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TRANSACTIONS

AND

REPORTS

OF THE

*Fruit Growers' Association*

AND

INTERNATIONAL SHOW SOCIETY

OF

NOVA SCOTIA,

1890.

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*Published by Order of the Government of Nova Scotia.*

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NOVA SCOTIA PRINTING COMPANY.

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- PICTOU
- CUMBER
- ANTIGON
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- CAPE BR
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# FRUIT GROWERS' ASSOCIATION

AND

## INTERNATIONAL SHOW SOCIETY

OF

### NOVA SCOTIA.

Patron.

HIS HONOR THE HON. A. W. McLELLAN, LIEUTENANT-GOVERNOR.

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HENRY CHIPMAN, M. D. .... Grand Pre, N. S.

Senior Vice-President.

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CAPE BRETON "	WILLIAM PURVIS, ESQ.	Sydney.
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Small Fruit Committee.

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THOS. A  
THOS. A  
A. K. MA  
J. F. KE  
M. P. BL  
HON. P.  
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## HONORARY MEMBERS.

	<i>Date of Election.</i>
ROBERT GRANT HALIBURTON, M. A., F. S. A. ....	Jan. 30, 1873.
JOSEPH R. HEA, D. C. L., Toronto.....	" 6, 1874.
GENERAL SIR HASTINGS DOYLE, K. <sup>c</sup> C. M. G. (deceased).....	April 9, 1875.
ADMIRAL SIR JAMES HOPE, Harriden, Bo'ness, Scotland.....	" "
HON. MARSHALL P. WILDER, Boston, Mass., (deceased).....	" "
HON. CHARLES DOWNING, Newburg, New York, (deceased).....	" "
EDWIN W. BUSWELL, ESQ., Boston, Mass.....	" "
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D. W. BEADLE, ESQ., St. Catherine's, Ont.....	" "
ROBERT MANNING, ESQ., Boston, Mass.....	" "
RICHARD STARR, ESQ., Cornwallis, N. S., (deceased).....	" "
F. C. SUMICHRAST, ESQ., Harvard University, Boston.....	Jan. 10, 1886
JOHN LOWE, ESQ., London, G. B.....	" 15, 1884.
THE HON. SIR CHARLES TUPPER, G. C. M. G., C. B., London, G. B.....	" 20, 1887.
PROF. WILLIAM SAUNDERS, F. R. S. C., F. L. S., F. C. S., Ottawa.....	" "
PROF. JOHN McCOUN, F. R. S. C., F. L. S., Ottawa.....	" "
PROF. JAMES FLETCHER, F. R. S. C., F. C. S., Ottawa.....	" "
PROF. D. P. PENHALLOW, F. R. S. C., Montreal.....	" "
CHAS. GIBB, ESQ., Montreal (deceased).....	" "
PROF. H. W. SMITH, B.Sc., Truro, N. S.....	" "

## LIFE MEMBERS.

	<i>Date of Election.</i>
J. W. BIGELOW, ESQ., Wolfville.....	April 9, 1875.
HENRY B. WITTER, ESQ., Wolfville.....	" "
CHAS. E. BROWN, ESQ., Yarmouth.....	Oct. 1, "
EDWIN CHASE, ESQ., Cornwallis.....	Nov. 1, "
R. W. STARR, ESQ., Wolfville.....	" "
CHAS. R. H. STARR, ESQ., Wolfville.....	Jan. 3, 1876.
W. C. SILVER, ESQ., Halifax.....	Dec. " "
JAMES SCOTT, ESQ., ".....	" " "
GEORGE LAWSON, Ph. D. ".....	" " "
JOHN STAIRS, ESQ., " (deceased).....	" " "
THOS. A. BROWN, ESQ., " (deceased).....	" " "
THOS. A. RITCHIE, ESQ., ".....	" " "
A. K. MACKINLAY, ESQ., ".....	" " "
J. F. KENNY, ESQ., ".....	" " "
M. P. BLACK, ESQ., " (deceased).....	" " "
HON. P. C. HILL, ".....	" " "
EDWARD BINNEY, ESQ., " (deceased).....	" " "
JAMES FARQUHAR, ESQ., ".....	" 1888.

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BRIDGEWATER AGR. SOC. PRES. Bridgewater.	JOHNSON, C. Y. .... Wolfville.
BISHOP, E. R. .... Pt. Williams Stn.	JOHNSON, E. C. .... "
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BISHOP, WATSON. .... Kentville.	
BLAIR, COL. W. M. .... Nappan.	PATTERSON, A. McN. .... Horton Landing.
BRIGNELL, JOHN. .... Yarmouth.	PARKER, T. H. .... Berwick.
	RRID, DR. A. P. .... Dartmouth.
CALDWELL, J. W. .... Wolfville.	RAND, GEO. V. .... Wolfville.
CHIPMAN, DR. H. .... Grand Pre.	
CREIGHTON, WILLIAM O. .... West River.	SAWYER, REV. A. W. .... Wolfville.
CASEY, N <sup>Y</sup> SON. .... Newport.	STERLING, JAS. L. .... Newport.
CHIPMAN, X. Y. .... Wolfville.	SMITH, T. E. .... Port Williams.
	SHAW, ISAAC. .... Berwick.
DENNISON, DR. .... Newport.	
DODD, J. S. .... Wolfville.	TUPPER, F. G. .... Horton Landing.
DONALDSON, JOHN. .... Port Williams.	TUZO, CAPT. T. .... "
ELDERKIN, CAPT. J. A. .... Falmouth.	
ELDERKIN, A. D. .... Wolfville.	VAUGHAN, C. M. .... Wolfville.
GERTRIDGE, J. L. .... Gaspereaux.	WHITMAN, A. .... Waterville.
	WOODBURY, DR. F. .... Halifax.
HIGGINS, PROF. D. F. .... Wolfville.	WENTZELL, R. W. .... Bridgewater.
HARRIS, R. E. .... Port Williams.	WALLACE, HENRY. .... Avondale.
HARDWICK, W. H. .... Canard.	WITTER, BURPES. .... Wolfville.
HAMILTON, GEO. .... Grand Pre.	WOOLAVER, NELSON. .... Brooklyn.
HAMILTON, J. W. .... Wolfville.	
HARRIS, JOHN. .... Wolfville.	YOUNG, DR. .... Windsor.
HARVEY, GEO. .... Burlington.	

## FINANCIAL STATEMENT.

FRUIT GROWERS' ASSOCIATION of N. S. in account with C. R. H. STARR, Secretary-Treasurer.

1889.	Dr.		1889.	Cr.	
To Expense Meetings, including Dinner.....		\$ 56 75	By Balance from acct., 1888.....		\$189 18
Printing and Stationary.....		246 95	Government Grant, less Bank commission.....		299 62
Reporting.....		30 00	Cash from other sources.....		90 00
Express, Postage, Telegrams and Sundries.....		15 95	Amt. represented by Securities.....		291 69
Salary.....		100 00			
Amt. represented by Securities.....		291 69			
Cash in Bank.....		129 15			
		<u>\$870 49</u>			<u>\$870 49</u>

Audited and found correct,  
 J. W. BIGELOW,  
 G. H. WALLACE.

C. R. H. STARR,  
 Secretary-Treasurer.

WOLFVILLE, February 5th, 1890.



## SPRING MEETING.

MINUTES OF MEETING HELD AT BROOKLYN, HANTS,  
APRIL 25th, 1889.

PRESIDENT took the Chair and called the meeting to order. The Secretary being absent through illness, R. W. STARR was requested to act *pro tem*. Members present were: Dr. Chipman, President; J. T. Jackson, T. H. Parker, H. Blanchard, Senior Vice-President, Prof. Hinds, Mr. Sterling, R. W. Starr, and about 40 others, mostly farmers.

President CHIPMAN made a short introductory speech, and then went on to say, "That as the splitting of the bark of bearing apple trees seemed to be prevalent in the locality, and a probability of great damage to many orchards in consequence, he thought it of the utmost importance to get all the information possible, and as Prof. Hind had made a special study of the subject, he would call upon him to open the discussion.

PROFESSOR HIND then gave a most valuable and interesting address, and we very much regret that a stenographer had not been present in order that the whole might have been preserved.

In the discussion which followed, Vice-President BLANCHARD said: I have suffered severely from this disease. I find it differs, some have a distinctly sour odour, while others do not seem to be affected in that way. It attacks all varieties, no sorts being exempt. I find great difference in the appearance of the disease in Ellershouse and at Windsor. The soil at Ellershouse is a slaty gravel, and the trees are young, the bark splits and loosens for some distance up the trunk. At Windsor the damage is close to the ground, and the soil is a heavy clay loam, tile drained.

T. H. PARKER:—I have had some experience in this matter and have been watching it for several years in West Cornwallis, and I have seen its effects in Mr. Sterling's orchard here to-day, but have not yet been able to find any theory that would exactly fit the case.

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DR. DENNISON :—Is it not the effect of some parasite, or of some fungoid growth, and should not some of these trees, or sections of them, be submitted to microscopical examination by experts and reported upon.

MR. MILLER :—Some of my trees are affected with this disease but on the north side only. I would like to ask Mr. Blanchard if he has observed anything of the kind.

MR. BLANCHARD :—My gardener called my attention to the fact that the bark was always split on the south side.

R. W. STARR :—Last summer I examined an orchard in Cornwallis that was badly affected, the trees were of different ages and of several sorts, but the Gravensteins had suffered most. The soil is a heavy loam with retentive sub-soil, and highly cultivated. The previous season was wet and warm, inducing a luxuriant late growth followed by early and severe frosts in November. My theory is that the disease is owing to the action of frost on immature cambium, and may be, I think, compared to blood poisoning in animal life.

MR. BLANCHARD :—To sum up the facts, it seems that a strong late flow of sap, caused a deposite of immature cambium. Intense cold in November destroyed the new tissue, and where the bark did not burst and let in the air, acid fermentation set in, causing that distinctly sour odour that we have noticed.

MR. MILLER :—If this be true we can do nothing but pray for mild autumns.

R. W. STARR :—By no means, we must work as well. We must try to get such a system of cultivation as will induce early growth and perfect ripening of wood, by applying raw manure in the fall, so that it may become incorporated with the soil and ready for plant food early in the season, and above all things we must, where needed, thoroughly drain the land to get rid of the superabundance of moisture, when we have those occasional wet seasons to guard against.

The meeting by resolution requested Professor Hind to follow up this subject and report all the information obtainable at the Annual Meeting.

The Professor agreed to this on the condition that fruit growers generally should assist, by sending him all the facts coming under their observation.

He then exhibited a bottle of Kerosine Emulsion, made on the recipe of Professor O'Riley, as published in the "Transactions of 1887," and said it had proved a good insecticide so far as he had tried it. He also gave his experience in the use of carbolic acid in bottles covered with water and had found it very effectual as a trap.

The PRESIDENT urged the claims of the Association on the farmers of the Province. We want a very much larger list of members so as to increase our sphere of usefulness. We are endeavouring to help all the fruit growers and farmers, and we ask them in return to help us, but this cannot be done while they hold aloof.

The SECRETARY said that he would be glad to get the names of all present, accompanied by the annual fee of \$1, and would give the "Transactions for 1887" to each new member, while he hoped that the volumes for 1888 and 1889 would soon be ready for distribution. Seven gentlemen responded and paid the annual fee of \$1, and received certificates of membership and Reports.

MR. ——— :—I have a suggestion to make ;—I would propose that the Fruit Growers' Association, the Dairyman's Association, and the Grange combine and form one strong body, they would then be able to make their influence felt throughout the province

R. W. STARR :—I have frequently thought of this, and if it could be accomplished it would be a grand thing, but there are many difficulties in the way. The Grange being a secret society prevents amalgamation with it, and although there is no insuperable barrier between the other two, yet it might be found difficult to serve both objects with one set of officers. It is well understood that to make any society a success you must have enthusiasts for executive officers, and I fear that it might be found difficult to combine the energy, ability and zeal of the present Secretaries of those societies in one person.

The Session then adjourned to meet at 7.30 P. M.

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## EVENING SESSION.

*Question* :—“ When is the best time to prune ? ”

T. H. PARKER :—I think it best to prune in the autumn, just after the crop is taken off, as at that time the tree is dormant, and I think that the wounds heal better than in the spring. As a rule we do not prune enough, we should thin out the branches to let the sunlight to every part of the tree ; but all wounds should be covered with paint, varnish, or melted grafting wax.

G. L. STERLING :—My experience in fall pruning is one that I do not want to repeat ; it has been fatal in some trees where I have tried it.

MR. PARKER :—I referred to excessive pruning. A few years ago I had some Ribstons that would not bear to suit me, and was induced to graft them out, and I cut them back very severely for that purpose. Those trees have since given good crops of large perfect fruit, and I have cut out the cions leaving the tree as it was.

J. T. JACKSON :—These are questions that can only be answered by extensive experiments, carefully conducted and repeated. Theories are all very well, but they must be proved before we can place much dependence upon them.

PRESIDENT :—This shews the necessity of experimental stations or farms carried on by the government, as no private fruit-grower or farmer can afford to make these costly experiments for his own benefit alone. The Dominion Government have made a good beginning with their central farm at Ottawa and branches in the North-West, British Columbia and Cumberland ; but I must say that unless a Fruit Station is started somewhere in the Valley that I fear that many of these questions discussed to-day will remain unanswered by their experiments, as soils and climatic influences are so widely different.

*Question* :—“ What are the most profitable sorts of apples for a Commercial Orchard ? ”

R. W. STARR :—The Commercial Orchardist must study his market, and that market at present is England, and probably will be for some time yet. He must therefore plant such kinds as will bring the best prices in their respective seasons, provided that they are also

good healthy trees, good bearers, and will carry well. In my opinion, therefore, he can do no better than to plant Gravenstein, Ribston, King, Blenheim, Golden Russet, Fallawater and Nonpareil. Baldwin's are good when bright, but they are frequently off in colour, and that means off in price. Spy has the same failing, and is also rather treacherous to carry. The others named will usually be found reliable and give good returns.

MR. ——— :—You say England is our market, do we not sometimes send large quantities of apples to the United States?

R. W. STARR :—Yes, and one winter we sent several large cargoes of potatoes to London, but we do not consider London our potatoe market, these are the exceptions that prove the rule. The United States only want our apples on occasions of the failure of their own crops, or to handle them for us as middlemen; this they have frequently done in the past, at a profit to themselves, from their better facilities for steamer shipment, but the benefit to us is doubtful. We think it pays better to ship direct.

The PRESIDENT gave some statistics of the apple trade and his experience of shipments, and went on to say that, "Where farmers sent their own fruit to market at their own risk, they were forced, as it were, to pack in the best manner or submit to loss, as on the other side everything is examined and sold on its merits."

R. W. STARR quoted from "Johnson's Dominion Statistics," and argued that the prospects for orchard planting, so far from being over-done, was brighter than ever, and advised continuous effort in that direction, stating that if we raised thousands of barrels where we now raise hundreds, we should get better freight rates, and better prices, in comparison with our neighbours, from being better known. The local trade also is developing fast, there are hundreds of barrels now sold in our mining and manufacturing towns where tens were sold in the last decade, and those towns are growing faster than the local supply of apples from the Eastern Counties.

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## ANNUAL MEETING.

STENOGRAPHIC REPORT BY W. B. WALLACE.

THE Twenty-Sixth Annual Meeting of the Fruit Growers' Association began at Wolfville, on February 5th, 1890, the President, DR. CHIPMAN, taking the Chair at 2.30 P. M., and there being a fair attendance of members.

On motion of R. W. STARR the report of the Secretary was adopted.

MR. R. W. STARR, as chairman of the Fruit Committee, read the report of that Committee, which was as follows :—

### REPORT OF FRUIT COMMITTEE.

*Mr. President*,—I beg leave to present the following as the report of the Fruit Committee :—The apple crop of the past season has proved (notwithstanding the low estimates published during the summer) one of full average quantity, and of more than average quality in all points except the important one of keeping. Form, colour and flavour have been good, size very good. The crop packing out with exceptionally little waste, and that largely due to wormy fruit. The great drawback to success in the market has been the early ripening of some of our best varieties, rendering them unfit to stand the rough usage given them by the steamship companies in their methods of handling and stowing. The Gravenstein and the Ribston were particularly noted for the failure to "stand up well" during transit, and most other sorts have had to be sent to market a month or six weeks earlier than usual, so that at this present time, about the only fruit yet left to go forward is what is usually termed "Long Keepers," and that is showing more than usual signs of ripeness and maturity for the season. In looking for a reason for this extraordinary want of keeping qualities in our apples this year, we must remember the peculiar climatic conditions of the

past summer. A very early and warm spring, with plenty of moisture during the early summer, but hot and dry during most of August and September, all of which tended to bring the fruit on rapidly and ripen it prematurely.

I hoped to have been able to have given some statistics of the fruit shipment of the season, but failed to procure it in time for this meeting. I still hope to be able to lay it before the Association at the April session.

*Pears* were a fair crop and of good quality, flavour much superior to last year. Late pears were especially good in quality.

*Plums* were a short crop and ripened early, but the quality was very good.

*Cherries* were average crop and the quality very good, except where bitten by the curculio, which was very prevalent in some localities, and for lack of its favorite fruit, the plum, proceeded to attack the cherries.

I have thought it advisable to give the Association the result of some notes and observations on the success of some of the newer fruits during the season of 1889.

I presume that it may be owing to the abnormally hot dry weather during all the month of September, and the seasonable rains in October, but from whatever the cause it is the fact that several new sorts of apples have shown a wonderful advance in quality over former years. "Waugh's Gavenstein," if we could always rely upon its doing as well as it has done this year, would be well worth growing. "Grimes' Golden" has many good qualities, it is an early and constant bearer, and as the trees get aged the fruit seems to improve in size and colour; but it does not yet seem to take, in any of our markets. I have sent it to London several times, and although it sold at paying prices, the advice has always been don't send, we have no use for it. "Hurlburt."—This apple has done remarkably well this year, large, even-sized, bright red. Five trees eight years set, gave three barrels of No. 1's, and one barrel of No. 2's and windfalls. I think they will suit the London markets very well. "Long Stem."—Larger and handsomer than I ever before saw them; tree loaded with very even sized fruit. "Stark."—I think more highly of this apple every year, it will yet take a first place among our long keepers. It is a good, healthy, strong grower, bears early

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and abundantly, and has very little waste fruit, and so far has always carried well, opening in London in first-class condition, and selling at about the same price as Nonpareil, which I consider as very good for a new apple. "Pennock."—A well-known apple in Pennsylvania and in some parts of New York. A large, strong, healthy tree, good and regular bearer, large, fine-looking fruit, well coloured, cooks well, and requires but little sugar, but cannot be classed as a table apple. Season about with Baldwin, and sells at about the same price in London. "Wagner" has made a good shewing this year, well-coloured clear and bright. "Vin de Menage."—C. F. Eaton, Esq., reports this apple as doing remarkably well—loaded with large, handsome, dark red fruit of good quality.

Charles E. Brown, of Yarmouth, one of the Fruit Committee, in answer to a request to give me what information he had as to the success of new varieties, seedlings, &c., in his county, sends me a list of 122 sorts, most of which have fruited and the rest expected to fruit soon. He says :—

"There is such a difference in the condition between the shore and inland sections that one cannot assert what will hold over the county at large, although with few exceptions all varieties succeed fairly inland. And in naming standard sorts that have done best, I am at a loss how to confine myself to so few as six or eight.

"Keswick Codlin is so enormously productive that it still holds first place in my esteem for usefulness, good for three months. Oldenburg is also hardy, and a wonderful cropper in alternate years, but miserable soft wood, and tears itself all to pieces with the weight of the crop, which also lasts the month only, and is too sour to eat well, but grand for cooking, and saleable. Gravenstein should come next; Ontario, Northern Spy, and Grimes' Golden would be my next choice in order. I have extolled "Ontario" for several years and distributed cions in quantity every spring. You do not mention it in your report on varieties in the "Transactions of the Nova Scotia Fruit Growers' Association for 1888-9." Look at the January number Canadian Horticulturist, 1890, p. 5, "value of varieties." Ontario stands highest in points takes 39 in a possible 40, Spy, King and Gravensteins rank next with 38 points. Mr. Brown goes on to eulogise Grimes Golden and wonders at our lack of appreciation of that variety, thinks it would suit the English market, if introduced.



He then says: failures are numerous, the most utterly worthless variety in this vicinity is R. I. Greening, absolutely barren and 20 years old. Yellow Bellefleur but little better, I had one little miserable diseased fruit in 1889 after twenty years patient waiting. Many kinds go to the bad with the canker. Nonpariel one of the worst. I would not have a Nonpariel tree within five miles of my orchard if I could help it.

Native seedlings continue to supply our markets to a large extent; Andrews Sweet, Gavel and Holly, the last for cooking. Grimes' Golden grafted on Holly was doubled in size as shown at our last exhibition.

Pears do not succeed, neither do Cherries; plums only when grown against a wall with eastern exposure, barren in the open ground. Small fruits are on the increase, strawberries especially. When shipped late to Boston they bring 30 to 40 cts. per quart box. I have got as high as 50 cts. per box."

Mr. Brown also mentions several new sorts not yet fruited. Salome, Shiawasse Beauty, and Princess Louise, the new apple originated by L. Wolverton, of Grimsby, Ontario, Secretary of the Ontario Fruit Growers' Association, with others, which are on trial and will be reported upon when fruited.

This report of Mr. Brown's shows us the necessity of close observation of the qualities of the different varieties in different localities. The kinds best suited for cultivation in this valley may not be suited to the Southern and Eastern Counties, and still other sorts may be required for Colchester and Cumberland to get the best results. These questions can only be satisfactorily answered by actual experiment, carefully conducted, with all the conditions fully noted.

We need annual reports like this one from Yarmouth, from every county in the province to be laid before this Association and published in the Transactions, giving in detail—sort, age of tree, amount and quality of crop, soil and cultivation. We may then be able to compare notes and in a few years intelligently recommend the best varieties for the several localities.

(Sgd.) R. W. STARR, *Chairman.*

MR. T. H. PARKER read the report of the Small Fruit Committee, explaining, however, before reading it, that the report was prepared

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by Mr. Miller, the well known grower of small fruit. The report was in the following terms :—

The culture of small fruit is not carried on to any great extent in this vicinity, and to the west of this place very few are grown, except for the small, local markets. About three-quarters of the entire quantity shipped from this station were grown on my own farm. Quite a number of persons who started in the business have abandoned it, yet there are a few who are succeeding fairly well. Farmers find that the time necessary to keep small fruits properly cultivated and protected from insects cannot be spared from their general farm crops, hence one or the other has to be neglected to their own great loss. The sight of neglected strawberry plots, patches of currants and gooseberries denuded of all their foliage by the currant worm, all point to the conclusion that, as a business, the culture of small fruits is tending in the direction of specialists who make it their sole business, and are equipped with all the appliances for carrying it on successfully.

The past season was specially favourable to the small fruit grower, and when good results were not obtained the preceding winter was probably largely at fault. We began shipping strawberries 12 days earlier than ever before. Our crop was good, and in spite of the abundant supply in the markets, prices were quite satisfactory.

Gooseberries were only a little more than half an ordinary crop, and prices were low both here and in the States. As this berry is chiefly used for canning purposes, we are of the opinion that the market will only take a limited supply.

Currants, unfortunately, come in with Raspberries, and get but little attention while the latter last. Our crop was good and of fine quality. We shall continue to cultivate them in spite of low prices, as we consider them among our best and most healthful fruits, and sooner or later they must be appreciated.

Raspberries and Strawberries are, without doubt, the two popular small fruits in our markets, and the ones in which the grower at present finds the most money. The Cuthbert raspberry leads all kinds I have tried. This season they yielded at the rate of 5,000 quarts per acre and mostly sold for 14c. per quart. This yield I consider exceptionally good. During the fall I made a tour through the New England States. I saw many small fruit men and some of

the largest growers in the Connecticut Valley, but did not find one who claimed to have grown any such crop. From a careful consideration of what I learned on my trip, I am convinced that our valley, in everything that goes to make the culture of small fruits a success, is ahead of any place I saw.

The next in the order of business was the President's Annual Address, which was delivered by DR. CHIPMAN, and received frequent and hearty applause from the audience. It was as follows:—

*Officers and Members of the Fruit Growers' Association :*

Again I have the honor to address you, and the pleasure of welcoming one and all to our 26th Annual Meeting. As we leave the old year behind and cross the threshold of the new, it is necessary that we, as business men, should review the past, take stock of our Association, balance our accounts, elect our officers, and prepare as far as possible for the work of the year which lies before us. Annually we come together from different parts of the province to transact this necessary business of the Association ; but this is not the only nor the highest reason for the assembling of ourselves together year by year. We meet to interchange the greetings of friendship, to encourage one another in the pursuit of knowledge, to devise the best means of applying the wisdom derived from past experience to the solution of those new and difficult problems which nature is continually presenting to those who would learn her secrets, and win success in any department of agriculture, and to obtain from scientists, practical orchardists, and all who have information on the subject, the latest facts which shall aid us in making a success of our particular line of agriculture,—the growing of healthy, vigorous orchards, and the production of perfect fruit. Six and twenty years ago when this association was organized in Halifax, with R. G. Haliburton in the chair, fruit-growing in this province was wholly horticultural in extent. The old French orchards were bearing small, common fruit used for making cider, but the trees were old and neglected, and improved varieties were confined to garden patches of not more than a half acre or an acre, and the apple crop was small and little valued by the farmers in general in those early days. The influence and efforts of this Association during the following years were marked by steady growth and improvement. No opportunity was lost for sending our fruit to exhibitions abroad, and finally a successful shipment of apples

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was made by steamer across the Atlantic, and Nova Scotia apples won a high reputation on the London market. Ever since large shipments have been made annually. Our excellent facilities for shipment, and the good price for a good article in London are what has given the greatest impetus to the growth of fruit in this Valley, as well as its stability. It is only during the last few years that Nova Scotia apples have won their place on the London market, but ever since thousands of trees have been planted annually. Orchards cleared the bounds of horticulture at one leap; garden patches expanded into fields of five, ten, twenty, thirty, and fifty acres of trees, and fruit-growing became a recognized branch of agriculture, and the chief source of income on many a farm. These tens of thousands of young trees are growing, and still the work of planting more trees is going on. Is there danger of over-doing the business? There is room for a word of warning just here. The man who crops more land than he can thoroughly cultivate, is pretty sure to impoverish his land and meet with disappointment in the crop. Young trees need thorough culture as much as any other crop, and the man who plants more trees than he can care for thoroughly is making a mistake. Plant the trees by all means, but give them thorough cultivation. There will be a good market in the world for all the apples we can raise for a generation to come. A Montreal paper states that: "More apples were shipped from America to Europe last year than ever before in a single year, the total being 1,401,382 barrels," and still the price was higher than ever. In 1880 we exported 24,250 barrels; 1886, 121,541, and '89 will not fall far short of '86—probably 120,000. The "crop reports" sent to the Secretary of Agriculture early in the season placed the orchards 25% below the average, but this estimate happily proved erroneous, and when the fruit was gathered, the yield in every instance greatly exceeded the most sanguine expectations, and the crop of '89 surpassed that of any previous year, with the exception of the enormous crop of '86. The past season was remarkable for the mildness of the winter, the very light snowfall, and the unusually early spring. There were warm sunny days during the winter, almost genial enough to deceive the trees into starting their buds into life, and then they would be suddenly snubbed by a sharp frost, but this rough treatment was apparently not at all detrimental to the embryo crops, as the blossoms came in due season, and were followed by the perfect fruit. The only

sleighting during the winter was in February, six days with only sufficient snow to cover the ground. The spring began with March, and steadily advanced without a single break in the equable temperature. Vegetation and the blossoming of trees were a month earlier than usual, and there was no check from frost or drought. Gravensteins and a few Ribstons on the early land in Cornwallis were gathered early in September, and shipped in the *Ulunda*. They arrived in good condition and brought fancy prices. Later shipments of Ribstons, Kings, and Blenheims arrived unsound, and barely paid expenses. Ribstons especially rotted badly, and this is remarkable, as they have always kept perfectly sound until Xmas. Is the cause of the unsoundness last season, of this favorite and highest priced variety in London, known to us? The only reason which occurs to me is that the Ribston ripened so much earlier than usual, that it was gathered too late, and shipped when over-ripe, hence "the little pitted speck in garnered fruit, while slowly widening, ruined all." The Ribston drinks in the sunshine, ripens rapidly in the early autumn and is apt to fall. In an early season like the last, it needs watching, for—

"Lo! sweetened with the summer light,  
The full-juiced apple, waxing over-mellow,  
Drops in a silent autumn night."

There was an enormous crop of Baldwins, and the color and size were superior. A shipment of 25 barrels made by John A. Woodworth of Grand Prè, to Messrs. N. & L., netted \$3.87 and \$4, and one barrel of extras obtained the highest price ever paid for a barrel of Nova Scotia Baldwins—27/. The net price per barrel for the lot was nearly double the figures offered him by speculators. Why, then, do not fruit growers ship their own apples? Shipment is a very simple matter now, and any man who grows a hundred barrels of apples, or even fifty, would put money in his pocket if he would pack his apples carefully, stamp his name on the barrel, warrant them the same top, bottom, and middle, and ship them every year. He would soon establish a reputation for good fruit, honestly packed, which would sell his apples on sight. I do not wish to find fault with speculators. They have paid the people a large amount of money—and pocketed a goodly profit themselves. One speculator bought 50,000 barrels in the Valley; one of his agents paid \$15,000 to the growers from Port Williams to Windsor. Other buyers secured at least 50,000 barrels more, making a total of 100,000 sold to speculators. The profit on

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these apples was not less than fifty cents a barrel, making the neat little sum of \$50,000, which would have gone into the pockets of the fruit growers of this Valley had they shipped their own apples. Occupying the honorable and responsible position of president of this Association, I feel it is my duty to point these facts out plainly to the members, and my duty is only half done, if I do not also call your attention to another subject of vital importance to every fruit grower, viz., the dishonest packing of a few, whose dishonorable actions bring discredit on the whole. The subject has been pretty freely discussed in the press, and this Association has been censured by some (who are not members but ought to be) for taking no steps to check the evil. You will be asked to consider the best means to remedy this evil, and I hope we shall be able to compel every packer to stamp his name on the barrel and become legally responsible for his work inside. I am glad to find Mr. Patterson's name on the programme for a paper on "The Packing and Marketing of Fruit." No doubt he will ably assist us in dealing with this peculiar variety of packing.

Insect Pests were less troublesome last year than usual. Caterpillars can be controlled by destroying their eggs in winter, and hand killing in the spring; and printer's ink and arsenical poisons have deprived the canker worm of all its terrors. There is a trouble, however, which threatens to become serious, the cause of which is yet unknown. I refer to the splitting of bark on the trunks of trees. At our quarterly meeting in Brooklyn, Hants, a number of trees in an orchard were found dead, which were thought to be perfectly sound by the owner. On tapping the bark it was found hollow, and could be pulled off in one mass, leaving the trunk bare and discolored. I have since heard of a number of trees in other orchards, affected in like manner. Prof. Hind was appointed a committee to investigate the disease, and his report will be of great interest to us all. I had the honor of representing this Association on the general committee of the exhibition held in Kentville last autumn by the three counties. In making up the prize list for fruits, we arranged the varieties and the prizes according to commercial value. A new class was formed for nursery stock, and suitable prizes given for root grafts of different ages in order to encourage home-grown stock, and keep some of the money at home which is annually going out of the Province for trees, etc. The sale of trees is now enormous. I would urge our

members to grow their own trees—sow the seeds, graft the roots, and make the tree *home* grown, root and branch. Prof. Saunders says home grown apple trees are as good in every respect as imported, and you need only visit the orchards of John L. Gertridge, R. W. Starr, John Byrnes, Isaac Shaw, to have this proved to your satisfaction. The distinguishing feature of the exhibition was the fruit. Provincial Exhibitions have made a *larger* show; but for size, smoothness, richness of color, and perfection of shape, the apples at Kentville surpassed all previous shows in the Province, and many expressed their opinion that they beat the world. Gravensteins, Ribstons, Kings, Blenheims, Fallawater, Twenty Ounce Pippin and Golden Russet were magnificent. The tables were a thing of beauty and a delight to the thousands of visitors. Windsor is preparing for a joint exhibition next autumn, and I hope this Association will assist as far as possible; for I believe Exhibitions are a great educator of the people. The orchards of this valley are the pride and glory of Nova Scotia, and the apples of these three counties have won a world-wide reputation. No other county in the Province exports any apples, but I feel convinced that were the same knowledge and care and skill given to fruit growing in other parts of the Province, success would be the result. Indeed, Yarmouth, Lunenburg, Antigonish, Pictou and the Island of Cape Breton are already raising considerable fruit for home consumption, and the two governments have taken Colchester and Cumberland under their fostering care, and their capabilities will be thoroughly tested. I have never been reconciled to the location of both the government farms outside of the fruit belt. We, in this valley, naturally felt that we had a claim to the Model Farm after the Federal Government had located the Experimental Farm in Cumberland. It is true the location of the Normal School and the Professor of Agriculture in Truro was a strong argument in favor of Bible Hill, but for first-class farming here is the place. We can grow everything that will grow on the Model Farm, and the finest fruit in the world besides. We need an experimental fruit station in this valley in order that our children may have the advantage of scientific training in that particular branch of industry which will be their magnificent heritage. Can your boys do anything better than stay at home on the farm and start an orchard and build up their own country, while they are making a home and fortune for themselves? There is a treasure hidden among the roots of the

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young apple trees, which careful, patient digging will surely bring to light and transform into golden fruit and sterling cheques. The Dominion Convention of Fruit Growers will be held in Ottawa, February 19th, and following two days. Nova Scotia is allotted two delegates and \$100 to help defray their expenses. This Convention will represent the Dominion from British Columbia to Prince Edward Island. Its deliberations will be important. You will elect two delegates to represent Nova Scotia and the Fruit Growers Association. A kind Providence has showered blessings upon us during the past season, and with thankfulness to the Giver of all good, I close this address.

On motion of Mr. T. H. PARKER it was resolved that the President's Address be adopted and incorporated in the proceedings published in the regular Annual Report.

The CHAIRMAN announced to the meeting that Dr. WOODBURY, of Halifax, had intended reading a paper prepared by himself and entitled "Cranberry Culture," but that owing to a severe attack of la grippe, Dr. Woodbury was unavoidably absent from the meeting. His paper on the subject was accordingly read by the Secretary, and is as follows:—

*Mr. President, Ladies and Gentlemen :*

I come to you a tyro on the subject of which my paper shall treat. A year ago the Secretary of this Association asked me to present a paper on Cranberry Culture, but when I came to look around for what I knew on the subject, a great deal of theory and a little experience was found, and that born of experiment, the results of which were, and are still buried in some very poor black mud between the sand hills of Aylesford. The situation has not materially changed, except that a little more experience has been added. Considering that cranberries now form so small a part of our crops and very little attention having been hitherto paid to the scientific culture of this fruit in Nova Scotia, it may not be amiss to discuss the soil suitable for cranberries, its preparation, planting, and what the prospect may be of the fruit becoming, in some parts of our Province, an important crop for export. I will only give our own method of preparing and planting, and incidently render the reasons.

After deciding to investigate the subject, membership was secured in the American Cranberry Association, which brought to our aid



the thought and experience of the best growers. (The men best in all pursuits are found in associations.)

In the autumn of '87, armed with introductions from the Sec'y., Mr. A. J. Rider, Trenton, N. J., Cape Cod, Mass., was visited, and I obtained the information desired. I must here pay a tribute to the Massachusetts gentlemen whom I met, who so courteously replied to my every question and demonstrated their methods, and who since have taken great pains to reply at length to my somewhat frequent letters.

Our bog is situated between hills of sand. The mud which underlies about a foot of turf is from five to fifteen or twenty feet deep. It is well decayed, and as poor as the most fastidious cranberry vine could demand, but we believe, rich in the qualities that make fine cranberries. It is chiefly the deposit of a whitish moss which upon decomposition becomes black. It is as tasteless and odorless as a wet cotton rag. The richer the soil in the qualities that grow ordinary fruits the less will be the chance for success with the cranberry.

We could only ascertain whether there would be water enough to flood the vines in winter, by building a dam about 750 feet long, which we did, proceeding on the plan usually adopted in Cape Cod. A ditch was dug two feet wide extending the full depth of the mud. Boards were then driven down as far as they would go. Stay boards were nailed to them at the top, and the spaces each side filled with fine sand and packed hard. Two rows of turf are piled up three or four feet high, about twelve feet from outside to outside, and leaving a space of six feet in the middle to be filled with sand. Beside making a substantial dam, it serves as a wagon road across the bog. We found this dam held the water, and that the ordinary rainfall upon the watershed around it was sufficient. The importance of deep large ditches has been impressed upon us by all growers, especially where the mud is deep, in order that the water may quickly drain off in the spring, that the May sun may warm the roots and push along the new growth, in order that seasonable bloom may be produced. I was struck with the clean deep ditches cut through the bogs on the Cape. It is a popular error with us that cranberries will grow well in the water. They will not. I believe some of our growers in the Valley are making a great mistake by keeping their bogs too wet. There are

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bogs near us that in two years have not made as great growth as our vines have in one, simply and solely because they have not been properly drained. The main ditches are placed about 100 feet apart, four feet wide at the top, two feet at the bottom, and three feet deep. Smaller cross-ditches are cut the same distance from each other, deep enough to keep the water a foot or more below the surface of the mud, in the early part of the season.

After ditching came turfing. The turf, which is about a foot thick, was removed on barrows. The mud was then carefully levelled, stumps and roots removed, and all hollow places filled. The value of this is seen in a dry season, when it becomes necessary that the ditches be filled to supply moisture to the roots of the vines, thus assisting the fruit to continue its growth without ripening prematurely.

Sanding comes next. The quality of the sand must be considered. Coarse, clean sand is the best. The coarser the better. We have been able to test the value of coarse sand in comparison with fine. On the south side the sand is fine, on the north side it is coarse. We used the latter except for a few square rods, where we used the fine. The following is the result of our observation :

(a) The coarse sand dries readily on the top in the morning, and becomes hot early in the day.

(b) It allows the free evaporation, which on very warm days prevents the vines from scalding.

(c) It drains more easily after rain.

(d) Hard frosts do not heave it nor disturb the surface in the autumn.

(e) Noxious weeds do not so readily find a congenial home as in fine sand.

It pays well to be careful that no surface soil be mixed with it, for wherever a bit of loam, or vegetable mold from the hill found its way to the bog, there weeds were propagated. We put on four and five inches of sand with trollies, carefully levelling it so that three or four inches of water on any part will cover the whole. We believe we will be more than repaid for extra care in levelling and sanding from the first crop.

The planting is next in order. We have examined nearly all the bogs planted in our Valley, and all we have seen are planted in rows from 15 to 24 inches apart, and the plants are laid along in the row

or planted upright or inclined, four or five inches apart, using plants with more or less root. Many growers follow that plan in New Jersey on sand bottoms known as Savannah lands, where there is not much muck, but in Massachusetts, on the deep muck bogs where (it is claimed) the growth of the vine is more rank, another plan is largely followed. The plants are placed eighteen inches apart each way, regularity being secured by a marker. We used mostly vines without roots, which had been mowed from a *productive* bog that is clear of pests. Four or five spears of about eight inches in length, were pushed with a dibble through the sand, and into the mud about three inches, leaving but a small top above ground. Some roots were planted, but the mowed vine at the end of the season showed as great growth.

The cranberry vine, as it creeps along on the ground, sends down roots every few inches, creating semi-independent plants which form centres of growth the following year. If the vines at the start are planted closely, they climb on each other and form little tents, preventing them from sending down their little rootlets. In a few years these bunches become unproductive, because the vine cannot carry the sap for fifty or sixty inches, without being reinforced from the soil. This is especially the case on deep, damp bogs. We keep the land clear of weeds, and shall continue to do so, believing the cranberry responds to good culture as quickly and generously as any other small fruit. I saw in Massachusetts two bogs of 40 acres each, within two miles of each other, planted the same year, and of equal merit as near as could be ascertained. One in five years ending 1887, had produced 8000 barrels. It is owned by a stock company, and kept like a garden, no grass to be seen. It divided among the shareholders in that time (\$23,000) twenty-three thousand dollars. That is only a net profit of \$2.87½ per barrel. The other had never paid a dividend, and produced in 1887 as its first crop of any account, 1,000 barrels. It looks from the bank like a swamp filled with kill-cow and other weeds, with here and there patches of fairly clean vines. It being picking-time, I saw the berries from both in barrels. One, well-colored and large, the other of several shades, and not nearly so uniform in size. The one had nothing to do but grow and be handsome, the other wasted its energy fighting for an existence. We are going carefully, sparing no pains to have the conditions for good crops right. As far as we know, the results are to

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come. We have but a few acres planted as yet, but enough to demonstrate whether we are on the right track or not.

What we in Nova Scotia may expect per acre, is future experience. From enquiry and correspondence we find the Massachusetts growers think 50 barrels per acre is the average crop in well-kept bogs. We are more subject to late frosts to take the bloom, and early ones to attack the fruit. Aside from this, judging from crops that have been taken from certain bogs in Aylesford, the conditions are equal to theirs. We have both the shallow Savannah lands such as New Jersey berries are largely grown upon, and the deep muck bottoms like Long Island and Cape Cod. It remains to be seen which will do the best here. The former can be prepared for less than one-half the cost of the latter.

In reference to the local market, the crop is yet so small that *we* hardly affect it. Our growers have realized large prices. One of our growers wrote me last year that he realized \$50 for five barrels at the station. That was in April last. They were sold below the market price for Cape Cod berries. Last fall American berries were sold at \$7 or \$7.60 per barrel of 150 quarts, in Halifax. Now they are quoted by importers at \$12 and \$14, which quite stops the consumption of them. About 500 barrels were imported last year to Halifax alone. The American growers get \$5, \$6, and \$7 per barrel of 100 quarts, and sell mostly in the autumn. The middle men get the high prices that rule late in the season.

When the acres that are now planted in Aylesford alone come into bearing, our local market will be supplied to overflow. We must then seek markets abroad. Our secretary, Mr. Starr, tells us that cranberries are safe at \$4 per barrel in England, if they can be grown for that money. We hope for better things than that. Last year thousands of barrels (according to the president's report to the August meeting of the Cranberry Association) were sold as low as \$3 per barrel. This was second class fruit, badly packed. When we export cranberries shall we pack them to compete in the three dollar class in the United States market, and with small Danish and Dutch fruit in the English market, or shall they stand like our apples, first class the world over? A barrel of cranberries has been like a magnet to me, and I have kept my eyes open, and am here compelled to grumble at a large part of the packages I have seen from our provincial growers.

They are not what they should be, largely by the mixture of frozen berries. They are a wet mess. Opened by the side of a good barrel of Cape berries, nearly uniform in size and color, no green ones (they are sold in the early fall by themselves), no frozen ones (they throw these away), packed in a neat whitewood barrel, with flat hoops and a planed head, *our* berries packed in mackerel barrels do not show to advantage. We cannot compete in the markets of the world unless we mean to *sell the best*. Then we need fear no competitors. It is the only fruit that will stand shipment equal to the apple, and when the last apple has disappeared, the luscious cranberry sauce will keep up the tone of the system till summer fruit comes again.

In our province are thousands of acres which, for ordinary culture, are as worthless as a desert. They will yet be seen areas carpeted with deep purple beauty, productive beyond the wildest dream of the orchardist.

On motion of the SECRETARY it was resolved that the article written by Dr. Woodbury be printed in the Annual Report of the proceedings of the Association.

Mr. R. W. STARR remarked that there were some cranberry plantations in or near Berwick, and he had been given to understand that the crop owned by Mr. Shaw at Berwick had been a failure last year, a circumstance which was probably attributable to the late spring frosts. On previous years that particular plantation had proved fairly satisfactory. He believed that Mr. Shaw was of the opinion that we would have to look to London eventually as a market for the cranberry.

The SECRETARY said it was very difficult to get any satisfactory information as to the character and size of the cranberries sent to London from Northern Europe.

Mr. ISAAC SHAW spoke of the practice of flooding the cranberry plantation, and was inclined to think that flooding early in the season was bad.

Dr. REID thought it might be desirable to cultivate the bush or wild cranberry.

BENJAMIN STARRATT said that in regard to this question of the cultivation of cranberries he recently had a conversation with a gentleman from Amherst Island, in the Gulf of St. Lawrence.

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Some years ago he had heard it stated that the finest cranberries in the world grew on this island, and this statement was confirmed by the gentleman he alluded to. In the year 1859 he had visited Cape Cod, and had seen the cranberry patches there, and even at that date they were being cultivated successfully. He thought that the tendency nowadays was to grow the berry without water. Mr. McNeil, of Melvern Square, had stated to him that he could grow them on dry land successfully. With reference to the question of marketing the cranberries in London he had some correspondence on the matter about four years ago, and he had then concluded that in the London market they would realize about four dollars a barrel to the exporter.

The SECRETARY stated that the price obtainable for cranberries sent to London would be about four dollars a barrel. He had sent over a few barrels himself and realized about that price.

The discussion on this question then ceased, and the following question was taken up and debated :—

“What is the cause of the occasional bursting of bark on the trunks of apple trees, and the remedy therefor?”

The CHAIRMAN said that this question was a very important one, and that considerable difficulty was experienced in endeavoring to arrive at a satisfactory solution of the trouble.

MR. B. STARRATT stated in answer to a question of one of the members as to whether this peculiar trouble had been observed at any place west of Windsor, that there was plenty of such trouble in the section where he lived. He knew of two instances which he might mention. In the first instance there was a sandy surface, the soil not being very light, and the other case was in connection with trees situated on the side of a hill. The soil was richer in the one case than in the other, and there were about a dozen trees in each orchard. Both orchards had been cultivated for years, though not highly cultivated, and one orchard had been recently trimmed. The orchard on the hillside, sloping towards the North, had not been trimmed; but the other orchard on the level land had received pretty close trimming within the last two years. Last spring (1889) it was noticed that about a dozen trees in each orchard were dead. These trees were about thirty years old, and up to that time were in good

bearing condition. Another instance was that of a farm which came into his possession, and which up to four years ago had received pretty good cultivation. About four years ago the owner ceased cultivation, and the next spring about one-third of these trees were found dead. He had observed one peculiarity as existing in these cases, and that was, that if any sound bark remained on the trees it was on the north or north-east side.

MR. HARRIS said that he had observed the same peculiarity in two instances, the bark being on the north-east side in both cases.

MR. B. STARRATT said that he could cite a number of instances which occurred about six years ago, where trees had died in the manner referred to, and in these cases it seemed to be the result of excessive trimming and high cultivation. He had scarcely ever observed a poor tree die in this way.

The SECRETARY said that in reference to the point as to the bark bursting on the south side of the tree, his first observations of the peculiarity were similar to those of Mr. Starratt, but on examination of an orchard in Hants County a few days ago, he had found trees with the bark adhering on the south side. Prof. Hind had met with similar experience in his investigation. It was to be regretted that Prof. Hind was not present at this discussion so that the Association could have the benefit of his observations.

E. C. JOHNSON said that he had some trees which were affected in the same way. They were trees that he was grafting. He pruned them very severely, and he noticed that the bark on one side was partially bursting, and on taking it off he found that the inside was discolored. He thought this peculiarity was due to very severe pruning. The trees were Bellefleurs.

MR. T. H. PARKER said that the trouble the Association was now discussing was an enemy in ambush, and a very serious one. Perhaps the most remarkable case was the one in Hants County, which had been already referred to, and which caused the loss of fourteen magnificent trees. These trees were not highly cultivated, and had no appearance of growing rapidly, and had not been pruned.

DR. REID thought the trouble might be properly attributed to the peculiar seasons the country had been subject to in recent years—the soft warm weather causing the sap to rise in the trees more than

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ordinarily. The unusual rising of the sap was a possible explanation of the bursting of the bark. It was significant that trees that were pruned seemed to suffer most from the bursting of the bark, and it must be borne in mind that the pruning started the sap up, and hence the sap accumulated, and the inevitable result would be that when the frost came again the bark would burst. As to the remedy in such a case he really thought it was a mistake to have winters of this kind. (Laughter).

MR. ISAAC SHAW said that he had some experience in regard to this trouble, his first experience being in connection with nursery stock. The trouble took place in stock planted on coarse manure. The inference he drew from his observations was that there was too much sap in the trees. In regard to the orchard referred to by Mr. Parker, he knew that it had been an orchard previously noted for giving good returns. It fell into the hands of a new owner that year, who said that he was going to wake those trees up, and he manured with stable manure. That spring happened to be a dry one, and the trees took to growing, and then the next thing he heard was that everything had "gone up." His conviction was that the trouble was caused by late growing and heavy pruning.

X. Z. CHIPMAN said that he knew of an orchard that for many years had not been pruned, but that on a recent year many of the trees had been pruned very closely, and he had observed that after the next frost the bark on a number of them had burst. He then went to the orchard of a neighbor whose trees had not been pruned, and he had observed that the cracks in the bark were not nearly so bad in that orchard.

G. V. RAND mentioned the case of a very thrifty tree, the bark on which had burst some years ago, which bursting proceeded no doubt from the sap starting, and then a sudden frost coming right afterwards. Trimming a tree too closely would be apt to produce a superabundance of sap, and if a tree were too full of sap the bark would burst.

R. W. STARR said he could not regard any theory on the question as affording a thoroughly satisfactory explanation of the difficulty. He had invariably observed that the most prevalent cases of the bursting of bark occurred on soils that would be the better for draining.



Mr. HARRIS asked if anybody had ever tried grafting on these trees?

Mr. STARRATT said that he had grafted one of such trees, but although the tree is still alive it is by no means a healthy tree.

The CHAIRMAN said that the action of the sap of a tree was in some respects like the circulation of blood in the human system. When a tree is growing the sap has circulation, and in winter the sap is dormant.

Mr. HARRIS asked if bridge-grafting over the trunk would be recommended in cases of bark bursting, or should the trees be cast away altogether.

R. W. STARR stated that his experience in bridge-grafting was that it was simply time thrown away. Many years ago he had tried it and the trees grew well, but in the course of three or four years the girdle would be decayed, so that it proved no support to the tree. The others were simply ropes of sand, and were no support to the tree.

The discussion on this question here ceased.

The PRESIDENT stated that he had received a letter last October, accompanied by two apples, from Dr. Primrose, of Laurencetown. The apples were a hybrid between a Baldwin and Nonpareil.

The next question on the programme for discussion was—"At the present stage in the history of the fruit export trade is it expedient to subsidize one line of steamers?"

The CHAIRMAN said that at the present time the steamers, or their agents, used the fruit exporters just as they pleased, and sometimes the cost of transportation was inordinately high.

Dr. REID said that to discuss the question properly and deal effectually with it, it was necessary to have every fruit grower in the Valley a member of the Fruit Growers' Association.

Mr. DIXON said he was in a position to state the amounts which the various steamship lines charged. Pickford & Black charged from Wolfville to London, \$1.10; Cunard & Co., agents of the Allan Line, charged 98 cents from Wolfville to Liverpool; A. G. Jones & Co., who are agents for the Dominion Line, charged 89 cents from Wolfville to Liverpool. As to the question whether it was expedient

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to subsidize one line he would answer it in the negative. It was far better to have opposition. As a matter of fact London was no dearer port than Liverpool, and if A. G. Jones & Co. would carry apples from Wolfville to Liverpool he could not see any reason why another line would not carry apples at the same rate to London.

MR. GEORGE THOMSON thought that if the Association were to decide to send all their apples together, and make an arrangement with one particular line to carry the whole of them, they would be in a position to get a very much cheaper rate.

The SECRETARY said that if there ever was a time when the principle of subsidizing was a useful one that time had gone by. The Furness line, through having the subsidy, had advantage over other lines, and were in a position to crowd out competing lines whenever they saw fit. Since the subsidy had been given certain gentlemen in Halifax possessing a large London trade had been completely crowded out of the business owing to the fact that the Furness line could defeat any effort they might make to give a low rate in carrying freight. In conversation with an agent of one of these rival lines of steamers recently, he was informed by that gentleman that the subsidy would eventually kill the London trade if the fruit exporters did not take care; and he (the Secretary) in reply had promised that gentleman, who was about starting for London, that if he would use his influence while in London to secure an opposition line to run from Halifax he (the Secretary) would do his best to have the subsidy withdrawn so that competition would be fair and equal. It was to be regretted that no representative of Messrs. Pickford & Black was present, but he had done his best to procure the attendance of one of the firm at this meeting of the Association.

MR. STARRATT said he would gladly co-operate in the endeavor to lessen the freight on apples, as he was by no means satisfied with the treatment received from the present subsidized line. (Applause).

DR. REID said that the steamers did not take the most ordinary precautions to preserve a proper temperature in carrying the apples across the ocean. With proper apparatus a continuous current of cool air might be maintained, but under the present want of system in regard to this matter many apples are lost through being overheated.

The Association here adjourned to resume at 7 P.M.

## EVENING SESSION.

R. W. STARR moved the following resolution, which was seconded by A. McN. Patterson :

*Resolved*, That in the opinion of this Association the government subsidy to only one line of steamers is very prejudicial to the best interests of exporters of apples."

J. E. STARR asked if it were not possible that the increased rate charged by the steamers for apples was owing entirely to increased business and general increase in rates for freight.

A. McN. PATTERSON said that the subsidy did not fix a rate, and the withdrawal of the subsidy would again start competition.

The resolution was then put and carried unanimously.

The next question discussed was as follows:—"Do the bills of lading in general use by steamship companies afford a fair share of protection to shippers of fruit?"

The SECRETARY stated that he had had some correspondence on this subject, and would submit it to the views of the Association. He placed on the desk three bills of lading. One of these was called in London the American or "Yankee" bill of lading. Under the "Yankee" bill of lading the freight was payable "*ship lost or not lost.*" A further objection to this form of bill of lading was that by it there was a tax of one shilling and sixpence per ton on the apples being delivered in the docks. The joint bill of lading of the W. & A. Railway and Furness line is on the whole more favorable than the others, but none of them gave any security whatever, and were scarcely worth more to the exporter than a mere receipt. In the "Ulunda," on a trip last autumn, out of 308 barrels there were over 100 barrels damaged and broken open. Our London agents made a claim for that damage, and the reply was as follows:—

LONDON, 34 Leadenhall St., E. C., Dec. 4th, 1889.

MESSRS. NOTHARD & LOWE,  
43 Tooley Street.

*Dear Sirs*,—Yours of 30th ult. is to hand. We have carefully reconsidered the matter you put before us, and after investigation cannot trace any negligence whatever on the part of the steamer, and although we are most anxious to do all we consistently can for your apple shippers, we cannot

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in this case see any ground for complaint against the steamer, or can we admit any liability for the alleged loss.

Yours very truly,

THOS. RONALDSON & Co.,

*Per W. H. F.*

The fact of the matter was that the bill of lading now in use is so one-sided as to afford no redress to the exporter in the event of damage occurring on the voyage.

MR. DIXON said that the only remedy was "competition," which might enable the Association to have the objectionable clause on the bill of lading expunged.

The Association adjourned to meet again at ten o'clock to-morrow morning.

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#### MORNING SESSION.

The Association met this morning at half-past ten o'clock, and elected the following officers for the ensuing year:—

*(See Pages 3 and 4.)*

The CHAIRMAN referred to the fact that Prof. Lawson had intended reading an essay before the Association at this session, but owing to the sad bereavement he had just met with in the death of his wife Dr. Lawson was unable to be present.

The SECRETARY submitted the following telegram, which, on motion of DR. REID was sent to Prof. Lawson,—

"The Fruit Growers' Association regret your absence and deeply sympathize with you in your great affliction."

The election of two delegates to the Dominion Convention of Fruit Growers to be held at Ottawa during the month of February, was now proceeded with, and resulted in the selection of the Secretary, C. R. H. Starr, and Benjamin Starratt of Paradise.

On motion of PROF. SMITH it was unanimously resolved that any further expense incurred by the two delegates over the amount appropriated by the Dominion Government be defrayed out of the funds of the Association.

MR. T. H. PARKER gave notice that at the next meeting of the Association he would move to amend section 7 of the Constitution in

regard to fee for life-membership, by reducing the amount from twenty dollars to five dollars.

On motion of MR. STARRATT it was resolved that all members of the Association attending the Dominion Convention be accorded all privileges as accredited members of the Nova Scotia Association.

The Association adjourned to meet again at two o'clock in the afternoon.

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#### AFTERNOON SESSION.

The question first taken up for discussion was, "Is it advisable to recommend the re-imposition of a duty on fruit imported into the Dominion."

DR. REID moved that it was the opinion of the Association that it was not advisable to recommend the re-imposition of such a duty. This motion was supported by T. H. Parker and Dr. Young, and passed unanimously.

DR. REID was called upon by the CHAIRMAN to read his paper entitled, "The relative value of Fertilizers." Dr. Reid on coming forward to address the meeting said :

I did not prepare any paper on this question owing to press of other work, but I will endeavor to give the Association my views on the subject in the few observations I will now make. Members of the Association have probably all noticed the peculiar fascination which surrounds the observation of any acts of nature. We know what an amount of industry and labor has been expended in studying up life histories and the freaks of the little world around us, and many active minds have been lately studying the infinitely small things in nature. But those who have in a special manner devoted themselves to such studies, are not men who are thrown by virtue of their daily pursuits into association with the works of nature, but men who attain their knowledge from pure and enthusiastic love of science and inquiry, and yet when we regard the very men whose daily work brings them into direct contact with nature and its wonderful works, —the agriculturists,—we do not find them enthusiastic or thoroughly intelligent in this respect. Why not? The orchardist plants a small seed ; a tree grows up, and from that tree is produced a fruit of a certain variety, and thousands of their kind are eventually produced.

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Let us just merely think over the wonderful changes that take place during the progress of that little seed until it accomplishes the end for which it was planted. How few among these men who see the seed-planting and the tree-growing constantly going on, have any idea of the various changes that occur in the interim between the one period and the other. Take for example the case of a potato; which has such wonderful possibilities in the nutrition of the human family. How many men continually associated with the cultivation of that vegetable have any intelligent knowledge of what might be called its inner history. We know that a potato lives a certain life, is subject to certain diseases, and dies. There is no doubt that a great deal of the loss which every country sustains in the cultivation of the potato plant is properly attributable to a want of knowledge concerning that plant. Again take the case of a grain of oats that is put into the ground. It must have heat, air, and moisture in order to have growth, and any one of these being excluded the growth is arrested. If you have moisture and heat and no air, or if you have air and moisture present but too low a temperature, life is arrested. Hence we find the utility of the application of such principles in connection with the stowage system, by which we can send fruit from here to London at a safely regulated temperature. Again there is the plan of preserving food by taking away moisture. The three things I have mentioned will produce budding, but you want nutrition. The seed planted in well-tilled ground gets the three essentials I have referred to, and it gets the other necessity for growth, nutrition. We put the little seed into the ground, and we find it grow into a large plant eventually. From what did it grow? Apparently from nothing? No,—not from nothing. The prolonged investigations and efforts of the chemists of the Old World enabled them to discover that the ground furnishes certain elements that are necessary for its growth,—namely, phosphate of lime, potash and ammonia. Very few appreciate the wonderful part played by phosphate of lime in nature. It is present in the bones of a man, it is present in his blood, it is present even in his tears. If you go from animate nature to inanimate life you will find phosphate of lime in oats and straw and anything that grows. Burn a bone and you will get bone ash, and that is phosphate of lime. The phosphoric acid is united in three forms. If you take away by chemical means one portion you have a more soluble phosphate called superphosphate. We require potash, and that is present

in all animal tissue. Before that little oat plant would grow, it must have phosphate of lime and a certain proportion of potash. Nothing will do instead of these two things. If there is phosphate of lime in the soil, the plant has the peculiar property of dissociating it and taking advantage of it. But as a man does not want too much plum-pudding for his dinner, so a plant does not want too much phosphate of lime. Where does the plant get its phosphate of lime? We find it in the ordinary rock, and also in very small proportions in the granite rock. Potash is also present in small proportions, though the proportion is sufficiently large. In the ages long gone by we had an accumulation of vegetable richness, from the fact that the vegetables picked up the soluble material, brought it out, utilized it, and thus produced a richness in the soil and on its surface. So long as Nature alone had charge of these things the soil did not deteriorate, but rather improved. But when man came along he proceeded to reverse these things. Whether it is cheese or vegetables that a man raises, or whatever it is, a certain amount of phosphate of lime goes away from the soil never to return. Where is the grave of all these things thus sent away. Practically their grave is in the ocean. He sends shipments to London, and the phosphate of lime taken from the soil in this Valley often finds its way to London, and out of the London sewers into the ocean. We are shipping valuable portions of our soil away, and it is only a question of time before we will begin to feel the effects of it. We have a very large bank account, so to speak, as regards rich soil, but if we take up the agricultural history of the Eastern States we will see how clearly those states have suffered from the same cause. The farms are "run out," just because although the land was at one time good, they shipped away their grain, and continued working the land without putting back into it the richness they had taken away. All you need do is to restore your soil, and you will have it the same as before. The farmers in every section of the country should try if possible to return to the soil the articles which they send away. They send away the manufactured product in the shape of animal and vegetable. All they have to do to keep up the fertility of their soil, is to return the phosphate of lime that was taken away.

How are we going to get phosphate of lime. Canada seems to be exceptionally favored in having a large proportion of phosphate of lime within its territory. I have not been able to ascertain how valuable it is, unless it be chemically manipulated to render it

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soluble. If we save the ashes of the wood we burn and utilize it, we leave the soil in as good condition as before. The Dominion Government export potash, and the farmers of the United States take it. I do not think the ordinary farmer realizes the amount of value there is in that article we call ashes. With regard to nitrogen the atmosphere is full of it, but we cannot utilize it, except to a certain extent. Every thunder-storm converts a certain portion of that nitrogen into ammonia. Hence nitrogen being absolutely necessary for the growth of every plant, we have it brought to us from an unseen source. Yet a sufficiency is not brought, and we have to add to that. A great many of the advanced agriculturists import cotton-seed oil which contains a very large proportion of nitrogen. You know how valuable manure is when the animals are fed on linseed meal. I don't know whether you have noticed that bones are scattered around this country very freely, but it is an agent that it is hard to make use of. If you send to town or to any of the agricultural fertilizing companies, they will sell you bone at a pretty fair figure. I have often heard farmers say that they could not see how by paying forty dollars for bone they got forty dollars back. But we must bear in mind that by utilizing bone we do more than that. Bone is composed of about one-half its weight in water, and one-half a nitrogenous article. This is the most valuable article in the nutrition of a plant. The article is so valuable that the world has been searched for guano,—containing largely nitrogen with a certain proportion of phosphate of lime. We know that the nitre beds of Chili are most valuable, and we have all heard of the Nitrate King who lately made such a flourish with his vast fortunes in England. That article is used altogether for agricultural purposes.

But to return again to our bone, it must be remembered that we want the whole of the bone, and do not want the nitrogeous portion removed. I can sympathise very much with the men who boil the bones before they crush them,—but the agriculturist should not want it boiled. He wants the bone brought into a condition into which it can be utilized by the soil. The natural bone has this advantage over phosphate of lime,—that it is not soluble in water. We want something that will not wash away, and the bone furnishes us with that something. It is also taken up more readily by the plant. The cost of phosphate of lime is very great, but bone is not so expensive. Being interested in the question I went to a bone man, and he agreed



to let me have it for \$35 and \$30 a ton. I got a lot of it. Lately I find that I am obliged to pay \$40 for superphosphate. The best superphosphate contains twenty-five per cent. of bone. Forty dollars a ton is rather a high figure for twenty-five per cent. of bone, and ordinary mortals cannot afford to pay that amount. I then went around to a bone man to find out what bones were worth. He said, "I cannot sell you any now. I have entered into a contract, so that all the bones I can raise are furnished to a concern, and I cannot give you any now." He also said,—“After a year I think I can let you have a ton for sixteen dollars.” He was getting \$16 a ton for bone, and our farmers have to pay \$40 a ton for *bone dust*. Thus \$25 is paid for crushing the bone. The next question to decide is,—“How are you going to get your bones crushed?” I happened to have the power and I could get a machine which would cost me something like \$200 or \$300. I calculated that in two or three years that machine would pay for itself. I concluded that the best plan would be to buy bones and crush them, and I accordingly did so. After doing that I thought it might be well to talk the matter over with a number of gentlemen who are deeply interested in this question—for the orchardist is fully as interested as any agriculturist can be. I may state that I took Mr. Starr through a little orchard of mine where previously a number of Rhode Island Greenings had been badly spotted, and we found that I got first-class apples, and scarcely a spot on the Rhode Island Greenings. If I have \$40 to pay for bone I would like to get \$40 worth, and I don't want to pay \$40 for the quarter of it in value. If you want to get all the use you can out of it the first year, by all means get super-phosphate; but if you put a fair quantity of bone into the soil it cannot be washed away, and the benefit will be permanent. If you use very finely comminuted bone, you get more use out of it for the time being, but if you use coarse and fine mixed together, you get an article that will do for the present, and will also give you that substance for ten years.

There is another point which I may mention. The agricultural chemist is a very valuable individual. You send him soil, and he will tell you what that soil contains, and by knowing what it contains you know what it lacks and what to add. But no chemist can tell exactly what form of phosphorus is best calculated to be taken up. He cannot tell the practical farmer exactly what he wants to put into

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that soil to give him what is necessary. Now, I thought I would suggest a plan that would enable every farmer to be a thorough agricultural chemist. You can get no two plants in exactly the same condition. Hence the farmer is working in the dark. He knows what he would like to have, but he does not know how to get it. You want to know for instance what certain land lacks for raising oats. You take a certain amount, and you weigh out a certain quantity of superphosphate, and you put that in one portion of an acre, and you get ashes, and you put that in another portion, and then you may take another portion, say one-fortieth of an acre, and you add barn-yard manure; then take another one-fortieth and put in so much potash and ammonia, and so much phosphate. You give them exactly the same treatment, and at the end of the year you will find which is the best. You will find that two of them do very well, and you will find also that the soil could have done as well without others. No farmer should allow a year to pass over his head without having a plot for testing purposes, and in order to ascertain how far to go in the purchasing of super-phosphate, or phosphate, or any of the other ingredients that are used. The question arises: How is the farmer to get this phosphate of lime? We have a large amount of it that can be utilized. If all the bones in Windsor or Wolfville were gathered together and utilized, it would represent a large amount of phosphate of lime. Their value now in Halifax would only be fifty cents for every one hundred pounds, and the dealers charge seventy-five or eighty cents in selling them. I do not see why the farmers in the various localities do not get their heads together and arrange to have a mill to crush bones just as they have a mill to thrash their grain. They could easily furnish themselves with all the things that were needed, and would get what they want at cost price. A waste product can be utilized and at cost. As regards my own apparatus, I calculate to be entirely repaid of my expenditure in half a dozen years. Three hundred dollars, or four hundred dollars, would buy a capable machine, which could be centrally located, and by some ordinary toll principle the operations could be satisfactorily conducted, and each man could thus enrich his soil. At present people do not properly appreciate the value and feasibility of such a scheme. I must close my remarks now as the hour is getting late, but I shall be glad to answer any questions which gentlemen in the audience may wish to ask me. Before closing

I must not forget to state that there is a form of nitrogeous manure that is not properly utilized. We pay an immense sum for guano, which is the exuvia of sea fowls and exceedingly rich. But all fowls produce valuable exuvia. Chickens are most valuable agents in assisting in furnishing a nitrogeous manure worth about seventeen cents a pound. The exuvia of the sheep is very rich, and so also is that of the pig. That of the pig is less valuable than that of the sheep, but more valuable than that of horned stock. Of course, as regards any animal, the articles of diet it has are in some degree the measure of the value of its waste product.

MR. T. H. PARKER referred to the address of Dr. Reid in highly complimentary terms, and moved a vote of thanks to the gentleman for his valuable and interesting address. The motion was seconded by Mr. Starratt, and passed unanimously and with applause.

The CHAIRMAN asked Dr. Reid if in crushing bone in the bone mill he simply took the crude bones and crushed them?

DR. REID—Yes. The bone not being boiled or cooked is still tough, and it is difficult to make it fine. If I was only the tenant of a farm I would not use bone, but would take superphosphate.

R. W. STARR asked if the whole product could not be utilized, and yet the article be boiled or steamed?

DR. REID said that in the first place there was an objection to that course on account of the trouble and expense of steaming, and then there would be a liquid product which was not wanted. The second objection he had was that he did not think a steamed bone was as good an article as the other, as in his opinion the plants could not make the same use of it. A plant picks it up in a better form than if it were boiled.

MR. STARRATT—Can bone be applied to grass land with advantage, and if so how much to the acre?

DR. REID—It can be applied to grass land, but as to quantity I am not in a position to say. I would suggest that Mr. Starratt put a certain quantity on a portion of his land, and then a double quantity on another portion, and thus find out the proper quantity necessary.

MR. G. THOMSON asked if the bones cannot be made valuable by mixing them with potash water and earth, making a compost of them?

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DR. REID said he did not see why it could not be used in that way. A very little potash will very soon render bones comminuted. I have heard it said that it makes a very good manure.

PROF. SMITH—It would be well to inquire what is this nitro-  
geneous article referred to by Dr. Reid. It is a source of glue, and  
we may say that glue constitutes the nitrogeneous article. Now glue  
is insoluble. Plants cannot make use of it, and in the form of glue  
it is practically worthless. It is possible that a later generation might  
reap benefit from it, but it is very doubtful whether the original  
farmer would get very much benefit from the glue which he puts on  
the soil. It is a substance which decomposes very slowly, so that as  
far as that element is concerned in the question between burnt and  
unburnt bones it is of small consequence. Again, in regard to their  
relative value, I may say that the experience of Dr. Reid differs a  
little from the experience of other experimenters in this respect—that  
in the experience of others bones that have been dissolved and con-  
verted into superphosphate have been found to give much better  
results when applied that way, even for a long period, than the mere  
ground bones. For instance, the best records we have in this respect  
are experiments performed in England, and these experiments seem  
to indicate that superphosphates have maintained the fertility of the  
soil much better than the mere ground bone, and the reason is that  
the phosphoric acid has been dissolved so that the plant could make  
use of it more readily. Phosphate is a material not easily washed  
away from the soil.

MR. T. H. PARKER said that the ordinary farmer wishing ready  
returns should apply the superphosphate, but that those who had  
capital should apply the ground bone. He had recently had a con-  
versation with one of the most intelligent farmers in Colchester  
County who had a large farm, and who calculated to cover his entire  
farm with a heavy coating of ground bone once in three or four  
years. That farmer felt dissatisfied with the application of ground  
bone, and he (Mr. Parker) had asked him how he had applied it.  
He said in reply that he had been applying it coarse. He (Mr.  
Parker) had then told him that he should either grind it fine, or  
if he was dissatisfied with that he should try both the superphosphate  
and the fine and coarse side by side. The action of the superphos-  
phate is very quick; the fine ground bone comes next, and the coarse

very slow. It is a common practice in some parts of Annapolis to pack bones in ashes, just moistening them.

The discussion was continued at some further length.

MR. R. W. STARR moved the following resolution :

“Resolved, That in the opinion of this Association a government subsidy to only one line of freight steamers to London is prejudicial to the best interests of the shippers of apples to Britain.”

MR. B. STARRATT said that at one time we had two lines of steamers to London, and freights were as low as 70 or 75 cents. But the subsidized Furness line drove the Anchor line out of the competition. Freights went up above one dollar per barrel, and have not since been below that figure.

MR. JOHN STARR thought that the general rise in freights might to some extent account for the increase in steamer rates.

The resolution moved by R. W. Starr was put and carried after some further discussion.

The SECRETARY then read the following question for discussion :—  
“Do the bills of lading in general use by steamship companies afford a fair share of protection to shippers of fruit?”

He presented three bills of lading—one of the Dominion line, one of the Furness line, and the third a combined bill of the Windsor and Annapolis Railway and the Furness line. The two most objectionable clauses were, one binding the shipper to pay freight whether the cargo were lost or not; the other binding the shipper to pay a certain amount of expenses of discharging. Mr. Starr also stated that efforts had been made to compel the companies to pay damages for broken barrels, but after getting advice from a high legal authority these efforts were abandoned, there being no hope of compensation. At present there was really nothing but a receipt given the shipper. The company might only land a few staves and hoops in place of a barrel of apples and the shipper had no redress.

Several members of the Association spoke concurring in the view of the Secretary, that the bills of lading at present in use were unsatisfactory, and did not afford a proper protection to shippers of fruit.

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A. McN. PATTERSON, Esq., was called upon by the Chairman to read his paper, entitled, "The Packing and Marketing of Fruit."

(NOTE.—We regret this valuable paper containing many important suggestions was not supplied for publication. The following are a few notes of the discussion that followed the reading of Mr. Patterson's paper.—*Sec'y.*)

MR. G. V. RAND said that one of the great difficulties was that the mischief was frequently done after the apples had been packed. In the packing of the apples uniformity and satisfaction would never be secured unless experts packed all the apples.

The CHAIRMAN said that every packer should be compelled to put his name on each barrel, and thus become responsible for its proper packing.

R. W. STARR considered that the best method as to the inspection of apples was to make every grower of apples his own inspector, and compel him to put his own name on the barrels, but even in such a case the dishonesty of the middleman could not be prevented or punished. He had suffered himself from the fact that apples which had been honestly packed by him had had the distinctive marks of quality erased by speculators who had purchased the apples at auction. To prevent such tricks the name of the packer should be branded on the head in such a way that it could not be erased.

ALFRED WHITMAN said that in reference to the remarks of Mr. Patterson with regard to the fruit salesmen in London, it was only fair to say that there were exceptions to the class referred to by Mr. Patterson. The honest packers of this Valley had to suffer because of dishonest packers, and in like manner the honest brokers in England were obliged to suffer because of dishonest brokers. He believed that his brokers, Messrs. Nothard & Lowe, dealt fairly and honestly with him. In regard to the question of dishonest packing he thought that there was no remedy unless by the appointment of inspectors, who should be subject to penalties if they violated their duty.

J. E. STARR did not think that any new legislation would have any material effect on this difficulty. He believed that the matter rested as much with the purchaser as with the producer. Purchasers wanted to get number one apples for a number two price. The fact

that the producers name was not on a barrel should be regarded as an intimation to all intending purchasers that the fruit was not first-class.

The CHAIRMAN said that the sins of the grocer or dealer could not excuse the dishonesty of the packer. Every fruit grower and packer knew the difference between No. 1 apples and No. 2 apples, and it was the packer and exporter that should be dealt with by the Association.

After some further discussion A. MCN. PATTERSON moved the following resolution, which passed unanimously :—

“*Resolved*, That in the opinion of this Association the law should compel every grower or packer of fruit to put his name and the quality of the fruit on the barrel, and be subject to a fine if the fruit is not according to the marking.”

PROF. SMITH gave an interesting address relating his experience in fruit raising on the Experimental Farm at Truro. He said apples will grow in the Kings and Annapolis Valley whether we want them to do so or not. He had been repeatedly assured that fruit will not grow in Cumberland, Colchester, Antigonish and the Counties of the Island of Cape Breton ; but he had asked men in those counties if they could not grow small fruit, and the reply was, “Oh ! no ; we have to depend upon the wild strawberries.” Another, while farming an orchard which had lived 50 years in spite of neglect, assured him apples could not be grown in that district. Yet he had been surprised to see the fine exhibits at some of the autumn exhibitions. Much of the fruit had been grown on hillsides, in neglected orchards, and in places exposed to bleak winds. If such fruit can be grown under these conditions, what must be the result of proper care and cultivation ? Prof. Smith gave a detailed account of the number of trees and plants put out on the farm and the expense of planting and caring for them. He had found the best results from farm yard manure, and considered the best time to haul it on the land was as soon as it was made.

This address was followed by some discussion in regard to the location of the Provincial Experimental Farm.

The meeting then adjourned to meet at the American House at 7.30.

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## ANNUAL DINNER.

ABOUT forty ladies and gentlemen gathered in the dining room, and after due attention had been given to the bounteous spread, the PRESIDENT called the company to order, and remarked that in former times on such occasions it was customary to pass around something to sharpen the wits, with the result of giving only stupidity. To-night he hoped we had reason and eloquence enough to make this reunion profitable and entertaining without any such stimulants.

The one toast this evening was to the Queen, which was heartily drunk in cold water, the company singing the National Anthem.

The PRESIDENT then called for the following paper by Mr. S. C. PARKER. Owing to the unavoidable absence of Mr. Parker his paper was read by E. A. Read :

## SHALL THE BOY LEAVE THE FARM?

*Mr. Chairman, Ladies and Gentlemen—*

Among the questions of the day that are commanding the attention of statesmen and political economists in the New England States and the Maritime Provinces of our own Dominion, few are of more interest, none are more difficult of solution, than the problem of how to overcome the obvious tendency of the rural districts towards the cities and city life. Across the border scarcely a newspaper but contains more or less reference to the deserted farms of New England, and the statesmen are studying, and the editorial mind is racked, to make suggestions and provide schemes for repopulating the deserted districts, and stemming the steady tide that is draining the best blood of rural New England and flooding the factories, the counting rooms, and every department of city labor with the hardy country life.

In our own Province we find the same problem confronting us ; on the mountains and in the less favored districts the young people are leaving *en masse*, families are broken up, farms are deserted, and it only remains for the old to die, and certain parts of the Provinces will assume the condition of the primeval forest. Even in this beautiful valley, the garden of our great Dominion, a land that for productiveness, climate and beauty, will compare favorably with any under the sun, you will find the tendency of the young men, and



young women too, is away from the rural districts and towards the cities and city life. I appeal to the audience before me for proof of this assertion. How many of your homes, how many of your neighbors' homes, but to-night are represented in Boston, that magic name, the goal to which the youth of this land look forward; that name which to the Nova Scotia boy covers the continent from Cape Cod to San Francisco.

I look back scarcely ten years for the class of thirty or forty boys and girls with whom I associated in the village school, only a scant half dozen can be counted in the Valley. The rest, where are they? Scattered from the billowy Atlantic to the broad Pacific; from frozen Alaska on the North to that gigantic young Republic beyond the equator; in business life in San Francisco, confidential clerks in Boston, in whaling steamers in the Arctic Ocean, in trading ships in the Atlantic; orange growing in Florida, ranching in Montana; in commercial life in New York, mining in Colorado; teachers, doctors, missionaries, mechanics, and this is but a tithe of the hundreds, aye, of the thousands, who have gone from their homes in this country to fight the battle of life in a strange land. An army of young men and women trained to labor, with habits of industry and perseverance, and filled with a resistless energy, that exerted in this country would cause such a glow of activity in arts, in science, in manufactures, and in social life, as would make Nova Scotia, aye, this great Dominion, throb with an energy and vigor to which she has long been unaccustomed; an army of young men and women, all successful, all prosperous, but lost to Nova Scotia, and expatriated from their Nova Scotia homes.

Is it any wonder, Mr. Chairman, we complain of hard times with this terrible drain upon the resources of our country. Why should our young people leave a land where with moderate labor they can live in comfort, even in luxury, and plunge into the vortex of city life?

There must be a cause for this tendency, and where shall we look for a solution of the problem? The question is discussed frequently in the agricultural papers, you have read and reread all the standard arguments—of the dearth of newspapers in the farmer's home, of the hardness of the farmer's heart; how he from time to time gives his boy a calf to nurture and care for, and how in course of time it becomes father's cow. This is all bosh, Mr. Chairman, as a farmer's

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boy born and bred, and spending twenty years on the farm, I deny the charge. Farmers do not do business that way. Only a few weeks since I heard a thorough-going old granger with a barn full of stock complaining that his twelve year-old son owned more of the stock than he did, and he concluded he would have to retire from business or buy the boy out. No, no, gentlemen, we must look elsewhere for a remedy, and where shall it be? The Liberal politician exclaims immediately: "The high tariff, that monstrous National Policy is driving our young people from us." Attorney-General Longley cries: "Confederation is the cause of this; give us repeal, that is the cure-all for the dread disease." Erastus Wiman, in long speeches and longer letters, teaches commercial union and breaking down the high tariff wall. Jeffrey McColl would fly with us into Annexation, and swallowed up in our gigantic neighbor find peace from all our troubles. The minor lights cry Reciprocity and a Liberal Government at Ottawa is all we need to make our country prosperous. Our Liberal Conservative friends are also ready with a sovereign remedy. They are crying: "It is our Local Grit Government that is demoralizing this once prosperous country. The Fielding-Longley combination is crushing us and driving out honest industry. It is the cause of the exodus; give us the reins of power and we will cause factories to spring into existence, and this country to bud and blossom, and the rose to bloom."

We are a nation of grumblers, and would find fault with our manifest destiny; but for my own part I am inclined to think neither a Liberal Government at Ottawa nor a Tory Government at Halifax, a sure cure for all our ills. We must look elsewhere for the remedy, and I may be allowed to look at some reasons from the stand point of the young man.

1st. *Our young people are educated to turn from the farm and rural life.* The child in early life enters the public school, he receives elementary instruction and is passed into the high school, here he is under tuition of a dapper, smooth-handed, polished young gentleman, usually a student of law, medicine, or theology, who takes this method of earning a few dollars to further pursue his studies. Here the boy is taught the higher mathematics, with a smattering of Greek and Latin to prepare him for matriculation into Acadia or some other University. He gets no botany, chemistry is neglected, mineralogy

and entomology are not called for, because they are not on the syllabus. He passes a successful examination, and during his college course the same line of study is pursued, and at the end of four years the young man goes out into the world with all the knowledge gained till this time, of use to him only in professional life. By his very training he is shut out from farm life, from agricultural professorships, from professional farm management, from entomology, from chemistry, from veterinary surgery, from the botanical and geological surveys, and the hundred and one lucrative professions arising from and connected with agricultural life. He is apt to hear farm life spoken of as drudgery, and closes his eyes to the beauty and healthfulness of an out-door life among fruit, flowers and stock. His course is confined, the pulpit, the bar, or the medicine chest, are his only recourse. Let our youth from early years be under the influence and practical training of teachers who will instruct them in matters that will be of use to them in farm life. Fill the syllabus of our common schools with chemistry, entomology, botany, and kindred subjects. Give him a thorough educational course, but under instructors who will develop an "all-round" man. Endow a chair of agriculture in grand old Acadia; give us a model and experimental farm on her spacious grounds. In place of Virgil and Memorabilia a course of Agricultural Chemistry and Botany. Cut short the Calculus, and insert a course in stock growing and scientific orcharding, and in future years from the score of young men who are annually turned from the classic halls yonder we will develop an educated yeomanry.

"A yeoman who will be equal to his home  
Set in the fair green valleys purple walled,  
A man to match his mountains, not to creep  
Dwarfed and abased below them."

2nd. *To populate the country we must cultivate a healthy mental and social life.* Innocent pleasures must be provided. The youth long for the concert and lecture room. The day has gone by when it is considered that toil from sunrise till dark is the sole duty of man. In other business the hours of labor are shortened, why not in ours? If these longings after social and intellectual life are not gratified at home the boy will wander away to the city and its pleasures.

3rd. *Love of the aesthetic and beautiful must be encouraged.* As we pass through the country we find too many farm buildings in a

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shabby and dilapidated condition ; too many homes where beauty and home life are sacrificed to utility ; too many homesteads

“ Where no flower

Told that spring had come but evil weeds,  
 Night shade and rough leaved burdock in the place  
 Of the sweet doorway greeting of the rose  
 And honeysuckle ; where the house walls seemed  
 Blistering in sun, without a tree or vine  
 To cast the tremulous shadows of its leaves  
 Across the curtainless windows, from whose panes  
 Fluttered the signal rays of shiftlessness.  
 Not such should be the homestead of a land  
 Where who so wisely wills and acts may dwell  
 As king and law-giver in broad aced state,  
 With beauty, art, taste, culture, books, to make  
 His hour of leisure richer than a life  
 Of four score to the barons of old time.”

Again. *The young man of to-day is ambitious of wealth and distinction*, and it seems at first glance as if there were more openings in professional and mercantile life than in farming. Judging from the past we cannot expect to win fame or fortune on the farm, and of those who leave for other lands the tale comes back of this one and of that who has accumulated fortune. He hears not of the hardships undergone, of the terrible grinding, striving competition in every department of life ; he hears not of the thousands who fail in the strife and sink into oblivion, but the fittest survive, and their name is heralded throughout the land. In the accumulation of wealth the way is very slow ; dollars in a small business accumulate but slowly, and the farmer often sees himself being out-stripped by his professional and mercantile neighbors. But when we look beyond the outside and compare the steady substantial progress of a hundred solid farmers with an equal number in other business, the scale will often turn in our favor.

In orcharding, our own particular business, you have only to turn up the pages of our reports, and in the estimates of commercial orcharding by J. W. Bigelow and others, we will see opportunities for investment equal to a gold mine. Perhaps the young man who discusses this question is ambitious of distinction in political life. When he stops to count the doctors and lawyers in our legislatures will he not think the quickest way to place and position will be to

drop the plow and take to the office? When the old Roman nation wanted a leader for an emergency, a deputation of senators was sent to look for Cincinnatus. The grand old Roman was found laboring in the field, dressed in his tunic, with hands soiled by honest labor. He repaired immediately to his house, donned his toga, placed himself at the head of the army, approached the enemy, won a great victory, and immediately retired again to his simple pastoral life. In these more enlightened days when there is a vacancy in the legislature, the legal fraternity of Halifax is called upon to fill all openings. Let a young man, Mr. Chairman, even aspire to the presidency of this Association, will he not, judging from the past, deem it prudent to become a Rev. or acquire a medical diploma rather than look forward to the chair from the ranks of the farmers?

Is there no remedy for this state of affairs? Is the term "only a farmer" always to be applied to us? By no means my friends. Let us progress; get the hayseed out of our hair; be in the van in every good word and work; lay aside the barn yard and its accompaniments with our overalls and long boots; qualify ourselves for positions of trust and emolument; read not only in the line of our professions, but on general subjects. Lay aside our petty jealousies, be wise as serpents and harmless as doves; combine to help one another, and in this a farming country literally occupy the land. Let us not be too confident. It is worse than folly to sail under false colors, and strive to make the young believe this is an El Dorado. We have a beautiful country, there are others just as beautiful. From some reports one might think this were a veritable Garden of Eden, a place where flowers and fruit grew spontaneously. But there are other fruit growing countries. There are valleys in Massachusetts fully equal to this for fruit growing. In October, 1888, I spent a few days in the town of Littleton, Mass., and I am convinced there were more apples in a radius of five miles from the town hall than grew that year in Nova Scotia. I saw an evaporator there employing thirty hands running day and night, with a pile of apples in the yard estimated at ten thousand barrels, with half a dozen smaller establishments in the vicinity. It was apples, apples, everywhere. A number of orchards in that township turned out five thousand barrels each, all Baldwins, big, rosy, free from black spots, better Baldwins than we can grow in N. S. But in our own favorites we are beyond competition, with the Gravenstein, the King, the Ribston, and the

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Nonpareil, we not only lead the world but to a great extent enjoy the monopoly.

Another difficulty the young man has to encounter is the tenacious grasp with which the old-time farmer holds his land. How many farms there are through this valley of from one to four hundred acres when five, ten, or twenty acres, will cover the whole cultivated area, and of the rest ten acres will barely support a cow. But the owner "wants the earth," or at least a large portion of it, and cannot be induced to part with it save at exorbitant figures. There are farms in this valley to-day of ten acres in extent, on which the proprietor lives in luxury and turns out an income of a thousand dollars per annum, while too many of us are eking out an existence on farms hundreds of acres in extent.

"Rich in broad acres and half-tilled fields,  
And yet so pinched and bare and comfortless,  
The veriest straggler limping on his round,  
The sun and air his sole inheritance ;  
Shrugs his shoulders in self-complacency,  
And laughs at a poverty that pays its taxes."

Another point, and one on which we are fearfully deficient, is the inculcation of loyalty. In this we should also learn from our neighbor. In the United States loyalty is born and bred in the boy from youth. It is the United States first, last and always. I heard an American citizen say he would rather be a lamp-post on Boston common than a man in Nova Scotia. That is the sentiment, gentlemen, that builds up a country. This is the sentiment we need to infuse into our youth, a sentiment that will keep them in the country even at a pecuniary sacrifice.

Lastly, and not least important, *marry the boy to a loyal loving woman*. Much depends on the fair sex. They can often keep the boy at home when all else fails. The opinion is prevalent that a farmer's wife must live a life of drudgery and privation. In these days it need not be so with the improved appliances for house-keeping and every department of farm labor, there need be no more drudgery than in other business. There is toil in every department. There must always be hewers of wood and drawers of water, but the wood is not necessarily harder nor the well deeper in farm life than in the trades and professions.

I have been discussing this question in my own mind for ten years, and am not prepared to lay down any rule. After all, as a sensible humorist said, "it is not what would you like young man, but what can you do?" There are men farming in this country to-day, spending their lives in a business to which they are not adapted; there are many successful farmers whose very success abundantly proves they would succeed in any business, and on the other hand I am well convinced that many a first class farmer is spoiled on the hill yonder in turning out a second class preacher.

Choose wisely as in you may lay, and then "whatsoever your hand finds to do, do it with all your might." Thus will we honor God and build homes in this fair valley, embowered in fruit and flowers, snug from the wintry blasts, the homes of a prosperous, peaceful and contented people.

PROF. KEIRSTEAD was then called upon amid applause from the audience. The professor said he felt pleased and embarrassed. In his acquaintance with societies of this kind he had learned that there were two classes of people. The first consisted of members of the society, the second and less important composed the rest of mankind. He would congratulate the Fruit Growers' Association upon the good opinion they had gained in the minds of the public. They had done much in advertising our country abroad. There was need of the Society. New circumstances are constantly bringing up complex subjects for solution. It had been said that the common sense of the House of Assembly was greater than that of some of its members. He hoped the statement might be true. So it may be said that the common sense of this Society is greater than of its individual members. Capital is created in a short time and as quickly lost. The best method is that which seizes it most quickly. No man can afford to keep behind the times. If the farmer does not keep up what will be the consequence? Our country has become commercial. The problem of life seems to be the dollar. A good crop of apples affects our colleges, stores, manufacturers, and at last perhaps the pulpit. Farmers should give more attention to the common schools. If agricultural instruction is missing he feels it first. Broad meadows, fruitful orchards and efficient machinery do much to keep young men at home. But a neighbor's daughter who will bring to that home an educated and excellent mind is a still stronger bond to keep the boy

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upon the farm. We must provide for the better education of the girls. There are many emigrants coming to this country, but whether bad or good they will not much affect its future. Let us get the idea that upon us, native born, depends the future of our land.

United States CONSUL YOUNG next made a few remarks. He did not believe that Nova Scotia lacked loyalty. He must refer to his hobby. The two nations of America were really but one. We hardly know when we cross the line. He hoped that in future the line of custom houses would be removed and the two English peoples become one. In the United States Acadia college has a high standing. Some Americans had the idea that Nova Scotia produced only servant girls. Do not ask what is the legislature going to do for you this year. What are you going to do for yourselves?

The PRESIDENT said we are loyal to our province, and are learning loyalty to the Dominion. We are finding out that we own half the continent and have better government than our neighbors. We do not wish to leave the old flag, even for the stars and stripes. We believe we have in Canada what will ever keep her from being either absorbed or annexed to the United States. We look for a greater federation of all the English colonies.

BENJAMIN STARRATT, of Paradise, was next called upon. He did not know why he should be called upon to speak, unless the new Paradise, with its apples, had become associated in the President's mind with the old Paradise with its fruit. He then referred in a humorous way to the evils arising from apple raising in the old Paradise. He liked Mr. Parker's paper. It hit doctors of divinity and medicine and lawyers. He did not care if it did. In his recent trip to England Mr. Starratt had noticed a growing interest and confidence in the future of Canada. He had been told by Englishmen that they liked Americans, but Canadians better. He did not believe there was as much dishonest packing as had been represented. London dealers said their best packed apples came from Ontario, the next best from Nova Scotia, and the poorest from the United States. Nova Scotia apples are packed badly rather than dishonestly. Messrs. Parker, Bigelow, Bishop, R. W. Starr, Dodd and C. R. H. Starr gave short speeches. The familiar "Auld Lang Syne" closed this pleasant dinner and Twenty-sixth Annual Session of the Fruit Growers' Association of Nova Scotia.



## SUMMER MEETING.

HELD AT WEST RIVER, PICTOU CO., JUNE 26th, 1890.

By invitation of friends in Pictou County the above meeting was called at the School House, West River. A goodly number of farmers and others interested in fruit growing were present. In the absence of the President or Vice-President at the time for opening the meeting the Rev. Mr. Thompson was called to the chair, and opened proceedings by prayer, after which he briefly addressed the assemblage, offering some timely suggestions and welcoming the Fruit Growers' Association to Pictou Co. Here Dr. Munroe, Vice-President for Pictou Co. entered, and Rev. Mr. Thompson requested him to take the chair.

The SECRETARY then read portions of the minutes of the last meeting, and called upon MR. WM. O. CREIGHTON, of West River, who read the following paper :

*Mr. Chairman, Ladies and Gentlemen,—*

As the apple is unquestionably our most important fruit, the care and cultivation of young orchards is a matter of the utmost importance. I believe I do not over-estimate the facts when I say that thousands of dollars worth of trees, and hundreds of orchards are planted in Pictou County every year, not one in every hundred of which receive proper care and attention. Most people seem to think that once the tree is planted it should take care of itself. The result is that grass and weeds grow up around the trunk, the trees become stunted, bark louse, borer and other insect enemies prey upon its life, and the tree dies, or is a mere cumberer of the ground. Then the cry is raised that fruit growing is not profitable. Would stock raising pay under similar neglect? Neither can you expect fruit raising to prove profitable without proper attention. But with the same care and attention that will make stock raising profitable, I believe fruit raising will give by far the larger profit.

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The point to be aimed at in fruit raising is to obtain the greatest quantity of large, sound, handsomely formed, and highly colored fruit. To secure this most important object, attention must be paid to the following points: Cultivation, Manuring, Thinning Fruit, Pruning, Grafting, Destruction of Insects. The first work in spring will probably be to remove the earth placed as a protection round the trunks of young trees the preceding fall, and stirring the soil up loosely around the roots. This should be done as soon as the ground becomes dry and warm. This stirring should be repeated every week or two all summer.

In ploughing an orchard the greatest care should be taken not to injure the bark of young trees. It is not necessary, however, as we see in many orchards, to have a strip of ground unploughed along every row, to grow grass and weeds. There is no need of leaving one foot unploughed. It is well to use only one horse the first few rounds in backing up the ground against the trees. Use long leather traces with short whiffletrees securely wrapped so as to prevent any injury to the bark should they strike it. The earth can then be banked up closely without injury to the trees. In ploughing the earth away fasten the plough securely to one side of a bobsled, you can then plough very closely to the trees without any danger of injuring them. If the bark should happen to be injured wrap up with a cotton rag, saturated with melted wax, and the bark will soon be renewed. Leaving it exposed may cause a permanent canker.

Hoed crops, as potatoes, turnips, corn, should be raised in the orchard. Every time the crop is cultivated the trees should have their share. If hoeing will benefit a potato plant it is equally beneficial to an apple tree. Green crops, as clover, buckwheat, may be raised in an orchard with great profit if ploughed under for a manure; but in no case seed down to grass until the trees are well grown. After this it may be sufficient to seed down and pasture calves or sheep, giving a top dressing of manure every second year. If it is impossible to have the ground ploughed, by no means neglect to keep it loose and moist by mulching liberally. An orchardist tried an experiment which strongly proved the benefit of cultivation in orchards. He set out an apple orchard and gave good care. The fifth year it bore eight barrels of fruit; the sixth, twenty barrels; and for eight years afterwards the annual yield was

eighty-five barrels on an average. Cultivation was continued up to this date, and he thought it was now time to seed down to grass and clover. The next year the product fell to eighteen barrels, or less than one quarter. Cultivation was then resumed, and the second year it bore 225 barrels. The owner concluded to keep up clean culture in future.

Early in spring the trees should receive a liberal supply of manure spread over the roots for quite a distance from the trunk as a centre. Nothing for general use is equal to stable manure, as it contains all the essential elements of plant food, both organic and inorganic, and it must continue to be in the future as in the past, the main dependence of the fruit grower. But, as orchards are increasing rapidly, and farm yard manure is required for other crops, we must supplement it by commercial manures or compost. Potash can be supplied in the form of hardwood ashes, and should be used wherever attainable. Phosphoric acid is supplied in the form of bone dust, and superphosphate and nitrogen is often attainable in the form of peat or muck. Every summer a compost might be formed of muck or black mud, ashes, bone dust, with any waste material about the farm. Build these into a heap, using plenty of fresh slacked lime for each alternate layer; cover the whole over with ground plaster to arrest the ammonia set free by the lime. In a few months the whole may be turned over, when it will be in a condition to apply to the land. This will form an almost perfect fertilizer for orchards.

When there is danger of over-bearing thinning the fruit is of great advantage. Do this first with the pruning shears when the trees are in bloom, then again after the fruit is formed thin out until you think there are few enough; again after the fruit is half grown all injured and inferior specimens should be removed. Like pruning young trees, there is not much danger of thinning too much. The error will probably be in the opposite direction. This treatment will accomplish two things—it prevents over-bearing, and has the effect of securing an annual yield. As many bushels can be got from the trees in the fall, as if good and bad mixed together had all been allowed to grow. The labor of assorting will be less, and they will bring a better price in the market.

It is impossible for me to say what is the best time to prune trees. If this has been properly attended to from the time the tree was

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planted, this will not be a difficult matter to deal with. If taken in time all the pruning required can be done with the thumb and finger, and this saves cutting off larger branches when the tree gets older. Remove all twigs growing too low, those growing towards the centre, and thin out where too many are growing in the same direction. Do not be afraid of overdoing it, for when the limbs grow larger they are likely to look a great deal closer together. Never cut off large limbs unless absolutely necessary. Cut close, and cover over the wound with wax, paint or varnish. Remove all decayed and dead branches. During August you will see many little suckers grow round where the branch was cut off. Remove these with the thumb and finger.

During the entire spring and summer keep a close lookout for injurious insects. Those most injurious to fruit trees in Nova Scotia are the borer, bark louse, canker worm, codling moth, and apple tree plant louse. The borer is one of the most destructive insects in these parts. I believe more trees die every year from the ravages of the borer than from any other reason. It lays its eggs during June and July round the trunk of the tree. Old grass forms a good protection for the beetle during the winter. The eggs soon hatch, and the young grub bores its way into the trunk of the tree, where it remains for nearly three years, living principally on the sapwood; and if there are five or six in a tree they almost completely girdle it. Prof. Saunders, in his "Insects Injurious to Fruits," strongly recommends alkaline washes as a preventive. Keep the base of every tree free from weeds and trash, and apply a strong solution of soft soap, in which is mixed a little washing soda, to the trunk of every tree during the month of May, and you will probably not be troubled with borers.

The bark louse is also troublesome, especially in old neglected orchards. They can be easily killed by washing the trees with a strong solution of soft soap, to which is added a little kerosene. This is much more effective if applied when the fly is coming out about the first or second week of June.

The canker worm, although numerous in the Annapolis Valley for a number of years, has as yet scarcely made its appearance in the eastern counties. Last year I found a few specimens in an orchard in Pictou County for the first time; but there is no doubt but with the increase in fruit trees its general introduction into the eastern counties

is only a question of time. It appears soon after the trees are leaved out. It is a small black worm about one-eighth of an inch long, but about three-quarters when full grown. It eats the foliage, giving the trees the appearance of having been swept with fire. Paris Green or London Purple, one-quarter of a pound of either, if pure, may be dissolved in 60 gallons of water. This will be sufficient for one acre of trees, and will kill the insects without injuring the leaves. The same remedy will apply to the codling moth.

The apple tree plant louse may be destroyed by the use of whale oil soap, or an emulsion of kerosene. Prof. Fletcher, Ottawa, gives the following formula for soap emulsion :

Kerosene.....	2 gallons.
Rain water.....	1 “
Common, or whale oil soap.....	$\frac{1}{2}$ pound.

T. E. SMITH of the Nova Scotia Nursery, Cornwallis, expressed his hearty approval of the paper just read.

The SECRETARY said if Pictou farmers were all as well posted as Mr. Creighton, the fruit growers in the Annapolis valley could learn much from them. The paper was full of facts and sound advice, and he strongly commended it to the careful consideration of those seeking knowledge in fruit culture.

A. J. PINEO, referring to Mr. Creighton's paper, said : There was no difficulty in growing apples in Pictou County if the farmers would properly cultivate and care for the trees. Not one orchard in twenty was cultivated. Some varieties he believed would be more valuable in their county than the same sorts grown in Kings County. The Gravenstein, for instance, was a much longer keeper when grown here, and would doubtless prove a safer apple to ship than those raised in the Annapolis valley. The people of Pictou County were justly proud of their mines, but every farmer can have a mine of wealth in an apple orchard.

W. A. FILLMORE, of Amherst, endorsed Mr. Pineo's views, and remarked that some people say we have no markets for large quantities of fruit. The same markets are open to Pictou and all Eastern Counties that are open to the Western Counties. The trouble is Pictou does not grow enough for her local markets which are larger perhaps than in any other county in the Province. There should be

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sufficient fruit grown here to supply local demands and load steamers for London at Pictou Harbour.

DR. MUNRO said his trees had been badly broken down by snow.

W. A. FILLMORE advocated supporting the trees by a slanting stake which he considered better than a straight stake.

The SECRETARY did not approve of staking, good trees properly planted on well-drained soil required no stakes. The breaking of trees by snow was due to the habit of allowing trees to branch out close to the ground. The trees should have but one stalk about four feet high, the branches would then be above the snow and would not be injured in the way spoken of by the Chairman.

W. O. CREIGHTON advised going through the orchard about once a fortnight with pruning shears and hoe, cultivating the soil about the trees, and clipping the branches in such a way as to form good and well balanced head to each. The greatest trouble with Pictou farmers was want of faith, they were not willing to take care of the orchards and wait. His knowledge of fruit growing was due to members of this Association, and he urged all present to become members and place themselves in touch with the fruit-growers of the Western Counties who had had a successful experience.

T. E. SMITH presented figures obtained from several orchardists in Kings County showing the profits of fruit-growing in that county, and was confident Pictou could do as well with proper management.

REV. MR. THOMPSON said certain varieties could be grown as well in Pictou as in Annapolis, but it required time and care to bring about good results. It was a shame the way most trees were neglected. We must use manure and cultivate the trees if we are to succeed. He had been a member of the Ontario F. G. A. for some years and received many hints from this source.

MR. STROMBURG had travelled much in Pictou County, and was satisfied the soil is good for almost any kind of fruit. Urged more attention to cultivation and pruning and also insect enemies. The bark louse is at this date hatching, and trees affected should be washed with potash water. The borer is not so troublesome when the trees are kept cultivated.

T. E. SMITH was surprised to hear that Pictou County could grow apples of superior flavour to those grown in Annapolis.

A. J. PINEO said many farms in Pictou are very like Kings County farms, having all sorts of soils. It only remained to select suitable spots and plant suitable varieties.

REV. MR. THOMPSON considered, for agricultural purposes, Pictou was ahead of Kings County, but the soil of Pictou County was not so well adapted to fruit-growing. Would not advise planting Nonpareil trees, they will not do well here.

MR. PORTER said he had raised some fruit, but for want of knowledge had not succeeded as well as he could wish. He had suffered from the black spot on the Bishop Pippin. Had several varieties and believed Gravenstein would do well. Asked for information *re* black spot.

The SECRETARY replied referring Mr. Porter to the Reports of the Association and read from Inspector Klees' paper as the latest authority on the subject. Advised the thorough drainage of clay ground if such was to be used for orchards, and gave some notes of the sales of apples in the English markets.

Meeting adjourned till 7 P. M.

#### EVENING SESSION.

Meeting re-assembled at 7.30, the Hall being well filled. VICE-PRESIDENT MUNROE in the Chair.

*Question*: "What varieties of apples are best suited to Pictou County orchards?"

DR. MUNROE said for autumn varieties he had found Red Astrachan a rapid grower, even in grass land, and fairly productive. Early Harvest grew well, but subject to black spot. Oldenburg, a thrifty tree, and bears large quantities of fine fruit. Alexander, one of the best for evaporating. Fall Jennetting, a very healthy and vigorous grower—a good stock for grafting. Many of the native apples come in competition with these sorts. The Fameuse, one of the finest grown, and keeps well up to March. The Gravenstein, the prince of apples, will grow almost anywhere and do well. Bellflower does well on dry banks. Baldwin is tender and not very satisfactory. Golden Russet, a clean grower but too small fruit. King, one of the largest and handsomest apples grown, but has more culls than Golden Russett. The Ribston does not seem to be healthy and vigorous enough for Pictou.

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MR. McLEOD said he had a long keeper similar to the Gravenstein which he considered valuable.

MR. CREIGHTON advised planting only about six varieties, mostly good keepers, and looking to foreign shipment for markets: Astrachan and Oldenburg do well for local markets, but would not stand shipping. Recommended planting Gravenstein, Kings, and Golden Russets. Would not advise planting Ribston, they did not do well.

MR. STROMBURG said Ribston might succeed in some places, but Astrachan would grow anywhere. Oldenburg, very thrifty. Alexander good, and so with Keswick Codlin. Gravenstein, a general favorite, and doing well. Ben. Davis, a good grower but poor quality of fruit. R. I. Greening does well.

MR. FILLMORE would add Wealthy to Mr. Creight on's list, but for Toney Bay and like sections only the hardiest sorts, such as Oldenburg and Alexander should be planted. Would not recommend either Ribston, Nonpareil, or Baldwin.

MR. CREIGHTON said he believed Gravenstein would supersede all other autumn sorts, let us plant but a few sorts and let those be the best.

MR. PINEO asked about plums, and expressed his belief that plums might be a profitable crop to grow.

MR. W. J. CLARK had planted plum trees, but had been disappointed in the trees, they had not proved true to name, and many were worthless.

MR. T. E. SMITH said Lombard and Bradshaw were good standard sorts. Moore's Arctic was in demand just now and might prove valuable. The Masters' was a good preserving plum. But with this he feared many would have the experience of the last speaker, as thousands of trees had been sold for Masters' plum by parties who had but a few hundreds.

The SECRETARY asked if plum growers in Pictou were troubled with Black Knot and Curculio. If so, what means were adopted to prevent the ravages of these pests.

DR. MUNROE said we have both to perfection. Cutting down and burning the branches seemed the only effective remedy for the Black Knot. He had tried cutting out and rubbing with pork rind, and in some cases applied turpentine, but with unsatisfactory results.



He had a number of varieties and found only the Magnum Bonum free from Black Knot.

MR. FILLMORE believed no variety was positively exempt from Black Knot. The only safe course was to cut and burn as soon as the knot appeared. High cultivation and the use of salt and ashes was strongly recommended.

The SECRETARY spoke of recent experiment in the use of solutions in spraying trees for the prevention of black spot on the apple, also for the purpose of destroying the Codlin moth worm and the canker worm.

MR. MURRAY suggested that there was danger destroying friends as well as enemies. Fruit growers should be educated to discriminate.

Votes of thanks were tendered the Chairman, the Press, &c., after which the meeting adjourned at a late hour.

