit trees. It is a fact that any quantity of nursery produce can be introduced into Canada from New York State and Ohio, but that similar Canadian productions have to pay a differential duty!

Then let politics be laid aside, and let us demand equal advantages. Let us have a fair field and no favour. Our manhood will enable us to hold our own. What we need is adequate legal protection. Place Canadian and American growers on the same platform. Should climate and skill and go-aheadativeness favour our rivals, then let the patient, steady industry of our people, act as a counterweight. *Nil desperandum*. Our F. G. A. of Ontario must

become the vanguard of the host that leads to victory. It must become more intensely Provincial, and assume the reins of direction. Perhaps, I ought to have said, it must become national. Fruit-raising must characterize all our districts. Our climate is, on the whole, favourable to fruit-raising—our soil in several large sections of the Province is singularly adapted for the purpose. Yet, alas! what stagnation reigns from Amherstburg to Fort Erie. A district capable of supplying half a continent with delicious fruit given up to a hand-to-mouth way of doing things. These capabilities are admitted, nay proved. Should any doubt remain on the mind of any man, let the fruit shown at the Guelph Central Fair last week by James McCrone, Normandale; G. J. Miller, Virgil; D. N. Broderick, and Jno. McLaren, St. Catharines, and on exhibition here to-day, demonstrate the fruit producing power of our soil and climate. We greatly need determined and united action. Give us, get us laws for the suppression of pests—enactments for the enfranchisement of the commerce in fruits and fruit trees—Agricultural and Arts' Acts for the better encouragement of agricultural and horticultural pursuits.

In looking over the governmental estimates for the encouragement of various industries, I find horticulture enriched and overburdened with the munificent sum of a thousand dollars. Think of the amount! A thousand dollars! What can the direction of the F. G. A. do with such a large sum? I was told at the time of the increase of the last grant—an increase of \$250—that the members of our Legislative Assembly were all alive to the importance of so large an increase. Little do many of our legislators think of the straits to which we are put. Straits to meet the demands for the publication of our infantile periodical, the *Horticulturist*—the expense connected with the important illustrations of the annual Report to the Government—difficulties in meeting the ordinary outlay in the shape of paying for practical essays on agricultural and horticultural pursuits and subjects—the money needed to call forth to public notice new seedlings of all varieties of fruits—our tree dissemination—our advertisements, postage, papaterie, and the needful travelling expenses of the Directors—all these have to be met from the members' fees and from the munificent contribution of a thousand dollars.

When the public are made aware that the amended Agricultural and Arts' Act makes provision for thirteen Directors from the thirteen agricultural electoral divisions, and that a resident Director must be chosen from each of these, it will be seen how economical and careful our outlay must of necessity be. We question if \$5,000 annually were too large a sum to be judiciously spent on the fruit interests in the Province of Ontario. In fact, I know I am only uttering the opinion of every member of this Association, when I say that our means of usefulness in advancing fruit interests are only limited by our scanty means—with more means we might become the instrumentality of much good.

Indications at present point to the propriety of fostering grape culture in Canada. In France, Spain, and Portugal, and also in Germany, the Phylloxera is working immense havoc among the vines. Nor are the ravages of this insect confined to the old and settled countries of Europe. Through the kindness of Mr. John McLean, of Owen Sound, I have been favoured with the Fruit Report of the Government of South Australia. The Phylloxera is making equally dreadful inroads upon the vines in that, and in the neighbouring Australian Colonies, as well as in America. On the principle that it is a bad wind that blows nobody good, I would have our Canadian fruit-growers prosecute with unflinching assiduity the cultivation of the grape. With hardy grapes so adapted to our soil and climate, there is no sufficient reason why our grapes and wines should not become the staple of the world. Mr. Peter C. Dempsey may live long enough to see what a mighty impulse he has given to vine culture by the introduction of "the Burnet" grape to the notice of fruit-growers. We are satisfied that it is destined to work a mighty revolution in Canadian grape-growing. We long to see his other hybrids, and as some say varieties superior to "the Burnet," especially his No. 18, disseminated. Might I be pardoned in saying, that I would like to remain in good company, and that Mr. Dempsey could not do better than name his 18 after Beadle, our worthy Secretary; his 22 after Arnold; 25 after Saunders; another after Roy; and signalize another member by giving to the world "a Bucke," to roam on the rich pastures of another "Leslie."

Mr. B. Gott, our eminent horticulturist and nurseryman, at Arkona, writes me in reference to grape-growing, and says, that it will prove an important lesson if we profit by the last spring's frost, and learn "to select and to plant for profit only those vines that are "

clad." How and discernment hardy varieties apples, pears, aggrandisements

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clad." How true is it that necessity is the mother of invention. Practical men of judgment and discernment are the authors of profitable ideas. We must encourage the production of hardy varieties, the rigour of our climate demands, as Mr. Gott says, the *ironclad* among apples, pears, peaches, and grapes. All success to the pioneers in this desirable field for the aggrandisement of human happiness and human comfort.

To those of you, who anticipate evils to our own grape-growing from the Phylloxera, and its introduction and propagation, by the means taken to induce the planting of a larger acreage, and that by the very suggestions made in this paper, I would merely say, that there is a margin for the cultivation of the grape in Canada. Our summers are shorter than those in more southern climes, and in the countries named,—less time is therefore allowed for its ravages,—the temperature is cooler,—and hence its exertions are less active. Our very position may yet give us the command of one of the most profitable of the commercial interests of the world—the fruit market. Ontario is yet destined to take a foremost place in fruit-growing, and if her cultivators are true to themselves, they may yet derive the profit and advantages connected with the most extensive fruit operations.

I'll run the risk of being thought an annexationist, and urge upon our people, the study of the Americans at home. What push and dexterity they show in carrying on their commercial operations. What did not Longworth do for Cincinnati? What are not speculators doing for the vine-growing islands in Lake Erie? We want a few of such men, men of push. There is no reason why we should not go and do likewise. Grape-growing encounters no difficulties in Canada, that have not been equally prevalent in the States.

At the risk of repetition, I would again urge upon our Association to secure and disseminate the white raisin grape raised by Mr. Reid, of Port Dalhousie. It is, and has been to me, a subject of wonder, that a berry so promising should have been allowed to remain under a bushel, or a bed for that matter, for the last ten years. I fear something is wrong either with the producer, Mr. Reid, or with the Association, or with both. What is true of Mr Reid's grape is equally true of the Fellenberg plum. Mr. William Roy, of Owen Sound, has again and again called attention to this important fruit, so admirably adapted for drying, but the call has fallen on inattentive ears, and the merits of the plum are left to do honour to the few who appreciate it themselves, but who find it exceedingly difficult to inoculate others with their furor. I do wish that somebody would fire a thirty-ton gun on these and kindred matters from that good piece of ordinance the *Horticulturist*, and awaken our members and outsiders to the importance of giving a lift forward, and upward, to those fruits, that are of first-class merit and value. We do require a few strong men—weaklings are no avail.

It were unpardonable were I to omit mention of the improvements recently made in exhibiting our fruits. We have long submitted to the incubus of "this is how it has been," and "this is how it is to be." It is impossible satisfactorily to view and judge of fruit packed as close as peas on our show tables, with scarcely a space separating the individual's specimens, and, if separated, parted with a piece of dirty "Globe," or "Mail."

Through the intelligent action of Colonel Shanly, and the admirable executive ability of Aldermen Withrow, Close, and their able colleagues, we have a Hall, for our purposes, containing fruits and flowers alone.

I am vain of this triumph. For years I have striven to attain this consummation. When at Ottawa, the mere mention of the propriety of such an arrangement to Col. Shanly was enough to secure its accomplishment. To him, gentlemen, you are indebted for your fruit and flower Hall at this Exhibition at Toronto. We only trust, that other places seeing and appreciating the advantages, will go and do likewise. In speaking of this Exhibition, it seems befitting that I should notice how admirably things have been appointed. The means of classification which have been afforded us, and our agricultural conferees, have tended to give a prominence to exhibits, which never before has been the case in our Provincial Show.

Let me say that what has been done in your department in your fruit Exhibition is very marked in other departments.

Stoves have been separated from the Babel generally found in all central buildings—cheese with its wholesome flavours, and living freight, has been relegated to a house appropriated for the sole purpose of its exhibition. Elsewhere we had it in close proximity to our beautiful grapes. This is a mighty improvement on the delightfully blended smells of cabbage leaves, turnips, beets and onions, with those of butter and cheese. Thanks to the unstinted liberality of the Corporation of Toronto led by the broad and popular views of a Mor-

ri-son, and by the enlightened and 19th century views of Mr. Withrow, Chairman, and the members of the Exhibition Committee.

Now that we stand on our own bottom, the question may with propriety be asked, how can we best improve our longed for pleasant circumstances?

We must look for the display of increased taste. Better arrangement must become the order of the day. Attention must be called to the finer exhibition of fruits and flowers, and, if possible photographs should appear in the *Horticulturist* of the fruit exhibits that have taken the leading prizes.

What a happy day would that be for our present and future exhibitors, if our Judges would transfer to paper, thence to the publisher, the facts and reasons for their preferences. What a curious record it would be, and how instructive. Many a tyro would rejoice in the information, and be encouraged to enter the competition with old stagers distinguished for their triumphs and astuteness.

As yet, little is definitely known as to the criteria that guide different Judges in their different decisions as to fruit excellencies. We see no reason why these criteria should not be reduced to the niceties marking the exact sciences. Values ought invariably to be given to different varieties, which should be known as A 1, A 2, A 3, &c., &c., and then the value given according to size, shape, and colour.

It is admitted, I think, that all that might be is not made of our Exhibitions. Why papers should not be prepared and read on the different products in the different classes baffles my comprehension. It is not sufficient to say, that everybody is busy, and too tired in the discharge of duty on such occasions. Parties not thus engaged should be enlisted to do the work, and publication made of their views. Even wrong views might be made the vehicle of right ones, if only known, and disseminated.

A felt want among many fruit-growers is the absence of discussion on kindred subjects. If our Association is to fill the place of a thorough Provincial guide to Horticulture, and allied topics, then flowers and forestry, must be added to our plans and efforts. These two branches, in particular, are so closely allied to our cherished culture, that their omission in our discussions gives rise to reflections suggestive of additions to our contemplated objects. Our worthy Secretary has given us a touch of his poetical fancies and cultivated taste in recent articles on roses and their culture. His lucubrations have only to be implemented by a perusal of the Rev. Mr. Hole's Book on Roses, and a domestic Rosarium at every residence would start into existence at once.

A truce, however, to these pencillings, important considerations yet demand our attention. A little digression on lighter subjects may only whet our appetites for the severer.

It would be an oversight, on such an occasion as the present, were I to omit due and particular mention and give that meed of praise which Alderman Withrow and his noble Exhibition Committee so justly deserve for their admirable arrangements in the new Exhibition Buildings, erected at such expense on the Garrison Common. The City of Toronto has acted in no niggardly fashion, but in a way worthy of itself. Every requirement has been met, and the plans for the exhibition all but perfectly carried out. Nothing is more noticeable in this respect, we have already said, than the facilities for classification. The Province, and Toronto in particular, will be vast gainers by it. The example, so nobly set, will soon be followed. Exhibitions are so multiplied all over, that the excellencies of one sooner or later become the excellencies of others. Nor will this improved classification alone mark the Provincial, Western, Central, Hamilton and Northern Fairs, it will find its way down into the regular gradation of shows, through the village, township and county exhibitions.

The interest in these exhibitions is certainly gaining ground every year. Under the healthy and stimulating efforts of the annual Provincial competition, there has been, it is true, a gradual, but steady improvement of the quality of the articles placed on exhibition. People are beginning to enquire how results so interesting and beneficial, are brought about, and how best to be realized. Enquiry leads to experiment, and experiment to greater enterprise. This desire to excel is marvellously shown in the production of new and superior articles, both in agricultural, horticultural and manufactured goods. This has been especially the case in late years. P. C. Dempsey, of Albury, for instance, has several hybrids equal, if not superior, to "the Burnet" grape, though there be a difficulty in supposing that "the Burnet" could be beat. Mr. W. H. Mills, of Hamilton, follows at no great distance with his highly flavoured varieties, which, in the opinion of many, have as piquant a flavour as any

variety grown in the United States.

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variety grown under glass. This line of discovery is being prosecuted with increased ardour in the United States.

We are indebted to the gentlemanly head of the firm of Ellwanger & Barry, Rochester, George Ellwanger, Esq., for specimen plants of "the Sharpless strawberry." A brief description of this new plant may be acceptable to at least a number of the members of our Association, who, not being in the trade, are not in the way of hearing of recent novelties in fruits. Size, large to very large, an average specimen measuring one and a half inches in diameter either way. A specimen exhibited at the Nurserymen's Convention, held in Rochester, June 20, 1878, weighed one and a half ounces, and measured seven inches in circumference. The Stump apple and the Red Bietigheimer are new, of rare excellence and high flavour. The Lady Washington grape of J. H. Ricketts, of Newburgh, N. Y., and similar productions of his, may be instanced as examples of what is doing, and what can be done, in the production of first-class fruits. The like may be said of André Desportes and Bonne Du Puits Ansault pears, the latter of which I have fruited. The Hon. Marshall Pinckney Wilder speaks in equally laudatory terms of the Frederick Clapp, a pear of first excellence.

It is true, too true, that often worthless varieties have been presented for the reception of the public. These annual exhibitions soon try their merit, and a season or two, at the utmost, tests their estimation in public opinion, and, as a consequence, their position in the well-considered catalogue of the improving nurseryman. Ill effects have not been invariably the consequence of premature issues. Failure in such cases has only stimulated to greater success in others. Pre-eminent in recording valuable and successful varieties newly introduced stands the firm of Ellwanger & Barry. We may implicitly rely on the catalogue descriptions of fruits presented by these professional men. In few, or no cases, do they issue to the public fruit trees which have not been thoroughly tested in their experimental nurseries. Progress and the benefits resulting from our exhibitions are marked and distinctive. What progress horticulture has made within the last few years! Nothing that industry and skill can accomplish has been left untried, and it is more than likely that, in the light of future exhibitions at our Provincial fairs, the record of horticultural progress will appear more fascinating and romantic than the most advanced horticulturist now present could dream of.

This is particularly shown by the advances made in grape-growing by Mr. Henry Paffard, of Niagara. A strong impression exists on the other side of the Atlantic in regard to our Canadian winters, that their severity is well calculated to stagger the intending emigrant from seeking a home upon our shores. Mr. Paffard can, and has practically demonstrated that we are not living within the Arctic Circle, and that however severe our climate may be, it does not injure vegetation. As a proof of the average mildness of our climate, reference may be made to the experiment of growing and ripening many of the exotic grapes heretofore only cultivated under glass.

Mr. Paffard, on a recent visit which I made to Niagara, showed me in his garden several exotic varieties, and among them a vine of Black Hamburgs, which has been in full bearing for six years, and produces yearly a heavy crop. It may not be generally known that Mr. Paffard secured a bronze medal for these grapes at the Centennial. The bunch weighed 16½ ounces. An esteemed correspondent writes of these grape vines, and says: "The protection in winter consists merely in laying down the vine and covering it with a little garden mould, and the growth is as rapid and vigorous, and the bearing as full as any of the hardier kinds, while the shape, size, colour and flavour of the clusters and fruit will compare favourably with the best specimens produced under glass."

Demonstration of our favourable climate has thus been made, and the continuance of effort and experiment will aid in the work of national development and human refinement until these beneficial triumphs of human genius receive encouragement from all classes of the community.

In the contemplation of this advancement, we have sometimes thought that the objects of our society are rather limited. Nor are we singular in this view. In a communication of a recent date from Geo. Mill, a veteran and accomplished horticulturist of Warwick Township, he asks: "By the way, do you think that we have enough of the right kind of material in Canada to form a botanical society?" Such a society might be well affiliated to our Fruit Growers' Association. It seems to me that the time is not distant when trees, flowers and fruits ought to form the objects of our associational efforts. The needs of the country seem to demand it, and parties interested in all rural matters feel it

a necessity. Our *Horticulturist* also seems to have made a strike on this line. The rose has received a memorable notice, why not the pine? The lettuce and other vegetables have come in for attention, why not the osage, thorn and maple?

Who is to give the initiative in the new departure? What strong man to stand forth and take the lead? Who is to gather up the threads of all these requirements for our country's good? I look to the members of our Fruit Growers' Association. They have done much in the past, and they may do much in the time to come.

I have just returned from fulfilling an invitation to the New York State Fair at Elmira. The Horticultural Society of Western New York take all kindred subjects under their wing. I may say that the members of this Society greatly bulk at this Annual State Fair. The courtesies of Mr. Ellwanger, Mr. Barry, Mr. Hoffman, President, of Mr. Harrison, the efficient Secretary, to your President will not be soon forgotten.

The machinery, which facilitates the working of the New York State Fair, runs very smoothly. Every thing is well appointed. We were much struck at the entrance fee being fifty cents. The usual amount of agricultural and horticultural implements were on exhibition—Syracuse chilled ploughs—reapers, which are self-binders with string—potato diggers—separators, and a countless host of nostrums for facilitating the labours of the husbandman. The samples of fruit and flowers were good. Ellwanger & Barry, of the Mount Hope Nurseries, Rochester, exhibited a fine collection of apples, grapes, pears and quinces. Mr. Vick was there, as he is here, with his grand display of flowers. J. H. Ricketts, and his splendid hybrids, was conspicuous—in a *recherché* collection like that of the Newburg exhibitor, it was difficult to distinguish his best varieties. To our taste and that of my well-known colleague, Mr. Fuller, of New York, Rickett's Lady Washington was *facile princeps*. A seedling peach shown by a Mrs. Bliss was greatly superior in flesh and quality to the Crawford Early, and is a peach which, we are satisfied, will yet make a noise in the world.

A horticulturist of Elmira showed a dozen samples of Tompkin's County King. They were the king of apples. One was 23 ounces weight and measured $14\frac{3}{4}$ inches in circumference any way. The twelve together weighed 13 pounds 13 ounces.

Cattle—Short-horns, Ayrshires and Jerseys—sheep and pigs made a good show, and Mr. Joe Jardine, of our Province, did not come off second best with his Ayrshires. Horses, however, are the grand staple at the New York State Fair, and they were splendid.

But I digress. There is a mighty difference between horses, sheep and pigs, and apples, pears and grapes.

I would suggest to the F. G. Association, as I have already suggested to the Board of Agriculture, that we would be doing ourselves infinite credit by inviting a limited number of the foremost fruit-growers in the Northern States of the Union, such as those of New York, Ohio and Michigan, to come over and be our judges of fruit at one of our Provincial shows. Much benefit would result to us and them. Ellwanger, Barry; Robert J. Swan, of Geneva, Fuller, of New York; Thomas, of Union Springs; Quinn, of New Jersey; Bateham and Campbell, of Ohio, are each and all eminent in their profession in their own country, and would lend a lustre to ours if they came amongst us as invited guests to judge of our Provincial fruit productions. Such a suggestion is well worthy of the best consideration of our Association, and I have little fear, if recommended by you to the enlightened Board of Agriculture and Arts, they would at once see and appreciate the propriety and advantage of the step.

I am nearly done. I have merely to say further in reference to the means to be employed for the furtherance of the interests of our Association in the future, that, whenever the funds permit of it, we should diligently add to our appliances, a technical library on horticulture, floriculture and forestry. I trust our members are not forgetful of the donation which we received a number of years ago from Sir William Young, of Nova Scotia, of his late father's work on agriculture, issued to the world under the *nom de plume* of "Agricola;" of the liberal contribution of the Hon. Marshall Pinckney Wilder of the transactions, in eight volumes, of the American Pomological Society. I would further take the liberty of suggesting to you, gentlemen, on this occasion, that the Secretary be empowered to collect and bind all periodicals, either received in exchange or bought, illustrative of our chosen culture.

In conclusion, should some effort not be made by us to occupy Manitoba, and British

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Columbia with the best products of Pomona. Former members of our Association now reside in Manitoba, and our Pacific Province, and would it not be well to stir them up to the propriety of advancing fruit interests in their respective Provinces? The least we can do is to see that the leaders of the public in horticultural matters are furnished with our Reports to our own Government. In trying to benefit them, we would certainly be doing no injury to ourselves.

What is true of the Provinces now named is equally true of the Maritime Provinces. A closer correspondence than has yet existed between us, might be of advantage to them and to us. I am well satisfied, that Dr. C. C. Hamilton, of Wolfville, would cordially enter into such arrangement, and would be ably seconded by such enthusiastic horticulturists as J. H. Starr, and Mr. Brown of Yarmouth, N. S.

Gentlemen, our present Exhibition will be long remembered in connection with the name of His Excellency, Earl Dufferin. Before there is occasion again to erect new buildings for holding the Provincial Fair at Toronto, most of the present actors will have passed from this scene of mortal interests. Let us strive as diligent workers to leave behind us a record, somewhat of the nature of that which will remain in the history of our country, of the beneficent Government, and the thoughtful patronage of every good work of the retiring Governor-General of Canada, of whom it may be justly and truly said, that he never made a wrong step, and always said and did, in his official intercourse with us, the right and true, at the proper time and place.

We are sowers, and others are the reapers. This is our sowing season—let us sow well—in due season we shall reap, if we faint not. With so much to encourage and reward faithful labourers, let us strive each in his sphere, and as he has opportunity, so to acquit himself in the great struggle of life, that the plaudits of our fellow creatures—the approvings of our consciences, and at last, the “well done” of the Great Master may reward all our toil.

One of our Directors, the late Mr. Hora, of Kingston, has since our last annual gathering entered into the fruition of his labours. Our harvest-time, like his, will soon be over. The sun is fading now; the ripened fruits of the earth remind us of God's glorious promises; the fall is gradually tinging the scene; grey hairs begin here and there to appear upon us; nature looks more sterile and sombre every day after the golden tints of autumn; the air is getting chilly; the winter is coming,—freezing, furious, bleak winter is coming—we, while others are taken, are left to the burden and heat of the day—when our day is finished, and the winter of death has come, may those who survive us, utter with joy, he has finished his work.

“While man is growing, life is in decrease;
And cradles rock us nearer to the tomb,
Our birth is nothing but our death begun
As tapers in that instant they take fire.”

ROBERT BURNET,

President.

REPORTS OF DISCUSSIONS.

WINTER MEETING.

The Winter Meeting was held in the Council Chamber, City Hall, Hamilton, on Wednesday, February 6th, 1878.

President Burnet took the chair, and, after the reading and adoption of the minutes, introduced to the meeting John R. Craig, Esq., Secretary of the Agricultural and Arts Association, and heartily welcomed him to our discussions. Mr. Craig responded to the effect that it was a great pleasure to him to be present, to make the acquaintance of the members, and become familiar with the working and work of the Association. The

President also introduced to the meeting Mr. Jones, of Rochester, a member of the Western New York Horticultural Society, and delegate from that body. Mr. Jones thanked the President for his very complimentary introduction, and presented his credentials, which were read to the meeting by the Secretary.

Charles Arnold, of Paris, read his report of the meeting of the Western New York Horticultural Society, to which he had been sent as our delegate, which was received with thanks to Mr. Arnold, and ordered to be printed in the annual Report.

REPORT OF DELEGATION TO WESTERN NEW YORK HORTICULTURAL SOCIETY, JANUARY 23RD AND 24TH, 1878.

Your delegate appointed to attend the Winter Meeting of the Western New York Horticultural Society begs to report that he met that Society at Rochester, on the 23rd and 24th of January.

The meeting was held in the new Common Council Chamber, a room capable of holding some 500 people. The average attendance during the 23rd and 24th was about 150 intelligent fruit growers from all parts of New York and adjoining States, Mr. A. M. Smith, of Drummondville, and your humble servant being the only persons observed from Ontario.

The following are some of the subjects discussed:—

1st. The Quince.—On what soils and by what treatment does the orchard culture of the quince prove most profitable, and what variety is best for general cultivation for market purposes.

But little information was elicited; no two persons seemed to be of the same opinion as to the best kinds, or the best mode of cultivation.

2nd. Insect Enemies.—What discoveries or improvements have been made during the past year in the manner of exterminating the codlin moth worm, and what methods have proved most effective in preventing the depredations of the canker worm, etc.

Nearly the whole of the evening session of 23rd was occupied in discussing the codlin moth and the best means of destroying it. One person spoke for nearly two hours in advocating the claims of what he called his invention, and for which he had applied for a patent. This contrivance consisted only of a piece of water-proof paper or pasteboard, lined with cotton batting, forming a band of from two to three inches wide around the trunk of each tree, the cotton batting to be put next to the tree, and occasionally taken off and the larva found lodged therein destroyed.

Another person had applied for a patent for the same thing, only in this case the cardboard was punched full of holes, and the cotton batting pressed into the holes.

Other persons had used several folds of common paper with good results.

All parties agreed that war ought to be at once declared against this pest, and that every person who owned an apple or pear tree should be enlisted into this service.

Scraping the rough bark from the trunk of the tree in the spring and washing the tree with good strong soapsuds, thus destroying the larva and softening the bark was recommended.

Thursday morning's session was occupied in reading the following essays, some of them containing much valuable information;

J. J. Thomas—Our Public Roads.

Prof. Lazenby—Gathering, Marketing and Preserving Apples.

Charles A. Green—Small Fruits.

Geo. Ellwanger—Spring Flowering Shrubs.

P. C. Reynolds—The Kitchen Garden.

Geo. T. Fish—Horticultural Botany.

H. B. Ellwanger—On Roses.

W. C. Barry—Weeping or Drooping Trees.

A short essay, read by Prof. C. H. Dann, on Chemistry, containing the statement that 95 per cent. of the fruit and wood of the apple tree was supplied by the air, somewhat taxed the credulity of your delegate.

3rd. The Peach Tree Worm—Is the worm that destroys the young shoots of the

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peach, a new enemy, and is there any way of preventing its attack? How are the Yellows introduced and how exterminated?

The debate on this subject was very brief and but little information gained.

4th. Timber Protection for Peach Orchards.—Is timber protection for peach orchards more important than elevated sites or northern slopes?

The opinions expressed on this subject were almost as various as the persons who took part in the discussion.

5th. Irrigation.—Is irrigation for gardens and fruits practicable? What are its uses and methods?

No person spoke from experience and the subject was soon dismissed.

There were but very few fruits on exhibition; the following is a list of the pears:—Columbia, Princess St. Germain, Beurre Gris d'Hiver, Doyenne Goubault, Haddington, Herricart de Thury, Beurre Langlier.

A plate of the Columbia pears was the finest plate of winter pears I ever saw, as far as appearance goes, of the flavour I had no means of judging.

A few plates of the well-known old varieties of apples completed the list of fruit on exhibition.

Reports from different parts of the State, as to the quantity of apples grown and shipped last year, showed an immense revenue to the State and profit to the growers: \$300,000 worth were reported from Niagara County alone. Other counties reported as high as \$500,000 worth, besides a large amount for pears and other fruits.

Before closing his report, your delegate would beg to remark, that when these statements were made as to the large amount of money realized from so comparatively small quantity of ground, that he inwardly expressed the hope, that the day was not far distant, when through the enterprise and far seeing policy of some of our intelligent land owners, aided by the well directed efforts of this Association, reports similar to those just mentioned will come from numerous counties in Ontario, where soil and climate are certainly equal to any portion of New York State.

And when we consider that *Our Ontario* is the best fruit-growing section of this great Dominion; and remember the large number of our people, and people from less favoured lands, who are emigrating to the rich fertile plains of the "Great North Land" of Manitoba, who must always cherish a desire for our delicious red and golden cheeked apples; and when we take into account also, the yearly increasing facilities for shipping in every direction, surely it is quite safe to predict, that growing first-class fruit in Ontario must be profitable for many years to come.

All of which is respectfully submitted by

Your humble servant,

CHARLES ARNOLD,

After the reading of this report a discussion arose on the subject of statistics of fruit culture.

Mr. Jones, of Rochester, N. Y., stated that their method of collecting statistics is to appoint a committee from each county, consisting of one person, who corresponds with the shippers of fruit and ascertains the amount each has shipped during the season.

President Burnet suggested that we need authority from the proper source to ask for and procure these statistics, and that it be made obligatory on parties to give this information: many shippers do not care to have it known how much they handle.

Mr. Jones suggested that the railways will willingly give information of the quantity of fruit shipped from their several stations.

A. M. Smith moved, seconded by E. Morden, that a Committee be appointed by this meeting to interview the Government and devise means for obtaining reliable statistics in regard to the amount and value of the fruit annually raised and exported from this Province, and that the Committee consist of Messrs. Burnet, Beadle and Bucke, which resolution was carried unanimously.

It was also moved by Mr. Leslie, seconded by Mr. Bucke, that the Grand Trunk, Great Western and the other railways be requested to include in their annual reports on the crops the condition of the apple crop.

It appeared from the reports made to the Western New York Horticultural Society that the quantity of fruit shipped and worked up in Niagara County was :—

Apples, 100,000 barrels sold and in store in the county at an average of \$2.75 per bbl.	\$ 275 000
Apples, 55,000 bushels at 20c.	11 000
Pears, 5,000 bbls at \$4.00 per bbl.	20 000
Quinces, 2,000 bbls at \$4.00 per bbl.	8 000
Cherries, 160,000 pounds at 3c per lb.	4 800
Peaches, 85,000 cases at 75c per case, . . .	65 750
Plums, 1,800 bushels at \$1.75 per bushel. . .	3 150
Grapes, 300,000 pounds, at an average of 4c per lb.	12 000

Making a total of \$399 700

In Genesee County the report stated that the number of bbls of apples purchased in Batavia was.....	20 449
Number of bbls of apples purchased in Leroy was.....	18 500
Do do do Corfu do	4 800
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Making a total aggregate of barrels shipped from the county..... 45 349

A low estimate of quantity yet held by growers.... 5 000

Making the total quantity marketed outside the county 50 349 bbls.

which as the average price paid per bbl was \$2.30, makes the apple crop net the county the sum of \$115,702.70.

The total quantity of pears shipped from the county is 5,640 bbls, costing \$3.50 per bbl., or a total sum of \$16,240.

The total sale of quinces was 800 bbls., at \$4.50 per bbl., equal to a total of \$3,600. Thus the total income to this county from these fruits was the significant sum of \$135,542.70.

In Erie County it was stated the amount of apples of No. 1 quality was equal to 500,000 bbls., and that the average price per bbl was \$2.00, equal..... \$ 1,000,000

Pears, first quality, 50,000 bbls., average price \$3.50 per bbl., equal to..... 165,000

Making a total of..... \$1,165,000

Besides what has been received for cherries, which brought an average price of \$2.50 per bushel, and from grapes which brought an average of 3½c per lb.

It was stated also that the total shipments of apples from Chautauque County had amounted to about 200,000 barrels.

The meeting proceeded to the discussion of the

CANKER WORM.

The insect has made its appearance in some places in great numbers, doing great damage to the orchards by eating the leaves, often stripping the trees entirely, so that they are as destitute of foliage as in the winter.

A. M. Smith, Drummondville, had no experience.

J. J. Bowman, Hamilton, had quite too much experience, having suffered severely from their depredations. The female moth is wingless, comes out of the ground in November, crawls up the trunk of the tree and lays her eggs. From these eggs the worms hatch out in the spring, devour the leaves, and disappear about the middle of June, going into the ground, when they undergo their transformations and come forth again as moths in the autumn. He had tried Paris green in water, sprinkled upon the leaves and it had killed them,

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The following description of these insects is taken from the Entomological Report of 1875, page 25, it having been ascertained that there are two species of this insect. The one is called *Anisopteryx Vernata*. The egg of this species is not unlike in form a miniature hen's egg, but is of a very delicate texture and pearly lustre, with irregular impressions on its surface. The eggs are laid in masses without any regularity or order in their arrangement, often as many as a hundred together, and secreted in the crevices of the bark of the trees. The eggs are usually hatched between the first and middle of May, about the time when the young leaves of the apple tree begin to push from the bud. The little canker-worms, on making their escape from the egg, cluster upon and consume the tender leaves, and on the approach of cold or wet weather creep for shelter into the bosom of the expanding bud, or into the opening flowers. The newly hatched caterpillar is of a dark olive green or brown colour, with a black, shining head, and a horny plate of the same colour, on the second segment. When full grown they measure about an inch in length. The colour of the body varies from greenish yellow to dusky or even dark brown. The head is mottled and spotted, and has two pale transverse lines in front; the body is longitudinally striped with many narrow pale lines; along the sides the body becomes deeper in colour, and down the middle of the back are some blackish spots. When not eating they remain stretched out at full length, and resting on their fore and hind legs under the leaves. When full grown they leave the trees, either by creeping down the trunk or by letting themselves down by silken threads from the branches. When thus suspended in great numbers, as is frequently the case, under the limbs of trees overhanging roads and sidewalks, they become a great annoyance. Having reached the ground, they soon begin to burrow into it, and having penetrated from two to six inches, a simple earthen cell is formed by compressing the earth, and lining it with a few silken threads; this makes but a fragile home for the chrysalis, and is easily broken to pieces. The chrysalis, which is about five lines long, and one and a half in diameter, is of a pale grayish brown colour, with a greenish tint on the wing-sheaths in the male; that of the female is more robust than the male, and both are sparingly fitted with shallow dots over their surface. Sometimes the chrysalis produces the perfect insect late in the autumn, in other cases it remains quiescent during the fall and winter months, emerging during the first warm days of early spring. The female moths of both species of canker-worm are wingless, and present a very odd, spider-like appearance. With a body distended with eggs, she drags her weary way along in a most ungainly manner, until she reaches the base of a suitable tree, up which she climbs, and there awaits the arrival of the male. The male is active, although a delicate and slender looking creature. Its fore wings are ash-coloured, or brownish-grey, of a silky, semi-transparent appearance, with a broken whitish band crossing the wings near the outer margin, and three interrupted brownish lines between that and the base. There is an oblique black dash near the tip of the fore wings, and a nearly continuous black line before the fringe. The hind wings are plain pale ash-coloured, or very light gray with a dusky dot about the middle of each.

The other is called *Anisopteryx pometaria*. This species, although closely resembling the preceding, has many points of difference. The eggs are flattened above, have a central puncture and a brown circle near the border, and are laid side by side in regular and compact masses, and are usually deposited in exposed situations. The newly hatched caterpillar is pale olive green, with the head and horny covering of the upper part of the second segment of a very pale hue. The full-grown caterpillar is also differently marked, the longitudinal lines being fewer in number, but broader and more distinct. The chrysalis is much tougher than that of the former species, being formed of densely spun silk of a buff colour, interwoven on the outside with particles of earth. In the male moth the antennæ have a greater number of joints, there being fifty or more in this species, whereas in *Vernata* there are not quite forty. The wings are less transparent but more glossy, the fore wings brownish gray, but of a darker hue than on the other species, and are crossed by two more regular whitish bands, the outer one enlarging near the apex, where it forms a large pale spot. The hind wings are greyish-brown, with a faint central blackish dot, and usually a more or less distinct white band crossing them. Both of these species are very destructive, when numerous, to apple and other trees.

Linus Woolverton, Grimsby, had considerable experience with these canker-worms, and tried three ways of combatting them. Had found the use of bandages, smeared with tar, pitch tar, not coal tar, the easiest and very successful. After a few days the tar hardens and

it becomes necessary to make a fresh application. Had also used Paris-green mixed with water, applying it with a garden pump. This must be put on very early in the season, as soon as the buds burst, else the mischief will have been done. Had also tried fall ploughing, say in the end of October, with a view of breaking up and exposing the chrysalids, and thought this had a beneficial effect.

Mr. Smith, of Glanford, said that a very sticky substance was made from a mixture of castor-oil and resin, which is the material which was used in the manufacture of the sticky Fly-paper; though in cold weather it might become too hard. Molasses mixed with tar will make it keep soft longer, unless there should be rain, which would wash the tar out.

D. W. Beadle, St. Catharines, stated that in the City of New Haven, Connecticut, he had seen the elm trees, which are the beauty and glory of the place, encircled with a leaden trough, made to fit so snugly to the tree that nothing can creep up between the trough and the tree, and the trough filled with cheap fish oil. These trees were visited every day or two, the troughs cleaned out if found, as they often were, filled with the bodies of these wingless moths, and a fresh supply of oil put in.

The meeting next proceeded to the consideration of the

CODLIN MOTH.

This moth is destructive to our apples, feeding on the pulp of the fruit, making unsightly caverns and galleries, and causing the affected specimens to ripen prematurely. Every one that eats apples has sometimes found this insect in the larva state within the fruit. The great question with fruit-growers is to find some convenient method of destroying them, or, at least, of so lessening their numbers as to diminish considerably the present quantity of wormy fruit.

A. M. Smith, Drummondville, recommends tying strips of cotton or flannel around the trunks of the trees, into which the larvæ may crawl to pass into the chrysalis state. They seem to prefer the soft bit of cotton or woollen to the paper.

P. C. Dempsey, Albury, had noticed that those orchards which were thoroughly tilled every season were comparatively exempt from these insects, while those that were not tilled had them in abundance.

S. T. Carver, Peterboro, writes to the Secretary that he and one of his neighbours, Mr. Allum, put strips of cloth around the trunks of their apple trees last spring and caught several hundred of the larvæ of some kinds of moths; they seemed to be of two kinds, one all brown, the other yellow and green. He thinks they thinned out the codlin moth some, but says that all the neighbours must do the same or it will be of no use.

THE APPLE TREE BORER.

P. C. Dempsey, Albury, said that when this grub has once obtained a lodgment in the tree, the only way is to cut it out or punch it to death with a wire thrust into its burrows, which it makes into the wood. If lye or soap be painted on to the trunk of the tree the first week in June it will destroy the eggs. There is also a borer that infests the peach tree, which he keeps out by tying a rag around the tree at the collar early in spring.

Mr. Jones, of Rochester, N. Y., said that he heaped coal ashes around the tree at the collar, and had found this useful in preventing the borer from attacking the trees. Also that Mr. R. J. Swan spread coal ashes under his currant and gooseberry bushes, and believed that the application saved them from the attacks of the sawfly.

P. E. Bucke, Ottawa, applied coal ashes which had been used as an absorbent of night-soil to the surface of the ground under his currant and gooseberry bushes and had not been troubled with the sawfly.

P. C. Dempsey, Albury, put a barrel of coal ashes under his gooseberry bushes, but the sawfly remained and was as troublesome as ever.

P. E. Bucke read a paper on irrigation, as follows:—

MR. PRESIDENT AND GENTLEMEN,—Last year at this time I read a paper on water as applied to land for the purpose of increasing its productiveness, which excited so many enquiries from a variety of correspondents (who, I presume, read it after it appeared in the press), that I make no apology for taking the same text for a few remarks to-day. Permit

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me first to say that my last address was principally theoretical, or rather as showing what other countries had done in this direction, and how, from the remotest ages of which we had any records, this branch of agriculture has been practised with marked success, not in one quarter of the globe only, but in all the four corners of the world; I propose now to give a few practical methods of applying water, and the general result of such application. From my own experience I find that however expensive it may be for individuals to provide themselves with their own source of supply, I am quite convinced with regard to the utility of irrigation for the fruit and vegetable garden, and that no garden in this climate can be considered perfect without a good quantity of water laid on in iron pipes. I have never yet known a season when water is not required, and it is often a question in this country, of either watering or having no crops at all, especially in those gardens where the soil is sandy or gravelly. To irrigate small gardens in cities or towns of from two to four lots, where the water-works are available, is a very simple matter, the water should be brought from the street, and a turn-off cock placed below the frost line, which may be opened and closed through a wooden tube by raising and lowering a handle. Beyond this shut-off a lead pipe should be brought to within a foot of the surface, and connected there with an iron one, which may be let down below the cut of a spade, having suitable branches coming to the surface for attaching a fifty feet rubber hose at one hundred feet intervals. It will thus be seen that for watering a strip of ground 66 by 198 feet, the first hydrant would be fifty feet from the street, and the next one hundred feet farther up the pipe, which should be so laid as to drain down to the shut-off tap, thereby emptying itself into the ground so as to avoid all danger of freezing and bursting it. An iron pipe of three-quarters of an inch aperture would cost six cents per foot, or \$9 for 150 feet, and fifty feet of rubber hose and couplings, \$6 more. I find it a good plan to have raised supports from three to four feet high to run the hose over, so that it can be moved here and there without dragging it over bushes, plants and vegetables. Of course, for watering lawns this arrangement is not wanted. The fruits requiring water the most are raspberries and strawberries. The former revel in moist soil, which swells the berries and prolongs the season of ripening; the latter are benefited in the same way, and the setting out of runners may be indulged in at any time during the hottest weather if a liberal supply of water is at hand to give the plants a start. From present experience I believe, with an abundance of water, it will pay to set out plants in the early part of July, take one crop off them next spring, turn the plants under and plant again in the same place so soon as runners can be obtained from the old plants for their reproduction. This method would give plants eleven months' growth to the fruiting season, and would completely exclude the May beetle where he is most destructive, as I have found, so far as I am concerned, that he only attacks the old plants. With regard to transplanting currant bushes, they may be moved from one part of the garden to the other at any time after the fruit is gathered. Young plants not yet in bearing may be moved at any time, even when in full leaf, when care is taken and plenty of water used; the same may be said of young grape vines, or any young trees or shrubs; a good supply of the limpid element is invaluable for the transplanting of cabbage, cauliflower, celery, etc., and lettuce grown by means of frequent waterings are very delicious and crisp. One of the most useful applications of water is for the starting of seeds, for late crops, during the hot summer months; and by this means, with frequent waterings, a succession of green peas, spinach, beans, etc., may be kept up all the growing season. When a good pressure of water is had it may be applied, if warm enough, during evenings or cloudy weather by sprinkling; but it should only be run between the rows of plants on the ground during bright sunny days. The watering of transplanted plants should be done with the hose without any nozzle or sprinkler attached. If the water is required at a high part of the garden which the hose will not reach, it may be conveyed in V shaped troughs set on the ends of notched slabs, due regard being had to a good fall at the lower end. These V shaped troughs may sometimes be bought at the mills where they are sold as eavetroughs, but if they cannot be procured, nail two strips of inch board three and four inches wide together, and if they leak throw in a handful of fine sand and the cracks will soon fill up. For irrigating field or garden crops the most inexpensive methods of raising water are by rams, windmills and water-wheels, and in some countries oxen, horses and mules are used for this purpose. Amongst the points chiefly to be considered by persons about to irrigate, the first in im-

portance is drainage. A well drained soil is seldom injured by too copious a supply of water, but one that is imperfectly drained may easily be made into a quagmire. Good drainage therefore should be the first thing provided for. The only soils which do not require draining are those which overlay sandy or gravelly beds. If the soil be drained with tiles, these should be laid three feet deep so as not to be choked with the roots of plants; drains made of gravel or wood should be laid below the frost line. The second is, that no soil should be disturbed when wet, the work of sowing, weeding, cultivating and gathering the mature crops, should be so arranged in reference to watering, or the watering should be so arranged in reference to them, that they may be performed when the soil is dry. If the soil is liable to bake it should be so worked before the surface becomes too hard that the crust may be broken. The third point to be considered is the time of applying the water, which should not be put off at any time during the season until the ground is very dry; water should be applied by sprinkling a day or two before the seed is sown, or transplanting is performed. After sowing or transplanting, water very moderately and do not allow it to run over the ground so as to wash the plants or seeds; moderate and frequent waterings are the best for young growing plants, these waterings should be done by sprinkling, or, if this be impossible, have the beds made quite level with a raised edge, and allow the water to flow over them. Water thus used should be of the same or a higher temperature than the soil. No watering should be done during the clear, sunny or windy days. The effect of wind is to produce evaporation, and thus lower the temperature of the soil. For garden crops frequent and moderate waterings are preferred, and should be given every five days or oftener, as required, due regard being had to the variety of soil and its general appearance. The frequency of watering may be learned by practice, as one soil will require water at shorter intervals than another, and the rainfall will also have to be taken into consideration, so that no fixed rule can be laid down. Many people believe that, though annual vegetable plants require water, the small fruit-garden is capable of withstanding any amount of drought; this is a mistake, as they require a sufficient supply of moisture to enable them to assimilate the manure or life-giving properties of the soil quite as much as do other vegetable products; and when we see, as was the case in 1876, the small size and general blotched appearance of the apples, occasioned, as it was stated at the Centennial by the most experienced pomologists present, from drought, which statement I have never seen contradicted but supported by the various pomological reports from different States, which I have examined, it becomes evident that irrigation properly applied would have remedied the whole difficulty and have given an ample crop of handsome fruit. It is stated that apple trees grown near a body of water never have an "off year" in the way of fruit, but bear regularly every year. I rather doubt this statement, but perhaps some of our Prince Edward County friends may be able to enlighten the meeting on this subject. Every orchardist and gardener is aware that insects are most numerous during dry seasons. Irrigation, it is claimed, would give vigour of growth to the tree and its productive capacity, and greatly mitigate the ravages of these pests. It is hardly necessary to insist on irrigation for orchards and vineyards; the utility has been proved in moister countries than ours—such as France, Italy and Southern Europe, where the olive, orange, lime, almond, fig and other orchard trees come in for their share of a systematic water supply. The Israelites, during their possession of Palestine—the humidity of which climate is very similar to ours, with probably about the same rainfall—though the winters are not near so cold—maintained their gardens and fields in a high state of verdure and fertility by a suitable application of water. There, as here, the rainfall was sufficient for a partial crop, but they found the practice of a liberal supply of water artificially bestowed at stated intervals essential to luxuriance in growth. For my own part I have not come to the conclusion that open air grapes in this climate require water after the fruit is well formed, as it might prolong the time of ripening and thus prove of disadvantage to the crop, but the wild vines, whose fruit turns black in August, principally grow along the banks of streams where the moisture is abundant, and I have not yet found that the fruit on these ripen any later than those grown in my own arid sand. The quantity of water required for irrigating an acre is one half pint per second continually flowing, or 5,400 pints per twenty-four hours, or 86 cubic feet per day. It will readily be seen that so large a supply of water as the above cannot be obtained from any natural spring where a large area is to be irrigated, though these may be

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made to do good service for small gardens or moderate sized pieces of ground. It is seldom artesian wells can be relied on for irrigating purposes, as they do not supply a sufficient volume of water. There are, however, exceptions to this rule. At the Asylum for the Insane, of London, Ontario, a well was sunk 80 feet deep, 8 feet across; but no water being secured at that depth, the Ontario Government concluded to bore down until water was obtained. After drilling 70 feet farther with a drill of 20 inches in diameter, a gravelly bed was reached at 150 feet below the surface, which filled the shaft and large well to within 30 feet of the top with excellent water. A thirty-horse power steam pump has been fitted to it, and the Superintendent of the Asylum informs me that he can pump 1,000,000 gallons of water per day, which would be a sufficient supply for only 200 acres of land. The deepest artesian well in the world is the one now being sunk at Pesth, a city of Hungary; it has already reached a depth of 3,130 feet, and the water rises 35 feet above the surface of the ground, and is 160° F. It is the intention of the city to continue boring until water at a temperature of 178° is obtained for the use of public baths, and it is expected it can be so utilized as to convert the surrounding region into a tropical garden. The present quantity of water obtained is 175,000 gallons per day, and the cost of the works is \$200,000. My own supply is forty pints per minute, and, as I have only two-thirds of an acre to cultivate, I find I have enough to drown out everything in the garden if the water was left running all the time. If water has to be raised a height, the cheapest motive power is, perhaps, the windmill. A self-regulating one of the smallest size costs about \$100, and, when the wind is favourable, will raise two quarts of water per second to a height of 25 feet; but much cheaper ones may be made by any ordinary mechanic at a cost of from \$10 to \$25, which will answer very well. Water raised from cold spring wells must be run into a tank to warm it, from which pipes and hose will be required to distribute it to the various parts of the grounds. Where streams are available the supply of water will be found more plentiful and its application more economical. It will not require storage tanks, as it will always be sufficiently warm to apply at once directly to the soil. Where only a low dam of two or three feet can be constructed the water must be elevated by an under-shot wheel, but where from four to six feet fall can be secured a breast wheel may be employed. If the stream is four feet wide and six inches deep, and the current runs at the rate of two miles per hour, it would give sufficient power to elevate eleven gallons of water per second thirty feet high, or a sufficient supply for about 24 acres of land. Many acres of our soil now supposed to be almost barren, if irrigated would make good the words of promise found in Scripture records, that "seed time and harvest should never more fail," whilst at the present day only a partial or accidental crop is realized. Man is at present at the mercy of the winds and the clouds, and when the rainfall is short and fortune is fickle in providing the needful moisture, the farmer loses his labour and his crops, or only gets a minimum return for his year's toil, whereas, if his exertions had been supplemented by an abundant supply of water, his efforts would have been crowned with success. It is true that large works could only be constructed by communities, but in almost any part of Canada such works could be built at a much less cost than it took to clear the lands originally from the primeval forest, and which the fore-runners of the present generation performed without a tithe of the capital now at the command of the farming population. The actual cost of irrigating works of a permanent character ranges from \$1 per acre when extended over large areas; and when from 10,000 to 50,000 acres are watered total cost will not exceed \$5, if soil and surface are favourable. To clear an average acre of timber land costs from \$12 to \$25, and the damage accruing from stumps, sticks and stones before these rot out or are gathered off, amounts to considerably more. In Europe land is dear; the cost of waterways for canals and ditches are exceedingly heavy; the countries are hilly and uneven, requiring expensive aqueducts to cross valleys and depressions, and there from \$5 to \$10 per acre is annually paid for water alone, besides the rents of the land. The numerous settlements which dot the States and Territories of California, Colorado, Utah and other localities, and the success which has attended the pioneer efforts in these outlying districts, where there have been so many drawbacks incidental to a want of knowledge in irrigation and the requirements of the climate and soil, will tend to attract our rural population towards new enterprises in this direction, and I venture to predict that before the next century turns a half revolution, the desirability of the fertilizing effects of water will be ad-

mitted and acted upon. Thanking you for your patient hearing of this paper I take my seat.

The meeting proceeded to the consideration of the

YELLOW S IN THE PEACH.

A. M. Smith, Drummondville, said that this disease was making its appearance among us. That he had noticed it first on the ridge-road north of Lockport, N. Y., and the past year had seen some diseased trees about Niagara Falls, and a few at Grimsby. The only remedy, he believed, was cutting out all diseased trees and giving good cultivation to those that remained.

Chas. Arnold, Paris, thought that this disease was caused by the winter's frost, which, when severe, injured the tree, made it sickly, and caused the symptoms of disease known as the Yellows.

W. Holton, Hamilton, was inclined to believe that it was owing to impoverishment of the soil.

PROTECTION TO PEACH ORCHARDS.

Mr. Honsberger, Grimsby, has been in the habit of planting his peach trees in the spaces among the apple trees, and letting the peach trees take their chances with the apple, but he was now growing a hedge of Norway spruce to protect his peach trees from the south-west winds.

E. Morden, Drummondville, would protect peach orchards especially on the west and north.

W. Haskins, Hamilton, said that he had fifty acres of peach orchard, and found that those trees did best which were protected from the west, and also had found that good cultivation was very important.

A. M. Smith, Drummondville, would put protection on the west, south-west, and south sides, and thought protection preferable to planting on an elevated site.

W. Holton, Hamilton, had noticed that about Bradford those peach trees did best which were on a rather poor soil and protected, and gave better results than those in the rich hollows.

L. Woolverton, Grimsby, had found elevated knolls very well adapted to peach trees.

THE BEST TREES TO PLANT FOR PROTECTION.

Chief Johnson, of the Six Nation Indians, advocated the sugar maple.

P. C. Dempsey, Albury, would plant the bass-wood, because it would afford not only shelter, but would also supply the bees with most beautiful honey.

W. McKenzie Ross, Chatham, was in favour of the Scotch pine, because it grew very fast.

John Croil, Aultsville, mentioned the Norway spruce; it could be procured at reasonable prices, in large quantities, grew rapidly, could be transplanted safely, and retaining its branches to the very ground, made a most excellent wind-break in winter.

W. Roy, Owen Sound, favoured the Austrian pine, Norway spruce, and Scotch pine.

W. Haskins, Hamilton, suggested the Lombardy poplar.

W. Holton, Hamilton, mentioned the arbor-vitæ, or, as it is commonly called, the white cedar, and the white pine, which, being both natives, could be easily procured by every one.

Mr. Jones, Rochester, N. Y., spoke in favour of the Norway spruce as possessing more good qualities for shelter belts than any other one tree. The European larch was also a very rapid growing tree, and the native white pine had been planted with very good results.

A. M. Smith, Drummondville, thought well of our native balsam spruce for such purposes.

THE BEST FERTILIZER FOR FRUIT TREES.

Mr. Robertson, of Oakville, had found a liberal application of clay around trees growing in sandy soil very beneficial.

L. Woolverton, Grimsby, had tried this plan also with very good results.

P. E. Bucke, Ottawa, would apply mineral phosphates.

John McGill, Oshawa, prefers wood ashes.

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Chas. Arnold, Paris, thought nothing better than barn-yard manure.

Mr. Jones, Rochester, N. Y., would use lime and ashes on heavy soils; had found great benefit from green crops ploughed under, and from barn-yard manure.

Linus Woolverton, Grimsby, presented the report of the Fruit Committee appointed to examine and report upon the fruit on exhibition, which was as follows:—

REPORT OF FRUIT COMMITTEE.

Your Fruit Committee beg to report that:—

Mr. A. M. Smith, of Drummondville, shows samples of the Mann Apple, a kind not much cultivated in Canada. It is an apple very irregular in size, of a not very desirable flavour, but said to be hardy. Also, fair specimens of the Northern Spy and Cranberry Pippin.

Mr. Geo. A. Weese, of Albury, shows specimens of the Ben Davis, an apple which is destined to become valuable on account of its hardy and prolific habits.

Mr. P. C. Dempsey, of Albury, shows some very fine specimens of the Josephine de Malines Pear, in good condition. It has a rich luscious flavour, and a rose coloured flesh; some fair specimens of the Beurre D'Anjou, of the Vicar of Winkfield, and of the Beurre Grise D'Hiver.

All of which is respectfully submitted,

LINUS WOOLVERTON,
P. C. DEMPSEY,
WM. ROY.

On motion to receive and adopt the report, Mr. Holton, Hamilton, desired to express his opinion of the Ben Davis Apple, that while the tree was hardy and productive, the fruit was not of that good quality which planters would be led to expect, that he feared people would be disappointed in the quality.

Chas. Arnold, Paris, expressed the same opinion.

P. C. Dempsey, Albury, stated that one of his neighbours had found the Ben Davis a very profitable market fruit.

The Committee appointed to examine and report on the Seedling Fruits exhibited, presented the following

REPORT ON SEEDLING FRUITS.

The Hastings is a handsome red apple blotched with darker red spots or stripes, and the stem is set in a deep cavity. It is rather over the average size, white juicy flesh, a little over-ripe, slightly aromatic flavour, would recommend it for future general cultivation. Its handsome appearance and size and general good qualities, would make it a favourite market variety. Gives a good crop every year.

Mr. A. M. Smith, of Drummondville, exhibited two Seedling Apples. No. 1, a dull yellow, of unattractive appearance, and not up to many varieties now in cultivation, resembling in appearance the Mann apple, but quite unlike it in crispness and flavour. No. 2, from the grounds of G. J. Burrows, a pleasant looking yellow apple with a bright red cheek, but of no special qualification.

P. E. BUCKE,
J. J. BOWMAN,
GEO. ANDERSON.

The following communication was received from B. Gott:—

Mr. President and Gentlemen of the Fruit Growers' Association of Ontario:—

I regret very much that I shall not be able to be present at your Winter meeting held in the City of Hamilton, on the 6th of February next; but I should like to make a suggestion or two that, if made practicable, might very much encourage and assist the fruit in-

terests of this country. A few days ago I received a copy of the report of the Western New York Horticultural Society for the year 1876, and I must say there is much to be learned from it. I was astonished at the amount of real serviceable work they are doing in the matter of gathering up fruit statistics or the statements of the fruit products and fruit values in the several counties over which they predominate. In these matters, we have been very negligent, and the consequence is in these matters we are in total darkness, and much of the legitimate stimulus and encouragement to a large and national fruit product is consequently withheld from our people. I would therefore respectfully suggest that at the coming meeting of the fruit men of this country, there be an earnest discussion as to the advisability and practicability of gathering up the fruit statistics of this country, and the best method in which it could be done. These statistics should, if possible, contain the number of acres in orchard or garden culture, with the number of trees of apple, pear, plum and cherry, with the amount in bushels annually produced, and the total values of each for the counties in which they were produced. The number of square rods or acres of strawberries, raspberries, gooseberries, and currants, with the amounts of the fruit of each in quarts, with their total approximate value, and the area devoted to the culture of nursery stock also, arranged by the counties in which they are produced and located. I intend to send a form and a sample herewith. Allow me still further to suggest, that as we have not County Horticultural Societies generally established, in my humble opinion the work could be best and most advantageously done through the instrumentality of our Agricultural County Societies by means of the influence of our Minister of Agriculture. This I consider practicable in two ways—First by inculcating the matter upon the several County Agricultural Societies, and they by Committees formed for the purpose; or, second, by instructions and printed forms in the hands of the several municipal assessors. This last I consider the most practicable and the most thorough, and would, doubtless, be the most satisfactory. If it be impracticable to do this work with respect to the several fruits it is our privilege to grow, I would still suggest that at least it be done for apples, and that the work be done at least, twice every decade.

W. Brown Smith, of Syracuse, sent the following report. Below please find an estimate of the various fruits grown in Onondaga, during the year 1876; also, their average market values. Our pear crop has been unusually light; apples were abundant, but of very inferior quality and low prices; quinces, very light crop.

FROM ONONDAGA COUNTY.

275,000 bushels Apples, best, at 30 cents	\$82,500 00
550,000 " " cider, at 15 cents	82,500 00
10,000 bushels Pears, at \$2.....	20,000 00
6,000 bushels Plums, at \$2.....	12,000 00
10,000 bushels Cherries, at \$2	20,000 00
Quinces, small crop	
300,000 lbs. Grapes, at 6 cents.....	18,000 00
1100,000 quarts Strawberries, at 6 cents.....	66,000 00
100,000 quarts Raspberries, at 8 cents	8,000 00
60,000 lbs. Currants, at 6 cents	3,600 00
16,000 quarts Gooseberries, at 6 cents	960 00
Blackberries, few.	
Total.....	\$313,560 00

I am, Gentlemen,
Yours, very truly,
B. GOTT.

Arkona Nurseries, Jan. 16, 1878.

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SUMMER MEETING.

The Summer Meeting was held in the Council Chamber, City Hall, St. Catharines, on Wednesday, July 10th, 1878.

President Burnet being in the chair, the Secretary read the minutes of last meeting, which were approved.

The following questions were submitted for discussion :

SUBJECTS FOR DISCUSSION.

1. How far have the recent frosts injured the fruit crops throughout Ontario.
2. What are the prospects with regard to the crop of apples, pears, plums, peaches and grapes ?
3. What new varieties of strawberries are promising well ?
4. What methods of cultivation are best adapted for the successful growing of small fruits ?
5. What varieties of Raspberries are succeeding well ?
6. Miscellaneous discussion.
7. Is the Robin beneficial or injurious to fruit-growers ?

The first question was then taken up and discussed at considerable length.

Chief Johnson, Tuscarora, remarked that his grapes were very badly hurt, that he would not have half a dozen bunches.

Mr. Taylor, Hamilton—My grapes will be a medium crop ; further back from the lake, near the mountain, they are injured more than mine, the water saved mine.

P. C. Dempsey, of Albury, said his crops of strawberries and grapes were badly damaged by frosts, but his plums were most abundant. He said his Flemish Beauty pear had mildewed badly, strawberry crop had turned out fair ; the apple crop was rather thin.

L. Woolverton, Grimsby, said apples and pears in his neighbourhood were not injured. Peaches had suffered considerably. The cherry crop was almost a total failure. Currants are abundant ; grapes have not been injured.

A. Morse, Smithville, said peaches had suffered considerably ; plums were much injured ; pears half a crop ; Glout Morceaux all killed ; White Doyenne tolerably good ; stood frost well ; Louise Bonne de Jersey half a crop ; the Sheldons not hurt at all ; Seckels were good ; raspberries generally good, Red Antwerp especially being very good ; apples half a crop.

W. Saunders, London, said the frosts of May 12th and 13th had been very destructive in his neighbourhood. Cherries are almost a total failure, except the Maydukes, which gave a fair crop. The injury to apples was only sectional, but that to pears and grapes was general. Crab apples suffered worse than any others. His grape vines looked luxuriant in foliage, but little or no fruit. Apples had not suffered so much from codlin moth as from drought.

W. H. Read, Port Dalhousie, said the frost had not done so much injury on his farm, but the wet weather and damp, raw, east winds had caused much dropping of fruit. Grapes were well advanced, and fair crops. The gooseberries had been nipped by frost, yet still the crop was good and free from disease. Cherries a failure. Plums tolerably fair ; the curculio, as usual, was on hand. Mr. Gribble, his neighbour, smoked them with coal tar, which he claimed to be a perfect remedy. He set fire to the tar early in the morning and produced a dense smoke through the foliage of the trees. This remedy, like others, required diligence and industry. He found the method of jarring the trees and catching them in a sheet fairly successful. Pear crop a failure, owing to cold, damp weather, rather than frost. The heavy rains had washed off the pollen so that the fruit could not be perfected. In dry weather the air is full of yellow particles, which some people called sulphur, but which in reality was pollen.

Chas. Arnold, of Paris, attributed the damage done to fruit mainly to frost. Early blooming plums had been killed, but some where the fruit had set, escaped. Late varieties had not suffered. Pear trees showed but few blossoms. Apples would be an immense crop. There was not a perfect raspberry in his section, especially Black Caps. Black

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currants poor. Gooseberries free from mildew, moderate crop, with fewer insects. Late cherries a failure.

Wm. Roy, Owen Sound—Strawberry crop bad; about one-fourth crop of plums; apples materially injured either by rains or frost, or both—an average crop. No injury to pears, grapes or peaches.

W. McK. Ross, Chatham, spoke of ravages to strawberries and English cherries, but the common red cherry good. Peaches particularly good; also a good yield of pears. Apples good around Lake Erie. Grapes failed.

Jonas Neff, Port Colborne—Pears promised well before the frost. In less than three weeks not a pear was left except here and there one on the Flemish Beauty. Apples a failure. No plums or peaches of any account. An abundance of gooseberries and currants. Took only six quarts of strawberries off a quarter acre patch. They were of the New Dominion variety. Cherries a failure. Grapes were frozen to last year's wood. A plum tree which had been smoked with coal tar and sulphur, was loaded with fruit, while other trees in the same garden failed to perfect any fruit.

The President introduced Mr. Werden, a veteran fruit grower, who made some general observations on fruit culture. He recommended Lee's prolific black currants. He found no advantage in binding his plum trees with bandages smeared with coal tar; he had not tried smoking the trees.

Joseph Laing, of St. Thomas, corroborated generally the statements of previous speakers in reference to damage by frosts. A friend of his had used with complete success for three years, smoking pans with coal tar, in destroying curculio.

Geo. Leslie, of Toronto, gave an equally discouraging account of fruit prospects. In pears, Flemish Beauty had fared the best.

A. M. Smith, of Drummondville, said every description of fruit had suffered with him, and none would average more than half a crop.

J. Honsberger, of Jordan, reported apples, especially Northern Spy, a good yield. Peaches not more than half a crop. Crawford's and Foster's most injured by frost. The early Beatrice well loaded.

Col. Magill, Oshawa—Pear crop a failure; plums only one-third of a crop. Grapes good; apples half a crop.

Gage J. Miller, Niagara—Grapes completely cut down, after making six inches of wood; had fruited since from second wood; apples had escaped pretty well, but would not have more than half a crop. Pears injured, but promised fairly. Had a pear tree 100 years old, which he had grafted. Near the ground, owing to shelter of foliage above, they had escaped well, while his younger trees would not yield much. His plum trees never showed better; had not seen a curculio on his trees this year. He used last year the sheet and mallet. Had never smoked them. Peaches, light crop, currants good.

Messrs. Leslie, Werden, Roy and Dempsey, were appointed a committee to report on seedling fruit on exhibition.

The second question having been fully answered by the discussion on the First, the meeting proceeded to the consideration of the Third question.

WHAT NEW VARIETIES OF STRAWBERRIES ARE PROMISING WELL?

Mr. Biggar, of Drummondville, said the Great American promised well. He said the New Dominion was an excellent berry.

J. Laing, St. Thomas, says that the Monarch of the West is doing well.

Mr. Taylor cultivated only the Wilson.

A. Morse had some new varieties, but not sufficiently tested to report.

A. M. Smith, Drummondville, had several new varieties, one known as Arnold's 40 promised well. Among the most promising he had fruited was one from Ohio, known as the Cumberland Triumph. It yielded better than the Wilson. Had fruited some plants of the Great American. It was a fair variety, large size, and a little later than the Wilson. The Monarch of the West had good qualities, but was a little soft and did not ripen evenly. The Stirling bore sparingly this year, but was of fine flavour. The Late

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Cone was of fine flavour, but not very productive. The Dominion did not do very well with him.

E. Morden, of Drummondville, said there was a new variety known as Long John. It seemed wonderfully productive. He could not speak as to its quality. Boyden's 30 he recommended for home use, but not good on sandy soil. On rich, loamy soil, it might be profitable for market.

Dr. Watt, of Niagara, could not recommend Boyden's 30. He did not care much for Wilson's Albany, which was beaten by several other well-known varieties. Captain Jack was a nice fruit, but fruited too near the ground. He liked the Col. Cheney. The Late Kentucky was so delicate that it would hardly bear handling.

Jonas Neff, Port Colborne, cultivated only the Dominion, which did well with him.

Col. Magill, Oshawa, recommended Arnold's No. 1. The New Dominion has not done as well with me as I expected.

Mr. Stewart, Virgil.—His favourites were the Duchess and Crescent Seedling. The first was medium sized, quality good, and produced almost equal to the Wilson. The Crescent Seedling was very productive, fair size, and good quality. He also recommended Green Prolific, and Col. Cheney, the latter as productive as the Wilson, but fruit not always perfect. The Capt. Jack was of small size, very productive, and of good quality. The Great American, he thought, would fail, the plant being weak and sickly. He could get no runners from it. Green Prolific had done well with him. He thought the Crescent Seedling the most promising he had tested.

Mr. Gilchrist, of Guelph, said Arnold's No. 7 did not do well with him. The New Dominion sold well on account of its looks, but was too soft to ship. Col. Cheney has done well.

Allen Moyer, of Jordan Station, did not think much of the Monarch. The Monarch was soft, and by no means prolific.

Mr. Honsberger, Jordan, was cultivating about a dozen varieties. He had shipped New Dominion to Montreal and Ottawa; had no complaints of it. This year the berries were small, due probably to rust. He preferred the Wilson and the Dominion. He grew berries for profit and not for pleasure only.

A. M. Smith, Drummondville, had sent a few of the New Dominion to Hamilton, and a few to Toronto; for these he got 15 cents per quart, while the Wilson only brought 10 cents.

THE FOURTH QUESTION.—WHAT METHODS OF CULTIVATION ARE BEST ADAPTED FOR THE SUCCESSFUL GROWING OF SMALL FRUITS ?

Linus Woolverton, Grimbsy, spoke of blackberries and currants. He found it best to cut blackberry bushes at this season of the year to about 4 feet, which made the fruit larger in size and better in quality. He believed in high cultivation for the currant, and plenty of manure.

Mr. Stewart, Virgil, near Niagara, thought it well to keep the ground stirred for small fruits, and plenty of fertilizers. He also believed in cutting back.

A. Morse, Smithville, did not believe in too much fertilization. It gave too much growth to the wood and too little fruit. In strawberries the runners should be kept cut, unless where it was intended to propagate. He planted 18 inches apart both ways. He tried mulching with spent hops on his vines and came near destroying them.

C. Arnold, Paris, had an idea of water and straw as his fertilizer for strawberries. He tried strong manure, which killed them. On a poor soil he had a fair crop. For raspberries, loose soil, tan bark and water. Salt improved his raspberries, but killed his strawberries. His blackberries were always winter killed. Gooseberries require a rich soil.

Geo. Leslie, Toronto, said after a raspberry patch had fruited four or five years it paid to dig up the vines and plant them afresh. He found advantage in mulching. Ground could not be made too rich.

[The President, Mr. Burnett, had to leave by train at this time, and Mr. Roy, of Owen Sound, took his place.]

Geo. Leslie believed in the Whitesmith gooseberry, which was advantaged by being well watered and the ground enriched.

A. M. Smith, Drummondville, said he removed the old canes as soon as the fruit was gathered so as to give air and light to the young canes. He cultivated strawberries on a sandy soil. He did not approve of too much water in their culture. It tended to soften the berries, which would not bear shipment. His experience on sandy soil was against the use of rotten stable manure the same year as plants were put out. The land should be prepared the previous year. He believed in keeping the strawberry patch clear of weeds. He ploughed deep for small fruits. He found staking raspberries necessary, especially Black Caps.

W. Saunders, London, would renew plantations of raspberries as well as of strawberries, and would mulch them liberally. He would manure strawberries heavily. The English gooseberries are very subject to mildew; it was a fungus which attacked both fruit and leaves. A grower in London cultivates the Whitesmith, and uses water freely, those abundantly watered were free from mildew.

E. Morden, Drummondville, thins out the new canes of raspberry also, when too numerous. He grows strawberries for market; had too much water on his strawberries this year; during the picking season it spoiled the fruit. Raw manure on strawberries on sandy land kills the plants; would plow deep for all small fruits. Grow only the Houghton Seedling gooseberry; they are very fine.

Dr. Watt, Niagara, said coal ashes mixed with night soil and sulphuric acid made a good fertilizer for strawberries. He don't believe in spading raspberries; would give only surface cultivation. He plants red raspberries five feet apart each way, and leaves a roadway every five or six rows, and gives them a heavy dressing of salt. Would cut down every second plant and grow only new canes on that stool for next year's fruit, thus alternating each year so as not to grow canes for next year, and fruit the same season from the same plant. It is not possible to manure too much on the surface.

W. McK. Ross, Chatham.—Currants should be highly manured.

P. C. Dempsey, Albury, would cultivate strawberries thoroughly, stopping the cultivation only during the picking season. Barn-yard manure affords a refuge for insects; think water enough without manure; would use superphosphates.

Col. John McGill, Oshawa, advocated plenty of manure, mulching with short straw, frequent stirring of the soil and a plentiful supply of water, leaving three to four canes in a hill.

FIFTH QUESTION—WHAT VARIETIES OF RASPBERRIES ARE SUCCEEDING WELL.

Chief Johnson, Tuscarora.—I have grown the Mammoth Cluster, but the fruit is not equal to that on exhibition to-day. The Philadelphia gives me the best satisfaction of any, as yet. I have had it some six years, it is excellent for canning. The Clarke and Brandywine grow vigorous and give good fruit.

Mr. Honsberger, Jordan.—For Black Caps I grew the Davison's Thornless and Mammoth Cluster. Davison's Thornless is not good for shipping, and the plant is not hardy. I value the Highland Hardy on account of its earliness, though the fruit is only of medium size. The Clarke comes next; it is very productive; berries large, bright red. The Philadelphia is so dark in colour that it does not sell as well as the Clarke, and is a softer berry. I cannot recommend the Brandywine, it is not prolific. The Herstine is a fine large berry, but not as prolific as some others. I prefer Highland Hardy and Clarke.

A. M. Smith, Drummondville, said :—I cannot get on without Davison's Thornless, it is a week earlier than the other Black Caps, and hardy enough with me. The Highland Hardy is a valuable berry, coming in before the strawberries are gone, and harvested by the time other sorts are ripe. Am pleased with the Clarke for a home market, it is hardy, and, though not as prolific a bearer as the Philadelphia, sells better on account of its brighter colour. The Philadelphia is the most prolific of all; the Herstine is soft; the Brandywine suckers badly, yet it is a good shipper, though not as heavy a cropper as some; the Franconia is too tender.

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R. B. Werden, St. Catharines.—The Fastloff is an excellent bearer, and sells best in a near market; the Clarke comes next, though I do not like it as well as I do the Franconia. The soil should be stirred frequently and not very deep.

W. H. Reed, Port Dalhousie.—I find the Black Caps subject to borers and tree crickets. Read's Hybrid is a fine near market sort; it will command two cents per quart more than any other in this market; it is hardy and productive.

Chas. Arnold, Paris.—We do not seem to have made any progress in the quality of our raspberries during the past twenty years, but we have raised some that are more hardy, and therefore better suited to our climate. I am not fond of the Black Caps. It does not pay to grow raspberries for market in Paris. Brinckle's Orange is too tender; the Diadem is good in quality and hardy; the Clarke is good. The best shipping raspberry is my Number Seven, it is large. The Saunders' raspberry has given very poor satisfaction; the Philadelphia gives large crops. In point of flavour, the Diadem is one of the best.

P. C. Dempsey, Albany.—The Black Caps succeed well with us, and are more profitable than the red. Some are partial to the Doolittle. The Philadelphia is the most productive of all the raspberries.

Col. John McGill, Oshawa.—The Philadelphia is the most prolific of the red varieties, and most profitable by two to one.

E. Morden, Drummondville.—The Philadelphia is in raspberries what the Wilson is among strawberries.

The Committee appointed to examine the fruits on exhibition, brought in the following report:—

REPORT OF FRUIT COMMITTEE

ST. CATHARINES, July 10th, 1878.

Your Committee beg to report that they find fruit exhibited as follows:—

Geo. Leslie and Son, Toronto Nurseries, show Franconia, Brinckle's Orange and Kirtland raspberries; Golden Lion, Sulphur Yellow and Downing gooseberries; and Napoleon Bigarreau cherries.

Mr. Chas. Scott, Melville Mills, shows a seedling gooseberry of good size, resembling the Whitesmith, of considerable promise. Mr. Scott states that the bush is hardy, productive and has been free from mildew for ten years.

Mr. W. H. Read, of Port Dalhousie, shows Brinckle's Orange and a Red Hybrid raspberry; and twenty varieties of seedling gooseberries, mostly of the English type, all of which, Mr. Read states, have proved with him perfectly free from mildew on a sandy-loam soil. One of these varieties, of large size, he names the "Gem," and another the "Gibraltar," also the Golden Ball, "Hiawatha" and Minnehaha, all extra fine berries, of largest size. As none of the berries are ripe, we can say nothing of quality, but look upon these berries as an advance in the growing of this *fine* fruit, and very encouraging to the production of new varieties and the more extended cultivation of this fruit; he also shows two kinds of gooseberries, with a large strain of native blood, and they are fully double the size of the Downing, of much the same colour, and extremely productive. This we can say, as the berries are shown upon the branch. We think they would prove very valuable for general cultivation.

Mr. A. M. Smith, Grimsby, shows two kinds of seedling Black Cap raspberries, also Mammoth Cluster, Ganargna and Golden Thornless Cap raspberries. As for the seedlings, we notice no distinguishing characteristics. Mr. Smith also shows an interesting collection of seven varieties of raspberries, as follows:—Brandywine, Naomi, Clarke, Herstine, Highland Hardy, Philadelphia, Diadem.

Mr. Moyer, of Jordan Station, places on exhibition the following established varieties, all of very creditable production, viz.:—Red Victoria and Red Cherry currants; Amazon, Highland Hardy, Philadelphia and Clarke raspberries; Mammoth Cluster and Doolittle raspberries; and Black Naples currants, this latter of great excellence.

W. H. Read shows a remarkably large cane of blackberry, a Hybrid, between the Lawton and the Boston High Bush, larger and more prolific than either parent.

While the exhibition of fruits is excellent so far as it goes, your Committee cannot refrain expressing their regret that the quantity shown is so small, there being only four exhibitors at this meeting, which is held right in the heart of the leading fruit-growing section of Canada.

GEO. LESLIE, JR.,
P. C. DEMPSEY,
WM. ROY,
R. P. WERDEN.

The meeting then adjourned, to meet at Sarnia, in September.

AUTUMN MEETING.

This meeting was held in the Town Hall, Sarnia, on Wednesday, the 11th day of September, 1878.

The President being absent, Mr. Chas. Arnold was chosen Chairman of the meeting. The minutes of the summer meeting were read and approved. Messrs. Ebenezer Watson, George Mill, and Townsend G. Vidal, were appointed a Committee to examine the seedling fruits exhibited; and Messrs. Joshua Adams, Hugh Smith, and Charles Duncan, a Committee to prepare a list of subjects for discussion.

While the Committee was engaged in the consideration of desirable topics for the meeting to discuss, it was suggested that the subject of pear culture and pear blight be taken up.

Mr. Mowbray had not seen pear blight, but was troubled with the frost. Soil, heavy clay; some sorts winter killed. The Flemish Beauty is the most hardy.

E. Watson succeeded in getting some fine pears, but his trees had always, sooner or later, been destroyed by blight. The frost this season has injured the fruit crop on farms away from the lake shore, but near the water the crop is good. My soil is a clay, so also is Mr. Mowbray's. My farm is not near the water, not as near as his. The land is well drained.

James Watson—The pear blight had not injured my trees much until lately. My soil is clay, and situate on the banks of a creek. The Flemish Beauty has not suffered in any way, in the Township of Moore. I have applied a mixture of clay, lime, and sulphur, wrapped around the trunk of the tree, over the spots affected with blight. The Bartlett is too tender, the Beurre d'Anjou has stood the winter. The Baldwin and Rhode Island Greening Apple trees have suffered from the cold. The Doyenne d'Ete and Beurre Clairgeau Pears stood well. The Doyenne d'Ete ripened in the end of July. Clapp's Favourite does well, is hardy and good.

Wm. Saunders asked about Eliot's Early Pear, but none present were acquainted with it.

Charles Duncan, Moore Township—The Flemish Beauty and Clapp's Favourite promise to be hardy, and suited to this locality. There has not been any blight on them in my grounds. Have found leached ashes very beneficial to trees. The frost has injured the fruit this year.

Thomas Watson, Sarnia—I find that the Flemish Beauty, Clapp's Favourite, and all other sorts of pears lose their leaves, and spot and curl up. Soil, sandy loam.

Joseph Watson hoes and digs around his pear trees, and believes it to be very beneficial to them.

Joshua Payne neither digs nor ploughs around his pear trees. The Flemish Beauty does well, some of the trees, however, blight. His soil is clay. He sometimes spreads a little manure on the ground around his trees. The Bartlett does well, and the Seckel, Clapp's Favourite, and Beurre Clairgeau. Thinks they do best without cultivation, and that the manure serves as a mulch, and keeps the ground from cracking in a drouth.

Thomas Watson—I put sawdust and chips around my trees, and I find they are infested with the borer. Is this mulch the cause?

Wm. Saunders, London—No, the sawdust, chips, &c., are not the cause of the presence of the borer, it was only a coincidence. Ashes are a good fertilizer for fruit trees, and will

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prevent the borer from attacking them if applied to the trees. Soap or any alkaline wash, as a solution of potash, will prevent the beetles from laying their eggs, and will kill them if laid, though it will not kill the grubs if they have bored into the wood of the tree.

E. Watson—I never mulched my trees with chips or sawdust, but I have had plenty of borers. I think a thin coating of pine tar useful in keeping out the borer.

James Dougall, Windsor—I understand that inquiry has been made concerning Elliot's Early Pear, and may say that last year all my trees of this variety blighted, and this year they have not produced any fruit. It is a larger pear and ripens a week earlier than the Doyenne d' Ete; it is also a strong grower, very hardy, and of superior quality.

The committee on subjects for discussion submitted their report, which was received and adopted, and the meeting proceeded to the consideration of the first question, namely:

What varieties of fruit are successfully cultivated in the district along the shore of Lake Huron, and the river St. Clair, and how far has the fruit crop in that district been injured by the spring frosts this year?

Thomas C. Wheatley, Sarnia, on the lake shore, said that he cultivates only apples and peaches. He grows the Early Harvest Apple and the Red Astracan. The Early Harvest is subject to spot badly, the Red Astracan is the most profitable. The Porter yields well, does not spot, but is not so marketable as the red apples. I want a red apple to come in just after the Red Astracan, and have just planted the Benoni, in the hope that it will supply the deficiency. The Rhode Island Greening fruits abundantly, has a very good reputation and is much inquired for. The Baldwin is not as even in size as the Greening, but it keeps until May. The Cayuga Red Streak bears young and heavily, but the fruit is too large. The Spitzenburg spots and cracks badly on very sandy soil. The Peewaukee has just fruited with me.

Of peaches I have planted the Early Crawford largely, but do not find it to be a good bearer, it never yields more than a quarter crop. Hale's Early did not rot at first, but as the trees grew older the fruit rotted badly. The Crawford's Late generally ripens with me, but it is not much more prolific than the Early Crawford. The Serrate Early York does well with me, and am pleased with the Amsden. The Large Early York is unproductive. Old Mixon succeeds well, it is large, attractive and profitable.

The frost did little injury to the large fruits, but it hurt the strawberries. Raspberries were a fine crop. Peaches were not hurt by the frost last May, though we had from two to five degrees of frost.

D. Nesbit, Plympton—With me the peaches usually winter kill. I am five miles from the lake shore. I notice that the seedling peaches were not injured by the frost last May, but it killed all the grape vines. My Oswego Beurre pear has a fine crop, but the other pear trees have no fruit. My soil is clay mixed with gravel.

James Watson—My soil is stiff clay, and my peach trees are killed out, they will not stand the winter.

James Johnson, Bosanquet—I grow chiefly apples and peaches, on the lake shore. Apples do well, we do not have any summer frosts to hurt anything. I have the Early Harvest, Sweet Bough, Red Astracan, Fall Pippin, St. Lawrence, Autumn Strawberry, and Dutchess of Oldenburg. I have a good crop this year, but back from the lake the frost of last May injured the crop very much. In the winters of '72, '73, '74 and '75 the Hale's Early Peach and the Early Crawford were seriously hurt. The Old Mixon being more hardy was not hurt. We are not subject to summer frosts within a mile of the lake. I lost a few pear trees last year with blight, this spring I whitewashed the trunks with lime, and so far this season have not had any blight. The Baldwin Apple bears well, also the Rhode Island Greening. The Spitzenberg bears well, but is a shorter lived tree than the others. I have a tree called the Winesap that will yield thirty bushels this year; the tree is thirty years old. The Concord, Isabella, Salem, and Adirondac grapes ripen well. Plums do well, and good crops can be secured by jarring the trees and catching the curculio.

John Carr, Sarnia township—In our section peach trees can not be grown well, they winter kill. My land is sheltered on three sides by bush, shall have a good crop of apples

this year. Pear trees and cherry trees do well. Plums do not fruit well, the fruit rots badly.

James Dougall, Windsor, advised that the rotting plums be carefully gathered and taken away, for the rot spreads if they are allowed to remain.

T. D. Watson, Sarnia Township—With us peach trees all die down to the ground. Neither the English cherry trees nor the Maydukes will bear any fruit, they do not blossom, the trees grow well. Seedling peaches grow and bear fruit. The fruit in my section was killed this year by a late spring frost. Close to the lake and river they escape these late frosts.

James Watson—The Cherry does not thrive on the clay soil with us, but on the sandy soil it does well, but on the clay even the Mayduke and Kentish will not thrive.

Chas. Duncan, Moore.—Cherry trees gum and die on clay soil. Summer frosts usually injure all of our fruit crops, we are very subject to summer frosts. The apples all fell off after the late frost this year.

Hugh Smith, Sarnia—The Kentish cherry is usually grown from suckers. It is a red cherry, the tree is hardy and productive.

Thomas D. Watson, Sarnia Township—I cannot grow any quinces, I have tried manuring them with salt, ashes, &c., &c., but cannot get any fruit.

BORER IN THE PEACH.

The meeting proceeded to discuss the question to what extent the Peach trees have been injured by the borer or other insects affecting the root or the collar of the trees.

James Dougall, Windsor, said he was not troubled with the borer.

T. C. Wheatley had seen a few, but had not been much troubled by them.

D. Nesbit had no borer.

James Watson had no peach trees and therefore no borer.

W. McKenzie Ross, Chatham, had plenty of borers, had taken forty-seven out of one tree. He had also found a snapping beetle about half an inch long laying its eggs in the crevices of the bark of peach trees at the collar.

W. Saunders, London—The larva of the click beetles, do not bore into trees, but in the beetle state they are fond of the gum of fruit trees and come to eat the gum. There is also often found in the gum exuding from our fruit trees many hundreds or it may be thousands of the larva of a small fly, these also feed on the gum but do not harm the tree. The peach-tree borer is the larva of a moth, one of the Sphingidæ, it is a dark blue moth of a wasp-like form, the male has all the wings transparent, but bordered and veined with steel-blue, the female has the fore wings opaque blue, and the hind wings only transparent and bordered with blue like the wings of the male, and the middle of the abdomen encircled by a broad orange-coloured belt.

MISCELLANEOUS.

Hon. A. Vidal asked whether there was any ground for the statement he had frequently heard, but which he did not credit, that driving nails into peach trees would keep off the borer. Mr. Saunders replied that it did no good whatever.

T. O. Watson asked whether boring a hole into plum trees, filling with sulphur, and then plugging, had any effect in killing off the curculio? James Dougall replied, no, none at all.

Hon. A. Vidal said that he had applied boiling water to the collar of a peach tree infested with the borer, and it seemed to kill them.

John Bartlett, Warwick, inquired about the Utah Hybrid Cherry, which was being sold by the pedlars through the country. James Dougall, Windsor, replied that it is not a cherry at all, it is more nearly allied to the plum. The tree is only a small bush, and the fruit is worthless.

REMEDIES FOR THE CURCULIO.

Chas. Arnold, Paris, the best way is to jar the tree, catch the bug, and pinch his head off.

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James Dougall, Windsor, I find that a hen and chickens cooped under the tree devour a great many curculios, and secure me a crop of plums.

Hon. A. Vidal, Sarnia, said that Mr. Baubee made a hen yard around his plum trees, and had no more trouble with the curculio.

James Lambert, Sarnia, tried the jarring plan with three trees, and these are breaking down with fruit.

Townsend G. Vidal, Sarnia, tried a coating of mortar under one tree out of nine with good results. Also recommends burning raw petroleum under the trees.

D. Nesbit thought the coal smoke from a forge had saved his plums.

T. C. Wheatley—Can Paris-green be of any use? Can they feed on plum leaves?

Mr. Saunders—No, it is of no use, chickens are useful in picking up the curculio as far as they are able; but a plum orchard of four hundred trees is too much for the chickens. The jarring method is the best, it is easier done than smoking with petroleum, and more pleasant. Have tried smoking alternate rows in my plum orchard, and had fruit on those trees which were smoked, but prefer the jarring. I begin to jar early, before the blossoms fall, keep up the jarring every day for a week, then every other day for the next week, then two or three times a week. It is necessary to use a buffer and a mallet to prevent bruising the trees, or else saw off a limb, leaving a stub, and strike upon the stub, or else strike upon an iron spike driven into the trunk of the tree.

Hon. A. Vidal tried putting a shouldered piece of wood into a hole in the trunk of the tree, and striking upon that, and found it better than mallet and buffer, the buffer deadened the blow. In order to be most effective, the blow needs to be sharp.

James Dougall said that one of his neighbours had tried smoking and failed to keep off the curculio.

W. Saunders caught a number of curculios and put them in a box with a glass top, and on looking at them in the night by lamp-light, found them flying about, and therefore concludes that they fly at night as well as during the day.

Joshua Adams asked if they were local. There were none, he believed, at Mitchell, Owen Sound, and many other places.

James Dougall replied that to some extent they were local.

W. Saunders said it is local as much as the potato-bug is local, but extends its limits. A few years ago there were no curculios at Goderich, now they are there in full force, and plum growers were discouraged. It is not yet at Owen Sound, but will be bye and bye. Our Secretary remembers when there were none in the Niagara District. I can remember when it was not known about London. The rot in the plum is caused by a fungus; wet and warm weather favour the spread of this fungus.

James Dougall—I advise the careful picking off of all rotten plums. In older times we had no curculio, then one could raise not only plums, but plenty of apricots and nectarines.

T. C. Wheatley.—We are now troubled with curculio in our peaches, and they are increasing. We must jar to save our peaches.

Hugh Smith, Sarnia, explained to the meeting his plan of changing dwarf trees to Standards by inserting the top of a seedling under the bark of the tree and planting the seedling root in the soil.

TREES BEST ADAPTED FOR HEDGES AND SHELTER

Chas. Arnold preferred the Norway Spruce.

D. W. Beadle said that the Norway Spruce, if planted out when it was from one to two feet high, was the most economical tree to plant for shelter.

W. Saunders desired to call attention to what Mr. Beadle had just said. My neighbour, in his anxiety to have a shelter belt immediately, planted out some fine Norway Spruce, fully four feet high; those that I planted were not over eighteen inches high. Now mine are from ten to twelve feet high, and his are not much higher than when he planted them.

W. McKenzie Ross named also the Arbor-vitæ, Scotch Pine and Austrian Pine.

James Dougall said that the Norway Spruce was the fastest grower, adapted to all soils, and the best tree to plant for shelter, as it retained its branches quite to the ground

 REPORTS OF TREES AND PLANTS RECEIVED FROM THE ASSOCIATION.

Report from A. Ramsay, Brantford.

I have been a member for five years, and this is my first Report. The Beurre D'Anjou is growing well but has not fruited yet.

The Othello Grape grew well, and fruited two years, but the vine was too tender ; it froze back to the ground twice, the second and fourth years, and I then dug it up.

The Grimes' Golden Pippin did not grow.

The Swayzie Pomme Grise would have done well, but I had not a proper place to set it out, so the sheep destroyed it the second year.

The raspberries which I received last spring started nicely, but a black grub gnawed off the new shoot, which was near the ground. The strawberries threw out a few runners.

The Downing Gooseberry has made a good growth, and is free from mildew ; it fruited last year, and about half of the berries died when nearly full grown, from the effects of insects.

The Clapp's F. Pear is making a good growth ; no fruit yet.

The Flemish Beauty Pear Tree is doing well. I might say that I have 73 Flemish Beauty Pear Trees, planted at the same time, and they have all made fine growth, but four of them blighted last year. I have also 30 Clapp's Favourites, and none of them blighted last year, but two years ago one died from it. I have 217 pear trees in all. The blight was worse here last year than I have ever known it : it was worse on the old trees than it was on the young.

The Glass Seedling Plum is doing well. I have some trees of them that have been transplanted three years, and they have made vigorous growth and had fruit on last year, which has good keeping qualities, and the trees are free from black-knot, while the Lombard alongside of it was affected.

The Salem Grape is a vigorous grower and very hardy, as it has stood the winter for five years with me without protection, and the grapes are my favourites.

Report from Wm. J. Mansell, Toronto.

The Glass Plum has grown into a beautiful tree, eight or nine feet high ; it has not fruited yet, I expect it will in the coming year. The Diadem Raspberry has made a strong growth and bore a good crop of fruit, and the seedling strawberries received from Mr. Arnold proved very productive, the two original plants bearing over one hundred and fifty berries at one time. The Burnet Grape, received in the spring of the present year, has grown into a nice vine, with well ripened wood, and will, I doubt not, fruit in 1879.

Report from Adrian H. Abbott, Warwick.

The Salem Grape grew well the first summer, but the frost killed the new growth ; the second year it started again from the root, but the frost killed it as before. Downing's Gooseberry was dead when I got it. By some means or other I got no pear. The raspberry died, the strawberries are doing well. The Glass Plum is making vigorous growth ; it is a fine large tree, it blossomed last year, but did not have any fruit. My land is a sandy loam.

Report from John McIntyre, Appin.

All the trees, &c., that I got from the Association have done well except the Beurre Clairgeau Pear, and it is sprouting out from the roots again. I never had any luck with vines. The Burnet vine was growing nicely until the frost in May last year nipped it. You will please send on the Report for 1878 as soon as printed.

Report from A. Milne, Langford.

Having been admitted a member of the Association in 1874, I received a Salem Grape and Downing Gooseberry, which reached me in good order. I immediately planted them,

and that Downing Gooseberry turns off good crops of the Houghton seedling species of no great merit.

The grape commenced to leaf in June, and grew with vigour till October, when it was checked by an early frost. I covered it up and over with straw to protect it from the chilly blasts of winter; next spring all the top was dead, which I cut off, and during the summer of 1875 two shoots started, but did not grow ten inches in length. I cut them back, and in 1876 two shoots grew three and four feet respectively; cut them back, and 1877 have grown about ten feet long. I have cut them back and covered them over with straw as usual, and expect to get some fruit this season, 1878. The soil is clay loam and perfectly drained. Other grapes grow luxuriously without even the protection of the straw in winter. On that account I think the Salem too tender for our section, but I shall still persevere in the hopes that I can send in a good report of its merits.

The Swayzie Pomme Grise Apple, received 1875, was all but dead on receipt, any vitality that was in it vamoused perceptibly every day till it was as dead as a door-nail.

The Flemish Beauty Pear took rather poorly in its new quarters in 1875 and 1876, but in 1877 its vitality was renewed, and now it grows vigorously.

The Glass Seedling Plum of 1876 reached in good order, and settled down to business at once, and promises to be a fine tree.

The Hybrid Raspberry of 1877 grows rather slender, but in another season will be able to better judge of its merits.

Report from A. Bridge, Esq., P.M., West Brook, County Frontenac, near Kingston.

I received the Grape Vine in the spring in good order; it has made a good growth this year; grew about 8 or 9 feet; I cut it back to three buds this fall, and covered it up for winter. I killed the Glass Seedling Plum tree last winter by covering it with a barrel; it never leafed out in the spring; it sprouted again a few inches from the ground. I am living in hopes of getting a tree from it yet. The two pear trees, Clapp's Favourite, and Flemish Beauty are growing fine.

The two apple trees, Grime's Golden Pippin and Swayzie Pomme Grise are also doing well. Only one of the strawberries received last year grew. I put out a bed of seventy plants from that one, the 1st of September this year; the fall here has been very wet and warm, and the plants have made a remarkable growth. I expect they will all bear fruit next year. The raspberry received in '77 is a fine bush; it has quite a number of branches from four to five feet high. I am expecting a large show of fruit on this bush next season. I laid it down this fall.

Report of W. Ross, Owen Sound.

The tree of Glass Seedling Plum arrived in very bad order, being barked and split in several places, but has made splendid growth this year, growing over seven feet. The Flemish Beauty Pear has gone wild with growth, being four times the size of the Swayzie Pomme Grise; but no keeping it in shape. The Burnet Grape is doing well with me, making a growth of over seven feet, after bad luck in the spring, the buds being rubbed off twice.

Report from Andrew Dickson, Galt.

The Grape Vine for 1878 which I received, is growing nicely, and I am well pleased with it

Report from Jonas Neff, Port Colborne.

The Goodale Pear is a fine grower; it has the finest shaped top of all the pears in my garden. No sign of blight. Glass Seedling Plum continues its healthy growth. No appearance of black-knot. Burnet Grape appears to be quite at home, it made a growth of over three feet. My fruit crop this season was a total failure, except that the Baldwin was all that could be desired.

I have a certain remedy to destroy ant nests, if any of our members are troubled with these pests let them cover them four or five inches deep with drift sand and watch the result.

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Report from Sandford White.

1873. Clapp's Favourite Pear and Grimes' Pippin are growing well, but have borne no fruit yet.

1874. The Downing Gooseberry and Salem Grape have borne fruit for two years. The gooseberries are of good size, and free from mildew. A worm injured the berries some by eating into them before they were ripe. I gathered from the vine about two quarts of grapes last fall, of good size and quality.

1876. The packages of Glass Seedling Plums sent to my care arrived in good order, and nearly all grew. I put a graft of that plum into a blue plum stock and the graft grew up last summer five feet and eleven inches.

1877. The strawberries grew, the raspberries all failed as far as I know.

Report from Wm. Gohn, Thornhill.

Last spring received a rootless raspberry cane and two strawberry plants; neither of them grew.

The Glass Seedling Plum that I received in 1876 is doing well. The Swayzie Pomme Grise and Flemish Beauty Pear that I received in 1875 are growing nicely. The Salem Grape and Downing Gooseberry that I received in 1874, both have fruited.

Report from D. B. Hoover, Almira P. O.

I beg leave to report to the Fruit Growers' Association the condition of the fruit trees and fruit in the neighbourhood of Almira, Markham Township, for the summer of 1878.

First, I am happy to say that our fruit trees have done remarkably well this past season, no sign of any new diseases. I never saw a larger growth of wood to my knowledge before, not one case of blight on the pear trees on my grounds, neither a fresh black knot on the plum.

Second, the crop of fruit this year was light, apples not more than half the quantity that might have been, but in quality they are excellent, both in form, colour, and flavour. Very few pears, plums, and cherries, hardly worth speaking of, though I had some very fine Lombard plums which escaped the frost of May 13th. The red cherries have nearly gone out of existence on my ground, the black knot did not miss a single tree. Our small fruits bore abundantly, grapes excepted; strawberries a good crop, also the gooseberries and black raspberries were a good crop.

The Salem Grape is an extreme grower, bore last year for the first time, the fruit ripened well. The gooseberry is doing well. The F. Beauty Pear Tree grows well, did not bear fruit yet. The Pomme Grise Apple is dead.

The Glass seedling plum tree don't grow fast but I have this year fruited one of the grafts that came with the tree when received, just the second year after the grafting; I must say that the fruit will be a credit to anyone's garden. The fruit on the graft was very large, ripe the 12th September—it grows on a greengage.

The raspberries for the year 1877 had no appearance of life when received, did not grow at all. The strawberries grow well, but did not bare well yet.

The Burnet Grape came to hand in splendid condition, it grew five feet; wood ripened well for the winter.

D. B. HOOVER,

Report from Burnham Mallory, Frankford.

The Burnet Grape Vine arrived safely and made a fine growth.

Report from W. P. Taylor, Fitzroy Harbour.

The only trees I have been able to save of those received from the Association, are one pear and the Glass Plum, the latter received by mail. The Canada, Salem, and Burnet Grapes, are alive, only the Canada has yet been fruited.

Report from George Winslow, Millbrook.

None of the trees have borne any fruit as yet, but from the appearance of the Wagner and Grimes Golden Apples, Clapp's Favourite Pear, and the Diadem Raspberry, I think I may expect fruit next year. The Burnet Grape did not grow much last season, but looks healthy. The McLaughlin Plum, and Swayzie Pomme Grise Apple are dead.

Report from Alfred Hoskin, Toronto.

My Burnet has made a good start.

THE PHYLLOXERA.

BY THE PRESIDENT.

In the *Australasian*, published at Melbourne, on the 15th of Dec. last, is to be found an interesting article on this pest, exhibiting the views and aims of our countrymen at the antipodes as to the mode in which they are to rid themselves of the evil. The editor twits the fruit-growers of Geelong with their ignorance in allowing the insect to exist without notice for the past five years, though their vines were showing every symptom of its presence. Its ravages were discovered by what is called mere chance. The important question is discussed, What is to be done? We notice that a deputation of grape-growers, who are styled by the appropriate name of "Vignerons," waited upon the Government, and suggested that they should acquire the power by Act of Parliament to adopt measures to stamp out the disease. The energy and judgment of our kinsfolk on the other side of the Equator cannot be too soon imitated by ourselves in ridding ourselves of the multitudinous evils that afflict fruit-culturists. They set to work with a good will that is refreshing, which is a sure index of their success in future. The article urges the expediency of the stamping out process. Vine culture, it is affirmed, has become part and parcel of the husbandry of the farm. "Farmers have learnt to grow grapes as inexpensively as other crops, and to sell them to the wine-maker just as they do their wheat to the miller." Vine-growing is gradually acquiring a position amongst the great staple industries of the continent, and it would be sad indeed were its progress marred by such a misfortune as the spread of phylloxera. The practice of France and Switzerland is adduced as that which alone can avail to get rid of the disease. In France the system adopted is to lift the vines and their roots as completely as possible, sprinkle them with tar and burn them. In Neufchatel the law requires clearing and burning of the vines in whatever vineyards phylloxera make their appearance, and it is enacted that no vines be replanted on the ground for ten years. Such powers are pled for in the Australian Act. "It appears to us that anything short of an absolute power to do this would negative the most conscientious administration of the Act. The bill is objected to because it makes no provision for compensation. "This appears likely to inflict hardship on some of the growers." The admirable reflection is added: "It seems questionable whether, in the interests of justice, owners of infected vineyards ought not to be compelled to prevent them being a source of injury to their neighbours." After all, this is touching the matter with a needle. In a state, citizenship demands that trades and professions ought to be so carried on that no detriment accrues to one's neighbour. Compensation ought to be given where healthy vines, in close contact with diseased roots, are destroyed to prevent the spread of the disease.

This matter, as regards ourselves, is parallel to the case of the Shorthorn importation. Diseased cattle are prevented from being introduced either from Britain or the United States, so ought diseased vines be debarred from entering our country on the same principles.

Should our brethren at the antipodes stir us up by the vigour of their action in preventing the spread of the phylloxera, our little but important monthly, *The Canadian Horticulturist*, will serve a most important purpose.

By way of *addendum*, it may be mentioned that the paper, which contains a leading article on the phylloxera, is composed of 32 pages of five columns each, with a supplement in addition of eight pages. Verily, giant sheets are issued on the other side of the line. For the copy of Dec. 15, 1877, we are greatly indebted to our distinguished member and fruit-grower, Mr. John McLean, Owen Sound.

NOTES OF THE YEAR.

By B. GOTT, ARKONA.

Believing firmly as I do in the ultimate usefulness of our popular Society to the present progress and future development of this great and promising country, I feel it a duty devolving upon me to do whatever lies within the range of my abilities for our encouragement and advancement. My time at the present being so wholly and so urgently taken up in the daily routine of my increasing business, I feel myself unable to do much that may be interesting to my fellow fruit growers by way of contribution to the pages of our instructive and valuable Annual Report. However I have at length concluded to beg indulgence for a short space while I make a statement of a few "Notes of the Year" just now so nearly closing upon us. Indeed the fact of the matter is, this is a very fitting and convenient time for circumspection and reflection. It is doubtless well for us frequently to look over the mysterious way in which we have been so safely led by our indulgent, kind and heavenly Father. It is clearly profitable to review the mercies and many providential blessings bestowed, and thus to acquire fresh inspiration of zeal and courage for the work that still lies before us. We further firmly believe in the deep and broad sympathy of all engaged in the ennobling work of horticultural progress, though they may be in remote parts our wide and great country. I have noticed again and again that in no class of artisans in the various industries of our promising land is there a deeper and broader sympathy and a kindlier fellow feeling than those most surely developed among honest, practical fruit growers. Although the representatives may be natives of the gorgeous, sunny south, or of the forbidding and frigid north; at home in the wide and ever green fields of the Golden State on the Pacific coast, or stationed on the rugged cliffs of the Atlantic seaboard, the actuations of their natures are responsive, and they instantly feel the grasp of a brother's hand. This, my dear sir, is one of the brightest and most precious advantages of our arduous and trying avocation. It is an immediate outgrowth from the very nature of the business, and one of the many valuable fruits of the profession, even far more valuable and far more lasting than those fruits found hanging on the trees. Fruit is ameliorating, and fruit is ennobling, and none can taste and eat but (if not live for ever) are most decidedly influenced and bettered thereby. But to the subject proposed; I may at once characterize this season as a distinctively outlined and remarkable one from the beginning to the end, and, first, from its extreme earliness and, second, from its bountiful fruitfulness, that is, all things considered. The season opened with us more than a month in advance of the usual time for such displays, so that on the 6th day of March we had the brightest sunshining and spring-like weather, several small insects were on the wing, and honey bees were swiftly buzzing across our fields. Certainly we all thought this was too much, it would not long continue; but it did continue, and on the 9th of the same usually snow covered and frozen month of March, in Canada, we found ourselves surrounded by the gladdening signs of balmy spring, and several fine moths of what we supposed to be *Phalena Vernata*, and others were caught, and we captured the first fine Canadian mosquito on the wing. This has scarcely ever been so here before even in the recollection of the *oldest inhabitant*. This season we commenced digging and working in the nursery earlier than ever before, so that on the 8th of March we were moving and packing nursery stock for the market; and the blossoms of our fruit trees and shrubs appeared also unusually early. But as we are ever made to feel that we are earthly and dependent, being in no season left without tuition, some disappointments and many mystifications; so also in this decaying season, on the 15th of the beautiful month of May and the two following days, or rather nights, when we fondly supposed all external danger was over, and we were advancing under the brightest prospects of one of the most remarkable fruit crops ever witnessed, just as the little apples and cherries were setting in myriads on the trees, lo! a frost came and at once rudely blighted our hopes. Alas! for human calculation, it's hard for the time but it may be best in the long run. As one of the results of this visitation the strawberry crop was almost a total failure, and many of our growers sustained heavy losses thereby. The apple and cherry crops especially were in a bad condition for frost, and they consequently sustained heavy losses, the young fruit falling like hail, and in some localities the crop was made worthless and ruined. Our supply of apples

now in the market, at least in this section of our country, is not sufficient to meet the demand, and the consequence is our cellars are in no way crowded by our winter supply, and many not having any at all. But as ever the all pervading and benevolent law of compensation was found to hold good, though the strawberries were a failure the raspberry crop was most general and plentiful, and were our planters only in a good condition to reap a good harvest all might have been well; but here's the rub! we have scarcely any planted to supply a need in time of scarcity; as our fruit growers have not yet taken the matter of raspberries in hand in good earnest, from the fear that the market will not warrant it. Our observation in this matter, however, is, that in fruit culture as in grain culture there is no position safer or better on the whole than a mixed and varied crop. Specialities are well enough in their place and if they happen to do well; but if not! if frost or insect takes that, all is lost, and you have nothing to fall back upon to encourage and help you on. Let us learn from these failures some good lessons—it is at least one good use to make of them. Gooseberries and currants have become a losing and vexatious business, made so only by the insect enemies of these fine and savoury fruits. The currant leaf worm *Nematulus Ventricosus* and the gooseberry fruit worm *Pembelia Grossularia* are each of them far more than an equal match for us, and where we attempt these fruits on a large scale they baffle our best efforts at success. We usually raise fine and beautiful cherries in this region, but this season the crop was injured fully 50 per cent. by the frosts of May; and so also was our crop of pears. The grape vines too were just then in a very bad condition for frost visitation, as the buds had expanded fully two feet or more. These young shoots and the whole wealth of fruit buds upon them were at once scorched, shrivelled and dead, and our fond hopes of luscious and beautiful grapes were at one stroke dashed to the ground. Alas for human hopes! How fragile are their texture! How deceptive are their promises. However, notwithstanding this calamity, we clipped a tolerably good crop of medium fine fruit for which we were very thankful as it was unexpected and far better than our fears. The plum and peach crops of this county were encouraging exceptions. These fine acceptable fruits are becoming more and more popular, and the market is at any time open and ready for them. They were very abundant and good and in some localities—the trees were literally breaking down with the abundance of fine fruit. We are glad to see that the culture of these valuable fruits is annually attracting much attention, and many are planting largely now who grew not a tree a very short time ago. In vegetable and floral gardening the season has been generous and encouraging to our fair as well as robust cultivators. This department of Horticulture is rapidly becoming more and more an absorbing occupation among our tasteful and well-to-do country people; and many are annually added to the throng of busy workers during our pleasant summer months. Although the season may be written down as disastrous to some of our national fruit interests, yet on the whole it was a clear and positive demonstration of the overflowing bounty of an overruling Providence, and of the native richness and productiveness of our admirable soils as brought out by the untiring industry and skilful efforts of an enlightened people. When the season for the annual fall exhibitions came round we were ready, and more than ready, to load the broad and long tables to their utmost bearing capacity with the finest, most beautiful, and richest specimens of pomona, that it has ever been our exalted privilege to witness. At this particular time during our delightful and happy months of September and October, the weather was most favourable, and all that could be desired by our people in their agricultural demonstrations throughout the whole extent of our progressive country. If you, sir, could have seen at these several country shows, the multitudes of our varied population, the young, the beautiful and the gay, as well also as the inured stalwart tiller of the soil, and his attentive partner and better half that were regularly in attendance in such immense crowds, it would have inspired your heart with fresh courage, and made you feel that no other land under the sun can offer greater privileges to her inhabitants or boast of brighter prospects for the future. These shows are demonstrative and annually teach us lessons of usefulness and wisdom. "Surely, the lines have fallen to us in pleasant places, and we have a goodly inheritance."

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REPORT OF THE COMMITTEE ON HASKINS' SEEDLING GRAPES.

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

Your Committee appointed to examine the Seedling Grapes of Wm. Haskins', Esq., Hamilton, beg leave to report :

That after examining some fine clusters exhibited by him at the Central Fair, Hamilton, October 3rd, they proceeded to his grounds where they found a large collection of very fine seedlings produced by hybridizing our hardy native grapes with some of the best foreign varieties. The most notable of these were three varieties which Mr. Haskins designates as A, B and C. Letter A is a cross between the Black Hamburg and Hartford Prolific, and is a dark grape of medium size, somewhat resembling the Eumelan, of fair quality, a strong, thrifty grower, and an abundant bearer—might be fancied by some amateurs, but in our opinion, not of sufficient character for general cultivation. Letter B is a good-sized white grape, similar in appearance to Allen's Hybrid, bunches large, compact, and somewhat shouldered. Vine thrifty, foliage healthy and good; wood well ripened, and to all appearance perfectly hardy, and a prodigious bearer. Mr. Haskins informed us it had been tied to a stake where it stood even since planting without any protection, and had thus far escaped injury from our severe winters. We regard it as a great acquisition. Letter C is a cross between the Creveling and Black Hamburg. Vine hardy and a thrifty grower, fully as early as Creveling, berries larger, and bunch more compact; flavour and other characteristics very similar to Creveling. *We regard this as a very valuable and early grape.*

We saw several other promising varieties, some of which were very early, and we doubt not, will prove valuable; but Mr. Haskins, with his characteristic modesty, preferred not to bring them into notice till he had further tried them. We most heartily congratulate him on his success in hybridizing, and sincerely believe the horticultural world will ever owe him a debt of gratitude for his efforts in this direction.

A. M. SMITH,
THOS. BUCHANAN,
PETER MURRAY.

REPORT ON FRUITS FOR 1877.

TWO PLUMS RECEIVED FROM COL. JOHN MCGILL, OSHAWA.

No 1. Small plum; delicious flavour; seedling from an English Golden Drop. Tree, a healthy, strong grower. This plum was awarded a prize at Ottawa by the F. G. A. of Ont., in 1875.

No. 2. A large plum; seedling from Lombard. It is an early and constant bearer. Flavour not as high as the small one. It was awarded a prize in 1875.

MR. JAMES REID'S PLUM.

The Committee, through Mr. Saunders, report as follows on this plum:—Have examined Mr. James Reid's plum. It is distinct in character, as far as form is concerned, being different from every plum that I am acquainted with. The flesh is very smooth, juicy, and melting, but I do not think it is equal in flavour to Lombard, and certainly not at all equal to the finer varieties of plums already in cultivation. Unless there are some peculiar advantages in the habit of the tree, which would render it desirable, I do not think it would be wise to encourage its propagation.

"BAKER'S LONDON GAGE," SEEDLING PLUM.

The fruit of this plum is rich, with very small stone; flesh very firm, and easily parted from the stone. Supposed to be a cross between the Lombard and Green Gage. It is below the medium size, and not particularly distinguished for its good qualities. It closely resem-

bles Imperial Gage. The size about the same as Green Gage, and has the elongated form of the Imperial Gage. Is not equal in quality to the Parent. Foliage vigorous, large leaves.

No. 2 has the form of Yellow Gage, and a little below the average size of that plum. Colour, yellow tinted with reddish orange; fair quality, pleasant sub-acid flavour. Foliage apparently vigorous, stems and leaf-petioles bright red.

MR. JAMES DOUGALL'S SEEDLING PLUM.

A large and handsome plum, with sometimes a very decided orange tint, on the portion exposed to the sun. Nice bloom; nearly oval, with a moderately deep suture, much resembling the Yellow Egg, but more truncate at the calyx end of the fruit. Stem moderately long; flesh rather coarse; quality fair; fragrant; superior in quality to Yellow Egg; stone small; very promising plum. The Committee award this Seedling a prize.

Mr. Dougall writes: "The tree is a very strong grower and hardy—also a very early bearer—it is just covered with clusters; last year was the first that it bore; it is only five years old."

DR. EDWARD'S SEEDLING PLUM.

This is a seedling from Unionville, County York. The Dr. says, "He regards it as a seedling, being a sprout that grew below the graft of a Washington Plum." The specimen was evidently taken from the tree before it was ripe. The size is medium; a great bearer; tree hardy and thrifty; quality fair; not superior to the varieties in general cultivation.

WAKELING'S SEEDLING PEACH.

A large and handsome peach, yellow fleshed, assuming blood red tint around the stone. Stone free, medium sized; colour, whole surface splashed with dull yellow; fine grained flesh, melting and juicy; good rich flavour; raised from the stone by William Wakeling, Westminster.

SYER'S SEEDLING PEACH.

Exhibited at the Provincial Exhibition by the late Mr. John Freed. A very superior peach in every way. Rich, high flavour, juicy, taking colour, and ripens intermediately between the Early and Late Crawford, thus indicating a most desirable variety. The Association wish to see and report again on this peach.

A WHITE-FLESHED SEEDLING PEACH. (*Owner unknown.*)

Mr. Saunders writes of this peach:—"I have tasted the White-Fleshed Seedling Peach you kindly sent me, and find it very pleasant, juicy, and highly flavoured, unusually high flavoured, for a peach of this character, and ripening so late." (3rd Oct. 1877.)

MR. A. HOOD'S CRAB APPLE.

The Seedling Committee were greatly pleased with this new fruit. One member says, "I think the Crab Apple is a very good one. To my taste it is just as pleasant eating as many of our dessert apples. It is only pleasantly sub-acid, with a smooth, fine-grained flesh, and remarkably fine flavour." "I should much like to see this fruit disseminated in some of the colder regions of the country, as I think it would, by its hardiness and good quality, meet a want much felt." Mr. Hood himself thus writes under date 11th September, 1877.

FERGUS, 11th Sept., 1877.

REV. R. BURNET:

DEAR SIR,—I have this day sent by express to your address samples of a Seedling Crab, which I think may prove worthy of cultivation in the colder sections of this and other countries.

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The fruit sent is the produce of a tree raised from the seed of a Harvest Apple, as I learn from the person who sowed the seed, and from whom I last year purchased the farm on which it is growing; the tree is from 10 to 15 years from the seed, and is now growing on a light sandy loam which is seeded down to grass, and the sod appears to be of 4 or 5 years' growth. It has every appearance of a Crab tree, and is, I presume, as hardy and productive as trees of that class, though this is only the first year in which it has borne a full crop, the growth having been retarded by frequent transplantings.

I have been trying to keep the fruit to show at the fall meeting of the Society, and it is therefore perhaps a little too ripe, and has therefore lost a little of the acidity which I think gave it a flavour perhaps better than in the ripe state. The size of the fruit is equal to that of the best crabs I have seen, even in this season, which has been extremely dry in this section, and the flavour, I think, decidedly better than that of our Harvest Apple, being more juicy and lively. It was ripe two or three weeks since, or about half way between the time of ripening of the Harvest Apple and Siberian Crab, and was the earliest fruit we had fit for use before the new potatoes were ready for use, and when the old ones were done and none in the market, we found this crab or apple very useful, for it made very good sauce, although at that time, of course, far from ripe.

I am of opinion that there are very few apples ripe at the same time that are equal to this crab as a dessert fruit, and without taking into consideration the hardy character of the tree, the fruit is fit to compete in point of flavour with the product of any part of Canada, whether called by the name of apples or crabs.

Your obedient servant,

A. HOOD.

All of which is respectfully submitted.

ROBERT BURNET,
Convener.

MR. LOUGHREY'S SEEDLING PEACH.

Size medium, colour dull reddish; flesh yellow, juicy, rich, and high flavoured; stone not quite free.

W. S.
R. B.,
Committee.

London, 14th September, 1878.

J. BARTLETT'S SEEDLING PLUM.

Size under medium, form nearly oval, with a slight shoulder at the stem; colour deep red with a purplish bloom; flesh dull orange yellow, juicy, acid, but not high flavoured; flesh adheres to the stone. This plum being of a comparatively small size and poor flavour, is not, I should consider, worthy of any extended cultivation, unless there are some other good points connected with it apart from the fruit, such as hardness, productiveness, &c.

W. S.
R. B.,
Committee.

London, 16th September, 1878.

S. GREENFIELD'S PLUM.

Ottawa, 22nd August, 1878.

MR. PRESIDENT,—Mr. S. Greenfield, a member of our Association, has presented me for inspection several specimens of plums of which I have the pleasure of forwarding by this day's mail a sample. They are a seedling from the "Magnum Bonum." Several of the samples measured $4\frac{1}{2}$ inches round, and 5 inches round the length of the fruit. Mr. Greenfield has several of the seedling trees; they are perfectly hardy in this climate; they began

to bear three years ago; last year (spring of 1877) the trees were moved. The trees are healthy and thrifty, and, if multiplied, would be a great acquisition to the "iron clad" list. You will please make such report on them as you deem most fitting.

P. G. BUCKE,
Director F. G. Ass.,
Ottawa.

Mr. Greenfield's seedling plum was submitted to the seedling Committee, who find it of medium size, scarcely as large as the Lombard; colour deep, bright-red, characteristic of the wild plum of the country; form resembling the Lombard; quality, unable to judge of it as it came to hand in bad order.

(Signed) WM. SAUNDERS,
ROBT. BURNETT,

London, 24th August, 1878.

ARNOLD'S "BRANT" GRAPE.

At a fruit growers' meeting in Michigan, some time ago, Mr. L. C. Whiting, a very successful grape grower of East Saginaw made the following remarks, which are somewhat flattering to our townsman, Mr. Charles Arnold, as the *Brant* Grape so highly spoken of, is one of Mr. Arnold's Hybrids, and named by him after this County:—"The grape is one of the earliest, and subject to the fewest insect enemies of any of our fruits. It is one of the most healthy, and with little trouble can be kept as well as apples or pears, and should be on our tables at least six months of the year. In the remarks I purpose to make, I shall confine myself to a few points. First, what to plant. For those who do not make grapes a speciality, only the most hardy vines should be attempted in this climate. For this purpose the following kind in the order of their ripening may be named:—The Brant, Worden, Delaware, Eumelan, and Concord. For those who are willing to take more care, add the Wilder, Salem, and Agawam. For safety the last three should be covered during the winter. For marketing I will reduce the list to the Brant, Worden, Concord, and Agawam.

"There are many new kinds of much promise, and the above list may in a few years be profitably changed. You can lose but little by allowing others to experiment for you.

"The soil best suited to the grape is decomposed shale, but any good clay soil thoroughly drained will do.

"The ground should be carefully prepared and only well rotted manure used.

"Decomposing turf is one of the best fertilizers, where it can be obtained, no other will be required.

"Grapes for fall and winter use should be picked as soon as ripe, and when perfectly dry, packed in fine dry sawdust. Select your box or jar, cover the bottom with sawdust, then layers of grapes and sawdust alternately until full. Keep them in the coolest place you can find free from frost, until wanted for use.

"The grapes best for winter keeping in the above list are the Brant, Eumelan, Salem, and Agawam.

"Some of you may ask why the Delaware Grape is left out of the market list. There are several reasons and among them I will name the following:—

"*The Brant* is a better grape. It is two weeks earlier, less subject to rot and will keep well three to four months, it has more healthy foliage, stronger roots, and will succeed with half the care of the Delaware."

IMPOSITIONS OF CERTAIN TREE BROKERS.

(From the Huron Signal.)

"BEWARE."—A local tree agent takes offence at our remarks last week under this heading. For his information we may state that our remarks were made from a complaint lodged with us by a farmer who has been very badly sold by that terrible personage, the tree agent,

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but whether or not the local agent is the man referred to we know not; he may know best himself. The farmer referred to lives in Stanley Township. Our local friend also appears to feel offended at us, charging that we are nursery agents. We fail to see any crime in being such, but the fact is we are not, nor to our knowledge does anyone connected with this paper act as regular agent for any nursery. We advertise for nurseries from time to time, both American and Canadian, and orders left here are forwarded where desired, and advice given freely as to the proper stock to purchase, &c. The firm he says he represents we are not acquainted with, but we believe, so far as we know at present, that they have no nursery at all in Toronto. We will make full enquiry regarding them, and give the result to the public. When we make complaint against agents we do so for the public benefit, and everyone knows well how often people in this section have been swindled by unprincipled agents who would make any sort of representation in order to sell their goods. We are well aware that there are most excellent nurseries on the American side, and believe that if parties here would send their orders direct to these nurseries they would be filled properly and honestly. But we do know also that agents are continually on the run who take orders under all sorts of fine promises and fill these orders with mere trash they purchase at the nearest nursery, trash which the nurseryman himself would scorn to sell to anyone. Two years ago such an agent visited this section with plate-book and jars and took a large number of orders; another followed him to deliver the stuff, and many discovered that the affair was a swindle in time to save themselves. We do not believe in the plate-book and jars of specimens; it is calculated to deceive, and the purchaser is induced to purchase the finest looking which is not always the best fruits. We believe in patronizing a home nursery, as they are likely to be very careful what stock they send out, and then again their stock is more likely to succeed than that taken from a warmer climate. Our local friend will see when he looks calmly into the case that we are endeavouring to root out the "unprincipled agent" only, and we believe we are doing our duty when doing or trying to do this. When we are convinced of the honesty and reliability of any man engaged in spreading the benefits of horticulture through the country, we are willing to give a helping hand, and if our *local* will make himself known as such in the proper way he will find out we are not so bad after all.

"BEWARE."—In our article last week under the above heading we promised to make full enquiry regarding the firm represented by a tree agent who took exception to our former remarks, and who claims that the firm he represents are nurserymen who sell the best stock in the Dominion. We made enquiry in Toronto and the result is given in a communication in another column. It seems the firm referred to, Messrs. Stone & Wellington, have lately started in business for themselves and have issued circulars, cards, &c., representing to the public that they are nurserymen at Toronto and Rochester. We find that this is not true so far as Toronto is concerned at all events, and in all probability the same result will be found upon enquiry at Rochester. We have taken steps to ascertain this also and will give the result to the public. We believe from what we have already discovered that Messrs. S. & W. are nothing more nor less than *tree brokers* who purchase stock from the nursery that will sell the cheapest, and therefore we feel it our duty to the Huron public to put the matter in its true light. This is nothing more than justice towards the honest nurseryman as well as the public. The Fruit Growers' Association have taken up the war cry against tree brokers, and, as will be seen by the annual address of the President at Toronto the other day, the Association asks the Government to interfere and prevent unprincipled men from flooding Canada with trees from the States, that are, in ninety-nine cases out of the hundred, mere trash. There are a number of large nurseries in Ontario where every kind of tree can be had that is profitable or useful for planting, and we fail to see why anyone should deal with strangers who charge high prices for stock that in nearly every case turns out to be mere culls. Tree brokers are a great accommodation to nurserymen, no doubt, as they purchase all the refuse stock that is to be found in every such establishment, and which otherwise would have to be destroyed, as no respectable nurseryman would sell it to his regular honest customer. Doubtless good stock is often got from these brokers, but the chances are all in favour of getting bad stock. We know cases where the poor purchaser has been deluded into purchasing stock bearing a euphonious name, unknown to any but the inventive tree broker, and paying a very high price, and when the trees came into bearing found nothing but the commonest varieties, or perhaps trashy seedlings. We know a gentleman who paid \$3 for a

gooseberry bush bearing the name of "Highland Lassie," and it turned out to be the Downing, which any home nurseryman would have sold for five, or, at the most, ten cents. Another got twenty apple trees, for extra fine sorts and lived to reap seedling fruit of the meanest kinds. He paid a high price and his expectations were high, but time proved that he did wrong in giving his order to a *broker* instead of a legitimate nurseryman. If people think American grown stock is best, our advice is to send their orders direct to Messrs. Ellwanger & Barry, of Rochester, or some other well-known firm there, and they will get what they order. But they might better throw their cash into the fire at first rather than invest with any tree broker, for the end of dealing with these gentry is "vexation of spirit" and loss of time and money. The Fruit Growers' Association is possessed of information and statistics sufficient to satisfy any reasonable man that putting faith in tree brokers is a delusion and a snare. Every fruit-grower should join this valuable Association, and keep posted so as to avoid delusions. Our advice to all is to give a cold shoulder to tree agents representing foreign firms who are not known, and order only from home, well known nurseries, who have a character to sustain, and will not, therefore, attempt to gull or abuse the public confidence. It should not be necessary for us to caution the Huron public so often, as so many instances of swindles have been seen, through confiding and unprincipled agents, that every one should be sufficiently on guard. We expect to hear from Rochester in regard to the firm already mentioned very soon, when we will give the public the news, good or bad. We enquired of two gentlemen from Rochester, who were attending the Toronto exhibition, but they did not know of any such firm of nurserymen as S. & W., and did not believe there was any such in Rochester. If the firm referred to are actually nurserymen, why are not their agents posted and able to tell us when this firm became nurserymen, how many acres they have under nursery, what stocks they actually grow, &c., eh?

"BEWARE."—We promised our readers full particulars regarding the firm of Stone & Wellington, who have been representing themselves as nurserymen. We already intimated that they are not nurserymen in Toronto, and now we have received reliable information, stating that they have no nursery in Rochester either, but that they are merely *brokers* who buy stock where they can get it the cheapest. Mr. Alex. Watson told us the other day that he can supply the same kind of roses for 50 cents each that the agent of the above firm sold here for \$1 each, and Mr. Watson will guarantee them, and his guarantee is good. We presume the stock which the above firm will supply will be the overgrown, forced stock which most American nurserymen grow and are always anxious to dispose of. We have now done our duty in exposing this matter and any who are gulled into purchasing such stock as is sold by "plate book gents" well deserve the result—disappointment and loss of money.

W. B. HAMILTON'S SEEDLING PLUMS.

I have some rare seedling plums, one of them I think will be the earliest plum in Canada.

Another produces prunes—they will dry on the tree or off, without sugar or any trouble whatever, not even sun, and have the flavour of the French prune. This is the first year of bearing of both,—the first is a beautiful peach bloom, but not highly flavoured, fair size, not so large as an egg; commenced to ripen before the 15th "August," and not in a favoured position either. I shall watch these trees with great interest.

W. B. HAMILTON,
Collingwood.

A PLATE OF PEARS.

From an Epicurean Point of View.

Whether we consider its delicious flavour, easy culture, and excellent keeping qualities, or its long continued supply of beautiful fruit, the Pear in its many varieties may justly lay claim to the title of the fruit *par excellence*.

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To obtain it in the pink of perfection, it should be picked from the tree as soon as the fruit has attained its full growth, and just as it begins to turn from green to the ripening condition. When left beyond that period the ripening process goes on in favour of the seeds, and its qualities rapidly deteriorate. A pear ripened on the tree is not fit to be eaten. Even a day or two too long in the summer varieties renders it dry, flat and insipid. Fall and winter fruit, after gathering, which it is desired to keep any length of time, is best preserved in barrels or, better, in boxes, containing about a bushel, in a cool or cold, dry place. When desired for use, to insure its highest perfection, it should be ripened in a dark, dry place in a moderate temperature, and rigidly excluded from the air. Proper thinning on the tree is an essential point in obtaining well conditioned fruit, and placing it between layers of flannel is a secret in developing colour and flavour that is worth knowing. A pear should never be eaten warm. Cooled in the refrigerator in summer and eaten at a temperature between warm and cold in the winter, it is at its perfection, and those who have never tasted some of the finer varieties under these conditions have a pleasing lesson to commit to memory.

There are pears that are pears. The average consumer, generally speaking, is acquainted with but a few of the commoner varieties to the exclusion of the really fine sorts. The Seckel, Bartlett, Lawrence, Howell, Flemish Beauty, Belle Lucrative, Sheldon, Duchesse and Beurre d'Anjou, are perhaps the best known and most salable market varieties. These, at least the majority of those mentioned, are but the lower grades of this really delicious fruit, and no more compare with many of the finer sorts than a crab or a Gilliflower apple does to a Spitzenburg or Northern Spy. The Seckel and Bartlett both have a pronounced musky flavour. They suit the average American taste because they are sweet and strongly flavoured, for the same reason, doubtless, that the American palate demands a sweetened and alcoholic wine, or discards olive oil in favour of sugar in the salad. Their popularity, as that of most of the above sorts enumerated, is also no doubt largely owing to the fact that only comparatively few are acquainted with the better kinds, and are, therefore, unable to establish a comparison. While many really excellent varieties have originated in this country, the French and the Belgians must be credited with the majority of the really superior varieties.

SUMMER VARIETIES.

Beginning with the summer sorts that rank high in the gamut of taste, the Petite Marguerite, recently introduced in France, is especially deserving the attention of the amateur. Its juicy and vinous flesh and delicate bouquet, all entitle it to a place in the well-regulated private orchard. It is not large, a trifle larger than the Seckel but large enough, according to the writer's taste, for a dessert pear. Of the larger summer pears, the Clapp's Favourite, originated in this country and a cross between the Bartlett, an English variety, and the Flemish Beauty, a Belgian sort, should not be overlooked. It is entirely free from the muskiness of its English parent, and considering its size and other really fine qualities, one might look much farther and fare worse. It is said to rot at the core too quickly. This is obviated to a great extent by early gathering. Of the many other summer sorts, the handsome red-cheeked Beurre-Giffard, the Rostiezer, a vinous, high-flavoured sort, comparatively a stranger to American collections, and last, but not least, the Tyson, which is much better known, bring up the rank and file among the very early pears.

With the change from the hot summer weather to the mellow and cooler days of autumn, we at once note a difference for the better in the quality of the fruit, which seems to become imbued with the vinous richness of nature's harvest season, the fall sorts having more character, piquancy and flavour. Of this class, it is an extremely difficult matter to choose between several varieties. Whoever has been fortunate enough to taste a Beurre-Superfin, fully matured, ripened to a nicety and glistening in its bright, smooth, oily skin, needs look no farther for the acme of perfection in the pear. It is as juicy as a peach, and eating its fine-grained and highly perfumed and flavoured flesh reminds one of nothing more than drinking a delicious dry champagne. It fully merits its appellation "super-fine." Like many good things it will not keep long. But were it possessed of the virtues of the amaranth, we doubt whether that would prove much in its favour, as a supply of Buerre Superfins would scarcely last except under lock and key.

BEST OF THE AUTUMN SORTS.

Among the Autumn pears, the Urbaniste, a Belgian sort, is second to none. It is one of the acidulous kinds, like the Superfin, of good size, melting, very juicy, and of a most exquisite flavour and perfume, strongly resembling attar of roses. This particular aroma is always very pronounced. The *bouquet* has been described as the "soul" of wine, and this characteristic odour in the Urbaniste is one of its chief attractions. The aroma which gives the character of the fruit, in many varieties of pears, lies just below the skin as in the case of the Urbaniste; in others it is contained in the entire juices of the fruit.

If the Urbaniste and Beurre Superfin are entitled to a topmost seat in the synagogue, the Gansel's Bergamot, an old English variety, certainly deserves a place of equal prominence. It is a profuse bearer, a medium sized apple-shaped, russety fruit, melting, and of a most rich and sprightly sub-acid flavour. It is to autumn pears what the juicy and highly flavoured Gravenstein is to the fall varieties of apples. Being difficult to grow in the nursery, it rarely finds its way even to private tables, and is unknown in market. Poor growing sorts like the Gansel's Bergamot are rendered tractable by being re-grafted, or as it is termed in nursery parlance, "double worked," on strong growers. Sorts like the Gansels are worthy of any trouble to obtain.

The Louise Bonne de Jersey is an acidulous pear, tolerably well known in this country, that never fails to please a person of that taste, carrying its tartness as far as possible without absolute excess. But its good qualities are sadly counterbalanced in this climate by its apparent tendency to blight. The Louise Bonne is recommended by its vigorous and handsome growth of tree, and its productiveness. The fruit is elegant in form, beautifully coloured, the flesh melting and overflowing with refreshing vinous juice. Nevertheless, in point of quality, it does not reach the very high flavour mark of the Gansel's Bergamot, Urbaniste, or Beurre Superfin.

A well-known pear is the Doyenne White, or Virgalieu of the French. It is without doubt the handsomest coloured pear grown, being as rosy-cheeked as a lady apple. Of late years the fruit has cracked badly with us. The Doyenne White is distinguished by a certain perfume possessed by no other variety. Although regarded as adapted to most every one's taste, it is lacking in the vinosity which to a trained palate is generally considered one of the essential virtues of the really superior sorts.

The Sheldon, a large, round, golden-russet fruit of Western New York origin, previously referred to as among the best-known varieties in this country, when well grown and well ripened, is usually regarded as deserving a place among table fruits of the first order of merit. It is a general favourite with those who are partial to the honied sorts. Like some others, it has a slight suspicion of muskiness, and, as reviewed from our individual point of taste, lacks the "snap" that is essential to complete the harmony of a perfect pear.

The Seckel, a household word among American fruits, is too well known to need description. Its honied sweetness and its marked flavour, recalling that of *Mosel Muscatel*, are usually objected to by connoisseurs, although it finds favour with as high a pomological authority as Mr. Thomas.

Dana's Hovey, one of the vinous sorts, which has recently made its bow to the pomological public is highly extolled in Massachusetts, where it originated. It has been little fruited in this vicinity, and we are personally unacquainted with it except by favourable reputation.

The Duchesse, a deservedly esteemed market sort, would be of great value for the private orchard, were it not that there are so many other superior kinds to choose from. Nevertheless, its great size, splendid golden colour and good qualities will always entitle it to be called a "noble" fruit.

Not to mention the Bonne du Puits-Ansault, a comparatively new French variety among the autumn pears, would be a glaring oversight. One needs but to have once tasted its delicious, melting and sprightly sub-acid flesh to accord it a foremost place in the galaxy of *ne plus ultra* pears. The amateur cannot afford to do without it. This variety does best as a standard.

Dr. Reeder, a recently-introduced pear, originated by that gentleman at Varick, in this State, and disseminated by Ellwanger & Barry, is one of those good things that come done up in small packages. With its small, roundish, ovate form, and bright golden skin, netted

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and sprinkled with russet, combined with its exquisite, fine, juicy and vinous flesh, it has scarcely a superior as a dessert fruit. For the amateur it is a veritable treasure trove.

Of the claims of the *Beurre Bosc* to pre-eminence as a table fruit, we do not agree with even so eminent an authority as Mr. Downing, who is particularly partial to this handsome representative of the *Calebasse* type. It is high flavoured and delicious, but is rather lacking in juices, and does not possess that acidulousness to which we have previously referred as one of the great desideratums. It is, however, the beau ideal of shapeliness, which in the pear is pyriform, as best illustrated in this variety. The *Bosc*, in particular, requires to be very ripe to call forth its good qualities.

PEARS FOR THE WINTER MONTHS.

We now come to the winter varieties, of which the *Beurre d'Anjou* is, perhaps, the most popular and favourably known. This is a variety, all things considered, that we cannot do without, its size, flavour, and excellent keeping qualities, all render it worthy of a foremost place in the catalogue of desirable fruits.

Among the winter sorts of "name and noble estimate" is the favourite *Winter Nelis*, a Belgian sort, that makes up in quality what it may lack in form and general appearance. It has a great deal of individuality; its melting, buttery flesh being characterized by a certain spicy, nutty aroma, peculiarly its own. It always comes into admirable play as a winter table fruit.

Those who regret the poor keeping qualities of the *Superfin* can console themselves later in the season with the *Beurre Easter*, which is of a similar piquant champagne flavour. In keeping qualities it has no superior. In France, and in this country among careful growers, it attains a very large size. Its good qualities as a fruit are offset in a measure by its slow habit of growth, its tendency to blight, and its only thriving in the best of soil and under careful treatment. In spite of these objections, it is a *sine qua non* among winter sorts, and to every really choice pear garden. *Beurre Easter* is best cultivated on the quince.

Last but not least among the desirable varieties for the amateur is the *Josephine de Malines*, without doubt the most valuable late-keeping pear. For this great acquisition we have also to thank the Belgians. Its skin is of a pale yellow, and its flesh a light salmon colour, and of a most delightful rose flavour, similar to, but not as pronounced as the *Urbaniste*. Of comparatively recent introduction into this country, it is scarcely known in market, but is prized beyond measure by those who are acquainted with it. The *Josephine* succeeds both as a dwarf and a standard.

There are many other excellent sorts that, if not fully equal to those enumerated, are eminently deserving of a hearing which the limits of this article forbid. Tastes differ in fruits as in wines. But there is an acknowledged standard of excellence in both that meets the general taste. A person must indeed be deficient in taste who can perceive virtue in *Surène*, or discover pleasing qualities in a puckery crab. One cannot go amiss on *Lafite* or *Chambertin*, nor can the tyro and the connoisseur in fine fruit fail to agree as to the merits of an *Urbaniste*, a *Gansel's Bergamot* or a *Superfin* pear. Judging from this standpoint, the above varieties referred to as possessing the cardinal virtues comprise the very best among the table sorts, and are amply sufficient for an abundant variety in the largest and most carefully selected orchard. Except where otherwise noted, all are suitable for cultivation as dwarfs.

Our remarks are confined to private gardens only, where quality is desired, if even it be largely at the expense of quantity. But in a well-cared-for fruit garden, with the proper treatment, the poorest bearers may be made, if not to "blossom as the rose," to "give forth their fruit in due season" in comparative abundance. The blight, which still remains as great a mystery as ever, has seriously interfered with pear-culture lately. While this may trouble the professional market grower, it need not interfere with the amateur, who should always have a few good trees in reserve to take the place of those which may not succeed.

SUMMING UP—DOCTORS DISAGREE.

To sum up with the *Petite Marguerite*, *Clapp's Favourite*, *Rostiezer*, *Beurre Giffard* and *Tyson* of the summer sorts; the *Beurre Superfin*, *Urbaniste*, *Gansel's Bergamot*, *Bonne*

du Puits-Ansault, Dr. Reeder, and Louise Bonne, among the autumn varieties, and the Beurre d'Anjou, Winter Nelis, Beurre Easter and the Josephine among the winter sorts, the amateur can revel in a succession of the finest of fruit from early summer till early spring.

In conclusion, it may be interesting to know the individual tastes of the six leading American pomologists of the day as to table pears, quality of the fruit alone being taken into consideration :—

P. Barry.—“Whenever I taste a *Gansel's Bergamot*, ripened to perfection, I always come to the conclusion it is the best pear, as far as quality is concerned.”

Marshall P. Wilder.—“If pinned to *one* for quality, I must, considering all things, say *Anjou*, which I have on the table every morning for over four months, in the year.”

George Ellwanger.—“For absolute perfection for table use, I name the *Beurre Superfin*.”

Charles Downing.—“If I were limited to one pear, it would be *Beurre Bosc*.”

J. J. Thomas.—“For uniform excellence every year, without variation, the *Seckel* is undoubtedly the finest in quality. There are some others, as the *Belle Lucrative*, *Grey Doyenne*, &c., that are *sometimes* very fine and unexcelled.”

C. M. Hovey.—“If I were to name the *very best* pear without regard to season, I should name *Dana's Hovey* as the *ne plus ultra* of flavour and exquisiteness, and all other qualities except size.”

When doctors disagree, who shall decide ?

GEORGE H. ELLWANGER.

Rochester, N. Y.

THE HONOURABLE MARSHALL P. WILDER.

Hon. Marshall P. Wilder was tendered a banquet at the Parker House on Saturday afternoon Sept. 21st., in anticipation of the eightieth anniversary of his birth, which occurred on Sunday. For more than half a century Colonel Wilder has occupied a foremost position among the promoters of the agricultural, horticultural and pomological interests of the United States, and it was in recognition of his labours in the development of the earth's products that a large number of his friends and associates united in tendering him a banquet. The occasion was also interesting as being the fiftieth annual dinner of the Massachusetts Horticultural Society, with which Colonel Wilder has been long and prominently identified.

The company, comprising about thirty gentlemen, members of the Massachusetts Horticultural Society, the Agricultural Club and other kindred associations, assembled at three o'clock and passed an hour pleasantly in the interchange of friendly greetings and congratulations to the guest of the occasion. Dinner being announced, ex-Alderman Charles H. B. Breck, chairman of the committee of arrangements, led the way to the banquet hall, which was tastefully embellished with fruit and flowers, appropriate emblems of the occasion. At the head of the hall was displayed the familiar painting depicting the scene at the opening of the United States Agricultural Society's Exhibition on the “South End Fair Grounds,” in October, 1855, the central figure in which was Colonel Wilder mounted on a white horse. At the left of the picture stood two life-size statues, executed in wood by Herbert Gleason, and loaned by their owner, William Emerson Baker of Wellesley. They represent Hon. Marshall P. Wilder standing with uncovered head, while Pomona, the goddess of fruits, is in the act of crowning him with a wreath of laurel.

The cloth having been removed, the company was called to order by ex Alderman Breck, who spoke as follows: “We have assembled here to-day to greet with kind words and to honour one whom we all love and esteem, whom we all have known intimately for years, who is well known throughout the length and breadth of our country, and whose name in England, France, Belgium and Holland, is held in high esteem by the pomologists and horticulturists of those countries. We come here to-day to celebrate his eightieth birthday, and to wish him many years yet of health, strength and vigour, and that his usefulness may be continued to his country for many years to come. I propose to you the health of our guest, Hon. Marshall P. Wilder.”

Colonel Wilder arose amid prolonged applause, and responded as follows :

Mr. President—I thank you for your kind expressions of respect, and you, my dear

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dear friends, for the very cordial reception you have given me; Nothing could be more grateful to my feelings than these warm demonstrations of friendship and regard, coming as they do from those who have known me for many years, and are conversant with my many frailties and faults. Yes, the wheels of time move on and tell the story of our bygone days; and if I live to see the opening of another Sabbath morn I shall have passed the bounds of fourscore years. Most devoutly would I render thanks to the Giver of all good that he has prolonged my life, and that I am able to be here with you on this joyous occasion—here in the presence of my beloved pastor, who for thirty years has been my spiritual adviser—here with so many kind friends and co-labourers, with whom I have taken sweet counsel these many years—here to receive your friendly salutations, and, perhaps, for the last time, to enjoy the sweet melody of your voices and breathe in the still sweeter consolation which arises like incense from off the altar of sympathizing souls.

When we reflect upon our past labours, our thoughts naturally revert to the Massachusetts Horticultural Society, whose fiftieth Annual Exhibition has just closed, and for which you, Mr. President, and your good father have done so much. Well do I remember its first exhibition in the old Exchange Coffee House in this city. Well do I remember the scene, with its two small side-tables and one at the head of the hall. Well do I recollect the contribution of fruits when Robert Manning, the great pomologist of America, contributed only two baskets of fruit, and the subsequent growth of his enterprise, when he donated many hundred varieties, and afterward had in the Pomological Garden at Salem 2000 varieties of fruit trees. Thank God, his son, bearing his own name, is with us to-day. Well do I remember the dinner at which sixty gentlemen participated, and the speeches which succeeded it. The scene is before me now. There sat at the head of the table the eloquent Dearborn, there on his right and left sat his honour Lieutenant-Governor Thomas L. Winthrop (father of our beloved Robert C. Winthrop) and his honour the then mayor of the city, Harrison Gray Otis, and the accomplished statesman and orator, Daniel Webster of immortal fame. (Applause.) There, too, were Hon. John C. Gray, vice-president; Dr. Jacob Bigelow, corresponding secretary of the society, and John B. Russell, all of whom still survive, and here to-day, much to our joy, are the brothers Hovey, who were present on that occasion. Well do I remember the toast of General Dearborn—"Intelligence and industry, the only true promoters of the public good"—a sentiment which deserves to be written in letters of living gold. I thank you, Mr. President, for your kind allusion to me as one who has done something to promote the interests and welfare of my fellow men.

My friends, I have lived to see great progress and improvement in the agriculture and horticulture of our country, much of which may be primarily traced to the enterprise and labours of Massachusetts men. Suffice it to say, that from the day when Governor Endicott planted his pear tree at Salem, which still lives; from the day that Peregrine White planted his apple tree at Marshfield, Mass.; from the day when our society was formed, it has stood prominently before the world as a leader and patron of agricultural and horticultural science. How marvellous the progress in our own day! How grand the march of horticulture since the establishment of our own society! It is scarcely fifty years since the Massachusetts Horticultural Society was formed. Then there were only two horticultural and but few agricultural societies in our land; now they are counted by thousands, and are scattered over the continent, all working harmoniously for the promotion of these arts. Then there was scarcely a nursery of any note west, and only a few east of the Hudson River; now they are planted from one shore of our country to the other, and among them are many of the largest in the world. Then Mr. Hovey had not sown the seeds of his strawberry and other fruits, which have since immortalized his name, or commenced laying out his extensive grounds, and building his houses in Cambridge. Then I had not planted a seed of the camellia, the azalea, pear or grape, or even attempted the hybridization of a plant; now our American fruits and plants enrich the gardens and adorn the catalogues of foreign lands. Then we had no such splendid villas as those of Hunnewell, Parson, Gray, and others, with their broad lawns, extensive glass structures and magnificent plants, which are such an honour to our land. Then we had many old and fine homes and gardens such as Governor Gore's, Mr. Lyman's, Mr. Preble's, Mr. Cushing's, the Perkinses and others; but very little in the way of landscape gardening, or in new or rare plants or fruits. Then our exhibitions were confined to a few days of the year, and were for many years held in small rooms; now many of our

exhibitions are the best given in any State in the Union. Then we had no building of our own; now we possess the most costly and magnificent temple of horticulture that the world can boast. Then the American Pomological Society, whose president, by the mercy of God, in his twenty-eighth year of service now stands before you, had never been dreamed of—a society that emanated primarily from the influence of the Massachusetts Horticultural Society—a society that embraces not only our national domain, but whose jurisdiction extends over our continent—whose catalogue prescribes the appropriate fruits for fifty States, territories and districts, and at whose quarter centennial in this city, the far-off State of Nebraska, with her Governor at her head, carried off triumphantly the Wilder Medal for the best collection of fruits. Then there were few exports of fruits; now we send 400,000 barrels of apples in good years to foreign lands. Then the grape was scarcely cultivated; now, in addition to all that are used for the table, we make 15,000,000 gallons of wine, and wine, too, that took the first prize at the World's Exhibition at Vienna in 1873. Then the statistics of our fruit crop were not thought worthy of record; now it amounts to \$140,000,000, or nearly the average annual value of our wheat crop. But I must bring these remarks to a close. I thank you for the kind references to me as a pioneer in rural affairs. You do me no more than justice, for I cannot, as I have told you before, remember the time when I was not fond of the cultivation of the soil. But, gentlemen, my labours are mostly over. Soon I shall be resting in the bosom of my mother earth, but if I can believe I have done anything to advance the great interests of our land, and which shall contribute to the happiness of my fellow men, shall, so far as this world is concerned, die content, feeling that I have not lived in vain.

MICHIGAN STATE POMOLOGICAL SOCIETY

The following paper on Cranberry culture was read at the meeting of this Society in December, 1877:—

ST JOSEPH Mich., Dec. 3.

It not being convenient for me to attend your meeting at this time, I have taken the liberty of sending you by express a sample of cranberries picked on the natural cranberry marsh I am improving near this place.

I would also call the attention of your Society to the importance of the cultivation of this fruit in this State, where I suppose there is considerable soil adapted to its growth. In Wisconsin it is becoming a very large business, one grower having this year gathered a crop of over 6,000 barrels, on about 200 acres of land which has not cost over \$25 per acre to improve, and they are worth \$8 per barrel at this place. Several others have crops of 2,000 and 4,000 barrels. The only serious obstacle in Wisconsin is the danger from frost, which I suppose would be less likely to trouble them in this State. I have spent the past four years in superintending the improvement of a large cranberry farm in Jackson County, Wisconsin, which yielded its first crop of about two hundred barrels this year, and should have had more, but for frost. The sample I send you is of the "Bell & Bugle" variety, and are very superior berries as to size, flavour and keeping qualities.

They are the natural variety grown in the large natural marsh of over 200 acres, which I selected in this vicinity from its possessing in a very perfect manner all the conditions for a cranberry farm. It is within half a mile of Lake Michigan, which renders it absolutely free from danger of frost. The water supply, depth of soil, etc., are the best of any I know of in the West.

I should be pleased to give any members of your Society any advice in my power, on the selection or improvement of cranberry lands.

Aside from my personal experience in the business, I have been acquainted with many of the most successful growers both East and West, and have been familiar with the history and *modus* of the business, and reasons for its success and failure in different places. I may say I believe the West can excel the East in this as far as in growing wheat and corn. On my land, this year, I picked at the rate of 450 bushels per acre. From the limited extent

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of land well adapted to the cranberry, I believe there is no danger of overstocking the market.

Very respectfully,
S. H. COMINGS.

Also the following essay on the Phylloxera and grape rot was read by the Secretary, in the absence of the writer, Prof. A. J. Cook, of Lansing. He says:

It is well known that the subject of black rot in grapes, for years the cause of some anxiety, has of late become a matter of the most serious consideration in some parts of our own and contiguous States. Since 1864 this evil has been rapidly increasing, not only reaching out to blight new vineyards, but also clutching in its withering grasp many new varieties. It is a question of no small moment, whether there is any relation between this fatal rot and the insect known, at least in some regions, to be the arch destroyer of the vine.

As I shall show in the sequel, there is some reason to believe that these hold the relation of cause and effect. The Phylloxera, by its withering presence, so destroys the vigour of the vines that they fail to ripen the fruit, and as a result we find black rot among the grapes. Without doubt the Phylloxera, so destructive in Europe, is an American insect of quite recent importation into Europe. That it has been sucking the vitality from our grape-vines during the past is a fact beyond question. The insect is polymorphous, or exists in several forms.

In every form each louse is exceedingly small, appearing to the unaided vision as a mere speck of matter whose vitality would hardly be surmised except as it is seen to move. One form is smooth, oblong and yellow and only works—at least this is probable—in galls on the leaves. These galls are very noticeable, sorely marring the appearance of the leaves, and are caused by the presence of the lice. Within the galls the eggs are laid, and the young lice brought forth. These gall Phylloxera are agamic, that is produce without males, and apterous.

Another form—the root form—are greenish yellow, oval in form, and not smooth but covered with wartlike projections. These too are agamic and apterous. These by their punctures and sucking proclivities cause the root to appear knotted and to die, the plants to decline, and when the lice are very numerous, to wither away, and I have reason to believe they may at least cause the black rot.

In summer another form appears, the progeny of these agamic root-lice with wings. These come forth, and by flying to other vineyards to deposit eggs, spread this terrible evil with a rapidity not otherwise possible.

Hence we see that the presence of these pests in our vineyards need not be a matter of conjecture only, for while the insects are mere specks, either the galls on the leaves or the knots on the roots give quick indication of the dreaded foe.

I have come to the conclusion that the Phylloxera causes the rot by obstructing the sap, and so lessening the vigour of the vines that they are unable to ripen all their fruit, and thus many grapes wither. This sapping of the vines, too, very likely induces excessive fruiting. As in all organic nature, the weak and the feeble are more prolific, as if expecting their near demise, thus the Phylloxera not only sows the seeds of destruction but induces a condition in the very habit of the vine. That the lice are the first cause in some, if not in all cases of black rot, seems evident from the fact that their presence or absence is sure evidence of the presence or absence of rot.

Of course I would not say that black rot never occurs except as a sequence of the enervating attack of the Phylloxera, as they indirectly cause it, by depleting the vitality of the vines. Yet we have good reason, I think, to prefer strong charges against this minute, but powerful destroyer.

J. C. Holmes, of Detroit, sent a letter to the Secretary, relative to this same subject, and in it he says:

"You know that the grapes in some of the vineyards at Grosse Isle were, in some way, the last summer, destroyed before coming to maturity. I see by the papers that Prof. Cook thinks the state of the atmosphere, want of drainage, etc., had something to do with the destruction of the grapes. Perhaps it is so, but I think the Phylloxera is a

little at fault in this matter. A few weeks since Dr. Benedict brought me a few grapes from his vineyard on Grosse Isle, that had been injured as described by Prof. Cook.

"On some of the grapes that were still fresh, I noticed a semi-circular mark, similar to the mark of the curculio on plums, and within the part bounded by this mark I noticed several very minute spots or excrescences which looked very much like the work of an insect. The Doctor noticed that as the grapes began to show signs of disease, that this little semi-circular mark was upon the damaged fruit, so small at first that it required very close observation to detect it. The mark gradually increased in size until it could readily be seen. I took a little thin slice, with a little of the pulp from this diseased part of the grape, placed it upside down upon a glass slide, then under the microscope. I found that this little juice of the grape was filled with Phylloxera, quite lively and feeding on the juice of the grape. This shows that the Phylloxera in one form and at some part of the season will attack the fruit as well as the roots and leaves of grapes. This may be the cause of the shrivelling up of the grapes."

WEeping TREES.

A paper read before the Western New York Horticultural Society by Wm. C. Barry.

WEeping OR DROOPING TREES.

In this class are embraced the most charming examples of ornamental trees. Graceful in outline, elegant and novel in their mode of growth, impressive and attractive in appearance, they possess all those characteristics of growth and foliage which render them especially desirable and valuable for the embellishment of landscapes and the ornamentation of grounds. The beautiful cut-leaved Weeping Birch, sometimes called the Lady Birch, with its bright bark glistening in the summer's sun and its graceful drooping branches, swaying in the lightest breeze, is a worthy subject for the artist's pencil and the poet's pen. In winter too, covered with ice and illuminated with the brilliant rays of the setting sun, its trembling branches apparently studded with innumerable brilliants, it presents a charming picture, attracting the attention and winning the admiration of even the most careless and indifferent observer. This elegant tree which Mr. Scott very appropriately calls "the most exquisite of modern sylvan belles," was introduced and first offered for sale in this country by Ellwanger & Barry about the year 1851. Henry W. Sargent, Esq., writing to the *Horticulturist* from Germany in 1848, and describing Booth's nursery at Holstein stated that "among trees and shrubs new to me I noticed a Weeping Birch peculiar to Germany. It had descending shoots 32 feet long. The branches hung as perpendicular downward as those of the *Sophora pendula* or the common weeping willow and are quite as delicate and pensile as the latter." From this description Messrs E. & B. at once concluded, that this must be a very desirable and valuable tree, and they immediately ordered a specimen to be forwarded to them. In due time it came, was planted, and as soon as possible, a large stock of young trees was obtained. No novelty was ever received with greater enthusiasm, or gave more general satisfaction than this. The demand was so great that for several years from 5 to 15,000 stocks were budded annually. Until the month of November last the original imported tree stood in their nursery grounds a living monument, full of beauty and grace, adorning the landscape, and gaining for itself hosts of admirers. Unfortunately, however, being in the way of projected improvements, it had to be destroyed, much to the regret of those who had seen it planted, and watched its growth for nearly twenty-five years. In view of the many interesting facts associated with it, it had already become a historical tree, but fifty years hence, when its offspring will be found in every city and hamlet of this great country, it would have been, could it have been left standing, remarkably interesting to the admirers of characteristic and noteworthy trees. Mr. Scott, who evidently appreciates the value of this Birch for ornamental planting, says that:—

"It stands the acknowledged queen of all the airy graces with which lightsome trees coquette with the sky and summer air. It lacks no charm essential to its rank. Erect, slender, tall, it gains height only to bend its silvery spray with a caressing grace on every

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side. Like our magnificent Weeping Elm, but lighter, smaller, and brighter in its features, it rapidly lifts its head among its compeers till it overtops them, and then spreads its branches, drooping and subdividing into the most delicate silvery branchlets, whose pensile grace is only equalled by those of the Weeping Willow."

Although extensively planted in all parts of this country, it is far from enjoying that universal recognition to which its merits justly entitle it. While I was surprised to note its absence in the finer European parks and gardens, I am still more astonished to see so few fine examples in a city where it has been propagated by the thousands for years. The managers of our parks, too, have evinced great indifference towards this tree, if we may judge from the small number of fine specimens to be found growing in them. Strange as it may appear, it seems to have been reserved for the projectors of one of the fine parks in the West to properly employ this truly noble tree, by planting one of their leading avenues with it. All honour to the gentlemen of Chicago, who, realizing the surpassing charms and beauties of this Birch, have not only formed an avenue which will do credit to the park and themselves for all time to come, but will teach, stimulate and encourage similar efforts in other places.

The Cut-leaved Birch is one of those trees which is complete in itself. It has no defects of habit which require to be concealed, and should always be planted by itself in the most prominent and conspicuous position on the lawn. Although it is a rapid grower and attains to considerable size, it is equally well adapted for large and small grounds, and wherever planted always contributes towards rendering a landscape charming and effective. For avenue planting it surpasses all other trees. I have in my mind an avenue which has been planted lately in our city, and I trust the time is not far distant when we shall have several. Were we limited to a single ornamental tree, we should have no hesitation in selecting this in preference to any other. It is the most graceful of all trees, and deserves to be better known and more widely disseminated.

Young's Weeping Birch is a new and interesting variety, which is admirably adapted for the lawn. It was discovered about twenty-five years ago by Mr. W. Young, of the Milford Nursery, England. Owing to the slenderness of the branches, which in the original plant were so weak as to creep along the surface, great difficulty was experienced in propagating it. It was first offered in this country by Ellwanger & Barry in 1873. To the graceful elegance peculiar to the Birch family it adds the odd, singular erratic habit of Weeping Beech. It has long slender, thread-like branchlets, which fall from the main branches like spray. Grafted upon stems 6 to 7 feet high, it can be grown into a rounded, regular head, like the Kilmarnock Willow, or left to itself, it will send up a leading shoot, with side branches like the cut-leaved, only more spreading. In this distinct type we have gracefulness and picturesqueness combined. It is one of the very best of new trees, and worthy of being introduced into every garden.

Betula alba pendula elegans is another charming variety, of quite recent introduction, and, as yet, but little known. It originated with the Messrs. Bonamy Brothers, at Toulouse, France, in the year 1866, and was first exhibited by them at the Paris Universal Exhibition in 1867, where it received a gold medal, the highest award for new trees. Ellwanger & Barry first offered it in this country in 1873. Its habit of growth is unique and beautiful. Grafted on stems 6 to 8 feet high, the branches grow directly downwards, parallel with the stem. Its decided pendulous habit, rich handsome foliage, delicate branches, render it particularly showy and attractive on the lawn. Among ornamental trees of recent introduction, this and Young's Weeping may be considered the most valuable acquisitions of many years.

The *Kilmarnock Weeping Willow*, first offered in this country by Ellwanger & Barry in 1857, is now so well known as to need no description. Being one of the most popular and widely disseminated of weeping trees, its history may not be uninteresting. "It was discovered growing wild in a sequestered corner of Monkwood estate, near Ayr, in Scotland, by an aged botanist, named James Smith, an enthusiastic lover of plants, and a zealous collector. From him, Mr. Lang, a nurseryman at Kilmarnock, purchased one plant in the year 1844."

Sir W. J. Hooker, curator of Kew Gardens, received two plants in the spring of 1852, and, having observed how exceedingly ornamental it was, gave Mr. Lang a decided opinion, stating that he thought very highly of it, and that it was much admired in the Royal Gardens at Kew. The name, Kilmarnock Weeping Willow, was given to distin-

guish it from the common weeping willow and the American weeping willow. Of all weeping trees, it is the one best adapted for small lawns, garden plots or yards. Very handsome plants may now be obtained, grafted on stems 6 to 8 feet high, for training into umbrella heads. Grafted low, say three to four feet high, with the head nicely kept and the branches trailing on the ground, it becomes a novel and interesting object on the lawn. For rounding off or completing the end of a belt or border of trees or shrubs, it is very appropriate. In my tour through Scotland, the past summer, I did not meet with a single specimen of this tree, either in the parks, nurseries or gardens, and I am at a loss to know why it is so little esteemed in its own home, especially since we in this country hardly think any ornamental tree equal to it.

The Weeping Beech is undoubtedly one of the most remarkable of drooping trees. Its habit of growth is odd and eccentric, but at the same time picturesque and beautiful. A strong grower, its branches shoot upward, then outward, twist in various directions, and turn into a variety of shapes; then droop and trail on the ground. Divested of its leaves, it is quite ungainly; but clothed with its rich luxuriant foliage, it presents a magnificent appearance. It is one of the largest and most curious of lawn trees, and should be planted by itself, where it can have abundance of room. Large specimens often cover an area one hundred feet in diameter. Its history is somewhat remarkable. Some sixty years ago Baron de Man's gardener at Beersel, Belgium, was planting an avenue of beeches. The Baron, while superintending the work, noticed among the trees selected for the purpose one poor and crooked specimen, and rejected it. The gardener thinking, however, that it possessed some merit, planted it in a corner of the garden, where it grew to be one of the most beautiful and singular of trees. One of the noblest of specimens I have seen was in Mr. Anthony Waterer's nurseries, at Woking, England.

The New American or Fountain Willow is a well known pendulous variety, which forms a very handsome specimen when budded standard high. While it can be trained in umbrella form like the Kilmarnock willow, it is a much stronger grower, and requires more space. On account its vigorous growth, it is much more difficult to keep in shape than the Kilmarnock, and, all things considered, hardly equal to that variety for ornamental planting. It is a trailing species of American willow, grafted standard high, and was introduced from France about the year 1852.

The European Weeping Ash is a well known weeping tree of vigorous habit, its branches spreading at first horizontally, but gradually drooping towards the ground. Its strong, stiff growth does not render it as graceful and ornamental as many of the trees of this class, but planted singly on a large lawn, it forms an interesting object. It is one of the best trees for forming an arbour.

The White leaved Weeping Linden is a handsome drooping variety, with large round leaves, of a grayish green colour above, and silvery gray beneath. Worked upon stocks standard high, the branches shoot out almost horizontally, and as they increase in length, bend gracefully towards the ground giving the tree a decidedly pendulous character. Being a strong grower it requires to be vigorously pruned to keep it in shape. In this way it can be trained into a round symmetrical head, and will always be found a desirable addition to any collection, on account of its distinct silvery foliage, which contrasts effectively with the deep green of other trees.

Of *Weeping Elms* there are several which deserve attention. Our American Elm is one of the most noble and stately of weeping trees. It is so well known that any notice of it here would be superfluous, but it may be proper to remark that it is not admissible on small lawns.

The most popular of weeping Elms, is the *Camperdown*, a very picturesque and elegant tree which can be employed with the most satisfactory results in extensive grounds, as well as in small garden plots. It is of rank growth, the shoots often making a zigzag growth outward and downward of several feet in a single season. The leaves are large, dark green and glossy and cover the tree with a luxuriant mass of verdure. By a judicious use of the knife, it can be kept very regular and symmetrical in form, and a handsome specimen isolated on the lawn, will always arrest attention and elicit admiration.

The Scotch Weeping Elm (*montana pendula*), is a drooping variety, resembling the *Camperdown*, but not so good.

The Rough-leaved Weeping Elm (*rugosa pendula*), is a pendulous variety with large

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rough leaves, and *Elm viminalis*, sometimes classed among drooping trees, is a distinct slender branched variety, very ornamental in habit and foliage.

The Weeping Mountain Ash has probably received as much attention as any weeping tree, on account of its distinct and curious habit. A careful examination of its mode of growth cannot fail to excite wonder. If worked two to three feet from the ground and allowed to grow wild, it soon becomes as odd a piece of framework as it is possible to imagine. I have an indistinct recollection of one I saw growing in this manner, and at the time, I considered it as great a curiosity as I had ever seen. Grafted six to eight feet high, it becomes a very desirable lawn tree, and in the Autumn, laden with large clusters of bright red fruit, it produces a brilliant effect.

The Weeping Poplar (Populus grandidentata pendula), although not so elegant and graceful as some of the drooping trees we have mentioned, has many desirable qualities which commend it to the admirers of fine trees. Its character is decidedly pendulous, and its branches spread and droop gracefully towards the ground. But the knife must be used unsparingly to preserve its symmetry. It is the most rapid grower of any in this class, and those who desire a weeper which will produce *immediate effect*, will find their wants amply required by planting this tree.

The Black Barked Weeping Poplar and the *Parasol de St. Julien*, two varieties recently introduced from France, are almost similar to the above.

Probably the most remarkable and beautiful tree in this class, and one which is very little known or mentioned, is *Bujol's Weeping Honey Locust*. It has every characteristic of habit and foliage to commend it, but in severe winters it is liable to injury from frost. Its propagation is somewhat difficult, which will always make it expensive and rare. Like the Weeping Japan Sophora, it sometimes succeeds in sheltered positions. I know of only one specimen in this vicinity, which has survived the severity of several winters, unprotected. Those who love and admire fine trees sufficiently, to give them the necessary protection, will feel themselves amply repaid for any trouble or expense they may incur in securing a specimen, and giving it the protection it requires.

The Weeping Japan Sophora, one of the most beautiful weeping trees, is not quite hardy here, and is not propagated in the nurseries. We have a fine specimen tree, however, which thrives in a sheltered position, the same as that occupied by the Sequoia or big tree of California. The Gold Barked Weeping Ash, a handsome weeper is not hardy.

The Weeping Cherries—*Everflowering weeping, avium pendula, Bigarreau pendula*, are all pretty lawn trees, but not sufficiently known to be properly appreciated. On some future occasion I hope to be able to call attention to these more particularly. It should be borne in mind by those intending to plant drooping trees, that their appropriate position is always on the open lawn, single, never in groups or masses, nor mixed in with other trees or shrubs in belts or borders. In the hands of the skilled planter they are capable of producing the most charming results and are more effective in giving character and expression to a landscape than any other trees. I append a list of select varieties for large and small grounds.

SELECT DROOPING TREES FOR SMALL GROUNDS.

Kilmarnock Weeping Willow.
Young's Weeping Birch.
Cut-leaved Weeping Birch.
Dwarf Weeping Cherry.

Weeping Larch.
American Weeping Willow.
Camperdown Weeping Elm.
Birch elegans pendula

To the above may be added—

FOR EXTENSIVE GROUNDS.

Ash, European Weeping.
Beech, Weeping.
Birch, European Weeping.
Birch, tristis.
Elm, Corked-barked Weeping.

Elm, Scotch Weeping.
Linden, Weeping.
Weeping Poplar.
Weeping Cherry.
Mountain Ash, Weeping.