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Omnium rerum, ex quibus aliquid acquiritur, nihil est agriculturâ melius, nihil uberius, nihil homine libero dignius.—Cicero: de Officiis, lib. I, cap. 42.

VOL. IV. HALIFAX, N. S., NOVEMBER—DECEMBER, 1882. No. 29.

Our desire to give as fully as possible the Addresses delivered at the Agricultural Exhibitions, has led to the exclusion this month of the continuation of the Pictou Cattle Disease papers, also of the Herd Register.

It was a happy thought to celebrate the Cape Breton Exhibition by an Ode, of which we have fortunately received a copy. We trust the distinguished donor, as well as the accomplished author, will excuse the liberty we take in giving it to our readers:

CELEBRATION ODE.

All hail the glorious arts of peace!
Thy praises now we sing,
And all that give the land increase,
And health and comfort bring.
To Mother Earth we all should go
Who wish to be repaid
For Labor's need: she doth bestow,
With bounteous hand, her aid.

CHORUS:

Then welcome every son of toil,
Who lends a helping hand,
To dig the mine, to till the soil,
And make a happy land.

Far from the trumpet's battle call
That echoed from the East,—
Here, only peaceful joys befall,
War's loud Alarums ceased.
Beneath the skies, our country smiles
With radiant, happy face,
And let content our heart beguile,
As time goes on apace.

CHORUS:

Then welcome every son of man
Who lends a helping hand,
And doeth all the good he can,
To make a happy land.

O'er all, supreme, doth Justice hold,
With even hand, her sway,
And Freedom, sturdy, honest, bold,
Can ne'er be driven away.
Let us then our vows renew,
And joyfully be seen,
Professing the allegiance due
To God and to our Queen.

CHORUS:

Then welcome every loyal man,
Who lends a helping hand,
And doeth all the good he can,
To make a happy land.

North Sydney, Oct. 17th, 1882.

A GREAT LOSS.—We are sorry to learn that Mr. C. P. Blanchard has lost one of his Ayrshire Cows, which died on Friday night last. We asked Mr. B. to give us some particulars in reference to this cow and he has furnished the following:—
"Lady Franklin," winner of first prize at Dominion Exhibition, Halifax, 1881, over 30 other competitors. This cow had her first calf on the 4th Oct., 1881, and her last calf on the 20th Sept., 1882, During the year she gave over 4000 qts. of milk. When fresh in milk she gave 22½ qts. per day, and 6 months after calving over 16 qts. per day. She gave her own weight in 20 days. The milk was sold for the Halifax markets at 3 cents per quart and realized during the year over \$120.—*Truro Guardian.*

We learn from the Toronto Mail that the article on "Canada as a Home," from the pen of Mr. J. G. Bourinot, the accomplished Secretary of the Royal Society, which was published in the Westminster Review, and has since been the subject of laudatory remarks by men of position and judgment, appears, in extenso, translated into French, in the current number of the Revue Britannique of Paris, an influential magazine of an international character, which professes to reproduce "the best periodical writings of Great Britain and America." This is another testimony to the ability which has ensured for the essay a world-wide circulation and thus fulfilling the author's patriotic desire to make Canada more generally and more favourably known abroad. No better picture of the social condition of Canada, its material resources, educational advantages, and the possibilities which it holds out to the better class of settlers, has ever been placed before the English public.

The cargoes of the Allan Line steamships which have arrived at British Ports since opening of the season of St. Lawrence navigation, took out:

	Oxen.	Horses.	Sheep.
From Montreal.....	4499	14	3445
From Boston.....	1153		

which were all landed in good order and condition, with exception of 4 Oxen and 22 Sheep;—the mortality being only 1-14th of 1% on Oxen, 2-3rds of 1% on Sheep.

ADDRESS OF ISRAEL LONGWORTH,
ESQ., AT THE CLOSING OF THE
TRURO EXHIBITION.

While not unmindful of the honor conferred upon me, in being asked to close the first agricultural and industrial exhibition for District No. 4, composed of the counties of Cumberland, Colchester and Hants, I have had too much experience of the unreasonableness of the honor of speech-making, amid the hurry and din of exhibitors in collecting their exhibits for home, and the noise of stock in leaving the grounds, to attempt anything like a lengthy address, which in the case of the gentleman who opened the Exhibition, was not only most appropriately, but very cleverly done. By all of this bustle, however, I am forcibly reminded that it will never do for me to follow the example set by Colonel Drayson in his admirable inaugural address, by which he left it a moot point with many of his hearers, whether the triumphs of the plough were not even greater than those of either the sword or the pen; but that in performing the duty assigned to me I should be as brief as Cæsar when he uttered those memorable words that expressed so much: "*Veni, vidi, vici!*" or as Dean Swift when he preached his famous charity sermon.

When the Board of Agriculture succeeded in prevailing upon the Legislature of 1875 to pass an act appropriating \$4,000 for a Provincial Agricultural and Industrial Exhibition, many persons who consider a dollar as large as a cart wheel, when given to a general object, viewed the expenditure as a great drag upon the public chest; yet, out of that beneficial measure, has arisen the necessity for the grant every second year to exhibitions like the present, seven of which will be held in Nova Scotia this season; and, in view of the large amount of success that has attended these exhibitions, and the present one more particularly, who can speak disparagingly of this as a farming country, or dare venture to circumscribe the incalculable amount of influence for good that public shows are exercising in hastening the full development of the vast and various resources of our fine province.

These public annual exhibitions, and the periodical ones that preceded them, are a necessary corollary of the agricultural problem so ably demonstrated by Agricola in his day; and the immense benefits they have already conferred upon the province can only be understood by contrasting the state in which John Young found the husbandry of Nova Scotia, when he wrote his admirable "*Letters of Agricola*," with its present condition. This can best be done by an extract taken from Guthrie's *Modern Geography*, London edition of 1792, which

gives a good idea of the farming done in the Province when Mr. Young came on the stage in 1818.—"Nova Scotia or New Scotland was, till lately, almost a continued forest; and agriculture, though attempted by the English settlers, has hitherto made little progress. In most parts the soil is thin and barren, the corn it produces is of a shrivelled kind, like rye; and the grass intermixed with a cold spongy moss. However, it is not uniformly bad; there are tracts in the Peninsula, to the southward, which do not yield to the best land in New England; and in general the soil is adapted to the production of hemp and flax. Flattering accounts have been given of the improvement making of the new settlements, and on the Bay of Fundy."

From such a picture we have only to glance at the various departments of this exhibition to appreciate the great change the agriculture of the Province has undergone during the past sixty-four years; and, in view of the lovely face Nova Scotia now presents from the honest labors of her husbandmen, the question may well be propounded,—

"Where's the coward that would not dare
To fight for such a land."

But it is not my intention to detain you by a detailed account of the departments comprising this exhibition, from which you have learned many valuable lessons, and will retain in your memory as one of life's pleasure gardens. Not to mention, however, the flowers, would be an oversight as great as the loss to the Exhibition, had that department been unrepresented. Too much cannot be said in favor of the beautiful flowers. The greatest Teacher who ever appeared among men, in His sermon on the Mount, observed: "Consider the lilies of the field, they toil not, neither do they spin, and yet I say unto you that even Solomon in all his glory was not arrayed like one of these."

On an occasion like the present, I feel it would not be out of place to pay a just tribute to the public services in the cause of floriculture, of the Huttons, the Harriss, the Leahys, the Wilsons, and a number more whose names the flowers bring up, who have followed the occupation of florists for years with a zeal and devotion that would have insured success in any other branch of agriculture, and for this reason they are all the more entitled to grateful recognition at this time, for when they have done all in their power to bring their art to the highest state of perfection, minister to our delight, increase our comfort, beautify our homes and add to our contentment and happiness, they have reaped for themselves no adequate returns. And why should we not acknowledge the services of the men who, at their own cost and charges, have

worked up this most interesting department to the greatest degree of excellence, in which we beheld it to-day; and by their zealous and praiseworthy efforts have gained for it as enviable a position as that occupied by any of the more lucrative departments fostered by the Board of Agriculture, and promoted with public funds. On behalf of the Board I tender these gentlemen warmest thanks and commend their services and their well stocked gardens and nurseries to the agriculturists of the province. I would also, for the men who have done so much to cultivate a general taste for flowers, recommend the officials of the Agricultural Societies, in their deliberations and endeavors to advance the agriculture of their respective districts, to act a little more the sentiment of Goethe, who said, "We should do our utmost to encourage the beautiful, for the useful will encourage itself."

Mr. Chairman, had not you, sir, in introducing the military gentleman who gave the fine opening address, given expression to the wish that your hearers should contrast the present display with former exhibitions, and draw their conclusions as to the merits of this show, when compared with those that have preceded it, which request was very adroitly turned to good account by Col. Drayson in apposite remarks relative to the great importance to farmers and others, "cultivating their faculties of observation," I fear I should tax your patience with my own observations on the lessons taught by this exhibition. Under the circumstances, it only becomes necessary for me, on behalf of the Exhibition Committee, to thank you for your attendance, and to express their regret that you were not all exhibitors. But, without giving my own views, I would like to inform you that the judges of roots, in their report to the Committee, gave it as their opinion "that the exhibits in this department for excellency of quality, as well as for size, and especially in potatoes, have never been surpassed at any previous Nova Scotian show; and they doubt if as good a display has ever been witnessed on the continent of America."

Considering the very large amount of money that is usually collected from the sale of potatoes, from what has been seen here, no one hereafter will accuse our farmers of paying their debts in small potatoes, and, only think of Councillor Craig's squashes weighing 119 pounds, and citron melons 26 pounds, that would do credit to a corporation dinner,—while the first prize tomatoes were 6 inches in diameter, by 3½ inches deep. The Judges' report was repeatedly endorsed in my hearing by leading agriculturists from abroad, who have attended great

shows in England, Canada and the States. And I was glad to hear so prominent a Nova Scotian stock raiser as Jonathan Rand, a large exhibitor at this Exhibition, declare it as his decided opinion that the exhibit of grade heifer calves, in numbers as well as size and breeding, is far ahead of that of any previous show, and that he believed it would bother the best Philadelphia lawyers to decide between some of them.

This is very gratifying to know, and when made public, must restore the confidence of Bermudians in the character of our cattle for beef, which, by a late report from the colony, appears to be somewhat shaken, on account, it is said, "of too many of the venerable parental ancestors of our best beeves having been sent that way." But, high as is the standard of excellence which our cattle have attained in breed and growth for feeding purposes, it is not to be compared with what has been accomplished in other parts of Canada. And our farmers must not rest satisfied until they secure results that have been obtained elsewhere. At the great shows recently held in Toronto and Kingston, H. & J. Groff, of Elmira, exhibited yearling steers weighing from 1300 to 1400 pounds a-piece; two year olds, from 1800 to 1900 each; and three year olds from 2,500 to 2,600 pounds, the largest, fattest and best lot yet raised in the Dominion, and from all I have seen at this exhibition, when compared with others of the past, I am well assured that our farmers are becoming more convinced of the fact that a high standard of agriculture is not attained by cultivation of the soil for immediate profit, regardless of future crops. In the past, quick returns have been too eagerly sought after by our husbandmen, and there is a danger of farming in that direction becoming a fixed habit to the injury of the soil. In the early history of the Province, such a course was almost unavoidable. Grain succeeding grain year by year, is a scourging, impoverishing system, and it cannot long be pursued, till the innate strength of the soil is wholly exhausted. The cotton plantations of the South have in many States ceased to be fertile, while farmers in the Northern and Eastern States have been so impoverished that a yield of from eight to ten bushels of wheat per acre has become general. In this province, under an enlightened system, high manuring, thorough cultivation, and a rotation of crops, is becoming the order of the day in many parts, and this is the system exhibitions like the present are calculated to establish throughout the length and breadth of the land, and make patent to the world that agriculture is our true national policy, and the real basis of our prosperity.

Now, paradoxical as it may appear, I am going to close this Exhibition for the Committee, and ask you to hasten away, by stating the agricultural changes some poetaster has wrung from words diametrically opposite: "Don't be in a hurry to go," which, if observed by the staid young men within the building, will ensure the next Exhibition for District No. 4, to be held in Truro six years hence, ranking among the Exhibitions of the period, as the present does among those of this, like the daughters of Job among the women of the land of Uz—the fairest of them all.

DON'T BE IN A HURRY TO GO.

Come boys, I have something to tell you,
Come near, I would whisper it low;
You are thinking of leaving the homestead,
Don't be in a hurry to go.
The city has many attractions,
But think of the vices and sins;
When once in the vortex of fashion;
How soon the course downward begins!

You talk of the mines of Australia;
They've wealth in the red gold no doubt;
But, ah! there is gold on the farm, boys,
If you'll only shovel it out.
The mercantile life is a hazard,
The goods are first high and then low;
Better risk the old farm a while longer—
Don't be in a hurry to go!

The great, busy West has inducements,
And so has the busiest mart!
But wealth is not made in a day, boys—
Don't be in a hurry to start!
The Bankers and Brokers are wealthy,
They take in their thousands or so;
Ah! think of the frauds and deceptions;
Don't be in a hurry to go!

The farm is the safest and surest;
The orchards are loaded to-day;
You are free as the air in the mountains,
And monarch of all you survey;
Better stay on the farm a while longer,
Though profit comes in rather slow;
Remember you have nothing to risk, boys,
Don't be in a hurry to go!

GENERAL LAURIE'S ADDRESS AT THE OPENING OF THE ANTIGONISH EXHIBITION.

Mr. Chairman, Ladies and Gentlemen:

In one sense the adoption of the system of District Exhibitions becomes almost objectionable, in that it has so largely multiplied the number of opening addresses. One almost expects that a competition will be held in this line and a prize offered for the best, and I throw this out as a suggestion for the committee when engaged in making up the next Prize List, but I need hardly say that I do not enter my name as a competitor. When invited to address you to-day, I felt that no oratorical effort was necessary, but simply I might talk with you as farmer with his brother farmer on farming subjects; probably the subject which has been longest discussed in the world, certainly from an earthly point of view the most important. If Adam took any interest in his occupation he must have talked over the prospects of his crop

every evening with Eve, for until the boys grew up, the question of good or bad return for his or her labor, (for I suppose she lent a hand) must have been a matter of absorbing interest; he had, however, immense advantages, he had no store bill to meet, and no trouble about marketing his produce, and thus was relieved from the anxiety which worries the modern farmer as to the best chance for disposing of what he raises.

All these six thousand years farming has been discussed and written about. It would seem that there would be nothing left to say,—it is almost certain nothing can be said that has not already been said over and over, but the matter of providing for our physical necessities, second only to our spiritual wants, may well take pattern from the process pursued by the latter. The "old, old story," is repeated, possibly presented in a new shape in order to arrest attention, and he is the most successful pulpit-preacher who presents his message so that his hearers feel that it is addressed to them personally, and that it is suited to their wants. May I in this way be successful to-day, in enlisting your attention by touching on points which come home to you as really important.

Coming in this direction from Halifax, as soon as the traveller passes the "divide" which separates the Atlantic watershed from the northern slopes, any person gifted with ordinary observation, must be struck with the magnificent opportunities the country offers for farming and the very small use that is made of them. From Oakfield, where I live, twenty miles this side of Halifax, without a break to this point, Antigonish, our traveller passes through land, not one acre of which is unfit for cultivation, and which with ordinary fair treatment will give as fair a return as can be obtained in any temperate climate. The next question the traveller will ask "Is there no market here for agricultural products?" and if he asks his fellow-traveller in the cars, he will probably find him a "traveller" for some Western Canadian firm, who is visiting the Province to sell butter, cheese, flour, oatmeal, pork, or beef, or possible to arrange for shipping these goods over 1000 miles of railway through Halifax, the business centre of this Province, to the European market, which is most accessible from here.

The land, the climate, the market, the means of communication are here. "What is the want" our traveller most naturally will inquire. Are the inhabitants physically or mentally incapable of utilising these great natural resources, which are thus made available? and more than probably this question will fall on the ear of a fellow-passenger, a New Englander, who has run down in this direc-

tion to escape the fierce summer heat of his own land, and who can at once reply that the best help that employers in Massachusetts and the neighboring States can obtain comes from this Province; that a man or woman applying for employment in Boston can hardly give a better reference than to say that they came from Nova Scotia. Our traveller finds the problem more insoluble than ever. He gives it up, and in this he is but following the lead of clear headed men who for generations have considered this, have written and talked on the subject, but who still saw our land remain unsettled, and our people seeking in preference a living elsewhere. I have lived among you more than twenty years, have farmed amongst you for sixteen. I can speak with some knowledge of the country, and with personal experience of an agricultural life; I can testify that with reasonable care every crop grown in temperate climates such as that of England, bears at least as well here, that as a general thing prices are good, and sales certain. I do not purpose giving my own financial experience, but I have learned enough to understand why all our young men do not, under present conditions, take to a farming life and it will be well to consider the obstacles, and enquire if they can be removed.

I believe the question resolves itself very largely into the very natural enquiry, "Does farming pay?" Is a fair return obtained for the interest of the value of the land, for the capital invested in stock and implements, as well as fair wages, or remuneration for the work done by the farmer and his family? Now, this is, I believe, the rock on which so many split, that the young people get disgusted and take the first chance of escape. Here, under present conditions, a farmer on a good farm, which he owns, has an easy, comfortable life, thoroughly independent, and very little hard work, although very little actual cash. But I believe in most cases that his year's operations would not stand the test I propose; in fact the returns do not justify the outlay, and the spread of education super-added to the native common sense of our people teaches them this is not right, and they leave. I have expressed the view elsewhere that our system or want of system of farming is in fault. Mr. Caird, or some other leading agricultural authority, in a letter addressed to the English press lately, expressed the view that not only was there no system of agriculture suitable for all countries, but that even in a country like England the conditions of land, appliances, climate and markets were so various that every farm must have a system of its own. Here in Nova Scotia our earliest farmers occupied the alluvial lands at the heads of the bays,

and trusted largely to hay, which was produced on these marshes without any effort; as the country settled inland, intervals furnished hay, and the system of depending on hay as a main crop was adopted even by farmers working only upland. Any one who will give but a few minutes' thought will see that hay farming on upland, even if all the hay be consumed at home, must in a measurable time run a farm completely out, that the amount restored to the land will not maintain it in a productive state, the farm is starved; the owner next starves, and his children imbibe a dislike for the occupation; they seek a living elsewhere, and naturally gravitate to the nearest large town. The country feeds the towns the world over, supplying fresh, healthy inhabitants to replace those who get used up in the mill of city life. As an illustration of the necessity for adapting ourselves to the changed conditions, I can quote the position of my neighbors. Before the days of railroads, Halifax obtained all the hay it required by road, and the farmers within 20 or 30 miles devoted all energies to raising hay, carrying back goods of every kind as supplies for their neighborhood—thus getting a load both ways—the railways now carry in hay from places 100 miles away, and do all the return transport. The farmer of the neighborhood had his prices for his only marketable article cut down, and, losing his transport business, became poorer and poorer. He blames farming as not affording a living, and now in many cases the farms are deserted and mainly for want of readiness to adapt his system to his changed surroundings. This case is really our own, although the details differ—we must adapt our system as circumstances and conditions change.

I was much interested in a description given lately in the *Times*, the great London newspaper, of the agricultural industry of the Southern States, and there were some points so similar in it to our own condition that I had intended to read it, but the hour is now so late. It points the folly of depending so much on one crop, shows how the country languished until a wiser policy was initiated, and instead of accepting the position of being merely a grower of cotton for factories in other parts of the world, it has now laid itself out to produce what it wants for itself, such as is suited to its climate; and the prosperity created thereby is so great that it is no longer contented with supplying itself with raw material only, but has decided to work up these into articles of general use; and the exhibition held last year at Atlanta, in Georgia, showed what strides were already being made in this direction.

In my early days in Nova Scotia, I was passing through the neighboring

county (Guysborough), and, chatting with a resident, he, in describing his mode of life, mentioned "my potato land always grows potatoes, and my oat land oats," I was staggered and asked if he had no system of rotation, but he assured me that this was his regular practice. There were several feet of snow on the ground, else I should have requested an introduction to his crops.

In the county to the east of us I was informed by a sensible and intelligent man, who preferred to follow farming as an occupation—I do not like to style him a farmer—that it was the practice in his neighbourhood to plough up the land and take two or three crops of oats, then let the land run out to pasture, till it got rich again; that the cattle were yarded at night on land intended for potatoes the following year, and that all the manure was reserved for wheat. Could farming prosper under such an arrangement?

In the late issue of the *American Agriculturist* I read an advertisement "Mixed farming in Nebraska, grain, corn and live stock growing combined," and most "profitable and agreeable of any occupation." Now I believe that in this the advertiser has struck the nail on the head; this is what we can and must do in Nova Scotia, follow mixed farming—grain and live stock combined—but even when we arrive at this we are only on the threshold. We now come to the necessity for intelligence and thought.

Years ago Mr. Mechi, the razor strop maker, taught the farmers of England to think about their business, and of course stirred them all up against him, but he, with all his zeal and faith, took the tone that grain paid the expenses; and that cattle were a drag necessary to maintain fertility, but not at all profitable, and I fancy that our best farmers here now hold pretty much that view. I go further, I maintain that under the system we have hitherto followed we have lost money by feeding cattle. That is, that taking the amount of food given to an ox at its selling value we have all lost money by keeping him. He eats \$50 worth of food, and very rarely adds that to his value during a winter season. Now this will not do, we must improve on this arrangement, we must aim at making profit, both in cattle and in grain.

In an address delivered here two years ago I call to mind that Mr. Gregory dwelt on the great future that was open to us by cattle shipments to Europe, and in enlarging on this point he rendered excellent service. I believe that our market there is practically unlimited, but we must learn to supply what our proposed customers want, not old tough working oxen, fatted up for beef when past their

working days, for I believe that a working horse would yield as good beef as this, but young, juicy beasts, well cared for from their calf days, and kept in growth, winter and summer, with the full intention of maturing them early for shipping beef.

Under our present system of working it takes four or five years to build up the frame of an animal on which the flesh and fat should then be laid, and from which, and not from the frame, the butcher and equally the farmer, is to get his profit—if any. The frame should, therefore be simply used as a machine to work out nature's process of converting food into flesh, and carrying it when so made; this frame is the most expensive part to make and exhausts the most valuable constituents of our farms—the phosphates—and in itself is unprofitable and yet we find that in nine cases out of ten as soon as an animal reaches this stage, when the original outlay might be turned to some useful purpose, the owner, instead of studying how much beef he can possibly put on the animal, casts about to see how soon he can get rid of this carcase, and commences bringing on another to the same stage. Contract beef is the curse of the country; the animal is sent to the butcher just at the stage when it should be put up to fatten—another year's feeding would have doubled its value; but the farmer parts with it, and spends another four years in bringing on another animal to the same stage, thus incurring the maximum of outlay with the minimum of profit. I know that our farmers see many difficulties in the way of raising fattening food for their cattle, but these difficulties shrink wonderfully when fairly faced. Turnips are easily cultivated and do well, give an enormous yield, and are very valuable for fattening cattle.

The new system of ensilage, or pitting green fodder for winter use, is rapidly growing in favor. In nearly every section of the province it is being tested, and though no doubt there will be some disappointments and failures, yet its record proves that it has succeeded elsewhere and it will be our incapacity and not its fault that will hinder its success here also.

Imagine a crop stated to yield from 30 to 75 tons to the acre that can be cut and at once removed from the field, and stored without any delay, it thus renders us almost independent of weather, as the wetter it is put away the better it is; a crop that for feeding purposes is stated to be equal to half the weight of the best hay. Imagine your land thus giving you from one acre, at the lowest computation, fifteen tons of the best hay, or to use the common form of calculating farm value, that will winter four or five head of cattle. What a future it opens out to our farmers, and this with a crop that forms a fitting preparation for a crop of wheat, and its following clover or grass crops. It has what is to my mind another immense advantage, it cannot well be sent to market, it must be fed on the farm. It will thus swell the manure pile, encouraging the farmer to increase his breadth of land sown to it the following season, and thus almost compel an increased enrichment of the farm from year to year. Our neighbors who do not go in for turnips, but depend on Indian corn as a drill crop, are using ensilaged fodder, principally rean corn, in place of hay; but from all I

have read, I incline to think that, given alone, it will hardly furnish heat enough to the animal in our colder climate, and I believe we must rather let it take the place of turnips, and feed it out with cut straw. Hay, I hold to be too expensive an article to be fed to fattening cattle profitably. Of course it has more valuable food properties than straw: hence it commands a higher price in the market, and our business is to sell to the best advantage the produce of our farms. We follow the mixed farming; we have grain, straw, hay and cattle; we sell the grain and the hay, and devote ourselves to raising a crop, be it turnips, or be it green crop, that will enable us to feed the straw to our cattle, and send them away fat, bringing us in a handsome profit.

I know it is the fashion amongst a large number of our people to sneer at scientific farming. There is some reason in this idea,—theorists chose to assume that it was merely an affair of chemistry to farm,—you were to ascertain the constituents of the crop you wanted, to assure yourself that these elements were present in the soil or in the air, and, presto! the thing was done; it must be the fault of the farmer if he did not get his yield as desired.

Were this apparently simple process all that is required, a revolution in other than farming matters should long ago have been worked out. Every chemist knows the constituents of a diamond, he can obtain the carbon in any quantity, but still he is unable to compel the elements to assume the shape and properties of a diamond,—and this could be done in a laboratory, under cover, and with all conditions favourable, whilst the farmer has to depend on light and heat to assist him. Dr. Siemens, who we all know by name as one of the principal owners of the Londonderry Iron Mines, and hence a great benefactor to Nova Scotia, as developing one of its most important industries, lately satisfied himself that the electric light was a successful substitute for the natural light as an element of the growth of plants, but Providence as a general thing, furnishes us with sufficient sunlight here to relieve us from incurring this additional expense, so we must consider that for practical purposes we are still to depend on nature for light, heat and moisture; these come in too large or too small a quantity at times, and then the chemists' theory does not work; but we know too, that all the elements necessary to complete the plant may be necessary, but not in form available for its use. The British government served us out with green coffee berries in the Crimea, and then expressed surprise that we did not make ourselves nice warm cups of coffee on our return after a cold, weary watch in the frozen trenches of Sebastopol. Our men died by hundreds for want of these and other necessities—occasionally we got raw beef and pork, but had no fuel with which to cook it; it was a practical lesson the farmer can apply, that the necessary food might be actually present, yet not in a condition to be assimilated. But our farmers did not understand the reason why the theorists' plan fell through, and the pendulum swung the other way; the farmers sneered at the scientific men and pronounced science as applied to agriculture a failure and a humbug. They travelled in the old tracks, from time to time learning by experience that certain things "paid," such as putting on

manure to get a better crop; keeping the manure under cover to prevent the rain washing it; putting muck under their cattle to absorb the liquid; spreading lime on the surface. These things were done by farmers who sneered at science as applied to their occupation, and yet these operations were as thoroughly applications of science as any performed by a chemist in a laboratory. These men of the so-called old school, would have been just as much surprised to hear that they were farming scientifically, as was Moliere's character in *Le Bourgeois, Gentilhomme*—M. Jourdain, to find that he had been talking prose all his life without knowing it.

A very able army officer, Col. Chesney, in a lecture lately delivered in India, which he entitled, "Taking Stock," and which was devoted to a consideration of our military capacities as a nation, summed up the qualities necessary to a successful general as being, originality, vigour and energy of character; originality to conceive, firmness to pursue the plans which he has conceived, and untiring energy in that pursuit in order to obtain his ends. All great masters in the art of war have shewn these gifts. Frederick the Great and Napoleon, in these modern times, studied the points on which their enemy, from one or another cause, was weak, and how they could best realize their resources, either in the character of their troops or the theatre of war, to establish their superiority. It was in the application of old and well-established principles to new surroundings, that their merit consisted, and their successes followed, and we may surely learn a lesson from this. The principles on which our farming operations may and must be carried on are established, but in a new field, for this is practically a new field, with new markets opening up, with new conditions as to competition through facilities of transport afforded; we must adapt ourselves, in fact. To succeed we want originality to conceive a new system fitted to our climate and surroundings; we must not be daunted by an occasional failure, which should but lead us to study more closely the system we are working out with a view to modification or improvement, and we must, above all, apply energy to carry out what we undertake. I know no career in which success can be obtained without energy; a listless, sleepy, or lazy man will not succeed in any avocation.

If I were to base my views as to the chances of success on the results of the present season, which has from the first been very unfavorable, I should be inclined to take rather a gloomy view of our chances, and to any young man asking my advice as to going into farming, I should borrow from the English comic paper, *Punch*, the advice to persons about to marry, "Don't." But I believe this year, with its heavy snows, very late cold wet spring, summer drought, and early autumn rain storms, to be so exceptional, that we need not be discouraged by it, and I do not hesitate to urge others to do as I am doing myself, "take hold of farming with a will, and it will justify your faith." I am not altogether a believer in these district exhibitions being supported from the Provincial funds. I believe they should be held, but under County or united County auspices, and be supported from local resources. These should be the feeders, and at the same time, as it were, the sieves or

guages through which exhibits should pass as proofs of their fitness for the Central or Provincial Exhibition, which should be held yearly under the auspices of, and supported by the funds of the Province. There is a serious danger which I trust and believe that you avoid, but which John Young in his letters of Agricola warned us against more than sixty years ago, that there was a great danger, and the greater if the funds are not locally contributed, but come from a sort of distant Providence in the shape of the provincial chest, that the prize meeting may degenerate into a job among the farmers of the neighborhood, who simply look on the provincial grant as so much money to be divided. Local contributions locally administered, will best check this, and the spirit of the people will best be shown by the principle of self help being recognized rather than by drawing on external funds. My acquaintance with the people of the counties forming this district assures me that they would not be behind hand in any undertaking to which they give their minds. Whether at home or abroad, one cannot but admire their push in all other than agricultural pursuits. Amongst representatives from nearly every county in the Province whom I met in my late visit to British Columbia, were a McKenzie from Pictou, a Chisholm from Antigonish, a Matheson from Guysboro, and all were doing well, but the hankering after the old home was strong within them, and both Matheson, with his thirty-five cows and snug dairy farm and bright Pictou wife, and Chisholm, too, told me they had fully made up their minds to get back to Nova Scotia and settle down on a comfortable "ranche." Wherever they may decide to remain, wish them success, as they are good and useful inhabitants. In the not distant past it was the custom of our people to gather together to assist each other at important operations on their farms. These "frolics" or "bees" are now almost a thing of the past, as population has increased, and help can be otherwise obtained; but though farming methods have changed and improved, the duty of helping one another devolves on farmers as much as ever, not now in manual help, but in publishing and keeping each other informed in the result of their experiments and improvements in systems they from time to time work out.

We sadly want a more general knowledge of the principles of agriculture diffused among our young people; the control of education is in provincial hands, and this might be turned to good purpose in giving the elements of a technical education in a branch that a majority of our population will necessarily follow. The more highly our farmers are educated the more interesting and engrossing the occupation will become; it will so progress that it will become a mine of research, inviting men to study its secrets still more closely.

The tendency of the present age is to demand that science shall prove its utility by its application to the industrial arts; it is no longer to be dreamed of or written about; the scientific man is no longer to live in an atmosphere of his own, apart from the world, but he is to bring his contribution to be at once worked into the web of our daily life. We welcome him and respect his learning, the more because we see it has useful bearings on our material progress, and comes in as a valuable assistance to the practical worker, and who more practical than Scotchmen.

We of Scotch descent claim our national attributes; you born in Nova Scotia, I in England, shall feel that we have retained some Scotch virtues and traditions. We are not easily discouraged. Robert Bruce learned a lesson from the spider, and was not too proud to own that a humble insect could rouse and instruct a King. He had an object to gain which was worth the effort, and set himself to do it. We can take pattern from the Kingly Bruce, or be shamed by the insignificant spider.

If we fail we should try again. We, too, have an object to gain, to develop and give high standing to a Province of which we are proud; we wish to place it on the high pedestal which Providence in the endowment of its natural resources intended it should occupy.

It was the wish of many of our young men to have joined in the expedition which bore the old flag of England triumphant through Egypt last month; they would have been worthy comrades of the gallant troops that carried the entrenchments at Tel-el-Keber with a rush in the grey September morning, but it was not given to us to be there. We can, however, work for our country elsewhere, and I believe that we can do as much to promote its prosperity and future greatness by developing its great agricultural resources, as if we had charged with the Highland brigade or ridden with the Life Guards at Kassassin.

We have found the work that is given us to do. Let us do it with our might.

GOVERNOR ARCHIBALD'S OPENING ADDRESS AT THE YARMOUTH EXHIBITION.

If an opinion were to be formed of the industry of this neighborhood from what is now displayed before us, we should be apt to conclude that Agriculture was one of your main stays. The various articles of produce arranged on these tables—the roots and the fruits which load them down and, in the adjoining enclosure, the fine specimens of stock, the cattle (more especially the Jersey, Ayrshire and Devon thoroughbreds,) which are collected there, all indicate much progress in agriculture. These exhibits would be creditable to Counties whose people depended altogether on the cultivation of the soil for a living. Nobody can look at what we see on this occasion without feeling assured that large tracts of land in this section of the Province are well adapted to the purposes of agriculture.

You possess in such land and in your milder climate and shorter winter, as compared with other parts of Nova Scotia, elements which will tell favorably on your success in this branch of industry. But yet, if I am rightly informed, it is comparatively but of recent date that your people have paid much attention to agriculture. I learn also upon good authority that the past season has been exceptionally unfavorable in this section of the country, and has seriously affected the classes of exhibits in which you particularly excel. If so, you have special reason to be gratified with the result of

your new departure. It shows that you have a valuable resource in lands which hitherto you have perhaps underrated. The people of other parts of the Province, at all events, were not aware you possessed them. We—I speak now of outsiders from this section—we were always aware of the energy and enterprise of the people of this part of the country. We knew something of your history. We were aware that the first hardy adventurers who came to Yarmouth settled on these shores in the same year that the townships of the upper part of the Bay were founded. We knew that your ancestors, like ours, had undergone severe privations—if anything, more severe than ours. We knew that they subsisted for many years largely on the produce of the fisheries, till in a happy moment they, and more particularly the people of this County, discovered and entered upon an industry, for which its situation and surroundings admirably adapted it. We knew that they engaged so actively in this industry that before long the sails of their ships whitened every sea. We knew that they were carriers for all parts of the world, and that by-and-bye the time came when the little seaport of Yarmouth, in this distant Province of the Empire, could boast of a mercantile marine greater than was owned by the entire Kingdom of Scotland at the time of the union. We knew that from this business streams of wealth poured into this County till it became probably the richest County in the Province, outside of Halifax. Of this wealth we have the evidence, printed in capital letters, all over the western shore. We see it in the fine houses you inhabit, in the lovely grounds that surrounds them; we see it in the air of comfort which enshrines every dwelling we pass in travelling through the County.

The other day, in coming from my country residence at Truro, I travelled as far as Kentville with a gentleman who, of all the men in Nova Scotia, is probably the best qualified to form a correct judgment as to the character of an exhibition. I speak of the learned Secretary of the Board of Agriculture, whose experience runs over so many and so varied a series of Agricultural Exhibitions. I knew that I could not be here in time to take a view for myself, and therefore I asked him to look around on the exhibits and give me some hints as to their character. Dr. Lawson was kind enough to undertake the work. He has handed me a report, which gives so graphic and valuable a statement of what is interesting in connection with the exhibition, that I would not be doing justice to that gentleman if I appropriated to myself the observations he has made, and I would not be doing justice to you if I were to deprive your exhibitors of the benefit of a certificate stamped with Dr. Lawson's

high authority. Dr. Lawson reports as follows :

The Yarmouth County Agricultural Society numbers 250 members, and is without exception the largest society in the Province. It has been actively engaged for fifteen years in introducing new implements, new varieties of vegetables and fruit, and for fourteen years past annual exhibitions have been held, at which latterly a sum of about \$1,000 is expended in prizes. This year the prizes offered amount to \$2,000. Although this is a District Exhibition embracing the Counties of Digby and Shelburne, as well as Yarmouth, yet the exhibits are chiefly from this County, and it is mainly through the energy of those members who are within convenient reach of the town that the exhibition is being carried out. Still there are some very creditable exhibits from a distance, and a few from other Counties. Some years ago the broad principle was adopted of opening the competition to all.

The improvements in Stock have been undertaken chiefly with a view to the dairy, and excellent Jerseys have been introduced, as well as Ayrshires, and at an earlier period Devons from New Brunswick.

The cultivation of the finer kinds of hot house grapes in cold graperies has been pursued for some years in the town with marked success. The vineries of the Hon. L. E. Baker, Capt. Hugh Cann, Capt. George H. Lovett and S. Killam, Senr., being specially noticeable. The general taste for horticulture is rapidly extending, as may be seen by the improved grounds and gardens around the residences, which are protected by trim hedges of spruce and English hawthorn.

The fruit tables show as fine apples, in several varieties, as can be seen anywhere. These are mostly from inland districts, but even on the sea-shore there are some kinds that flourish more luxuriantly than in the warm valleys of Annapolis. The Keswick Codlin (a very useful household fruit long held in esteem in England) is laden with beautiful fruit in the gardens around Yarmouth Harbor, and Grime's Golden Pippin, from inland localities in this County, have been shown at some former Provincial Exhibitions of a finer quality than from any other part of the Province.

The exhibits of Dairy Stock, of field roots, of garden vegetables and of dairy produce, all show that there is every prospect of reward to those who engage in improvement and extended effort in these departments.

Yarmouth has been hitherto dependent for water supply upon springs and public wells, but within the last year the water of Lake George, nine miles from the town, has been brought in by a system of iron pipes, and has not only conduced to the comfort of the inhabitants, but is calculated to improve the sanitary condition of the place, to give protection from fire, and especially to lead to the extension of certain manufactures. The Woollen Factory is now in active operation, and business, which has for some years been very much depressed, is rapidly reviving. The railway is bringing in heavy trains of deals, spars, ship timber and other forest and mill products. The passenger travel on the railway has greatly increased, the facilities afforded by semi-weekly trips to Boston and Portland giving a large through traffic.

The Society has made special efforts by premiums and otherwise to stimulate farmers

to the growth of grain, and to experiments on the most productive varieties. One result is that four grist mills have been established. One exhibitor has this year raised forty bushels of wheat from three pecks sown. The increase of the growth of grain within the last few years has been from an inconsiderable quantity to many thousands of bushels.

There are at present four sea-going steamers lying at the wharves."

To the people of Yarmouth, much of the information contained in this valuable summary is already well known, but as the proceedings of the day will be scanned by people who do not belong to the County, I am quite sure a large part of what this paper contains will be new to the rest of the Province, and will afford evidences of a very gratifying character to those Counties in which Yarmouth is known only as a large ship-building and ship-owning community.

This Exhibition is only Sectional, but it is to be followed by one that is to be Provincial. The one, therefore, may be considered as preparatory to the other; it gives the opportunity of comparing notes with one another, of testing your strength in your own neighborhood. When you have done this you will find what there is among you that is most likely to bear a more extended competition. The Sectional Exhibition collects the people in each locality. It lets them see what otherwise many of them would fail to see—the best specimens of produce the neighborhood yields. It helps to interest them in the pursuit of agriculture—to make them aim at improvement. It tends to excite in them a desire to have on their farms the best stock, the best produce of all kinds which it is in their power to grow. If this were a Provincial Exhibition, designed for the whole people, it would be attended mainly by the inhabitants of the central Counties, who have already made great strides in agricultural improvements; while it is really most important that the people of even other parts of the Province, who have made less progress in that branch of industry, should catch the spirit which has already produced such great results among certain sections of our people. If, therefore, the people in the more distant Counties cannot at first be induced to come to an exhibition at the centre, the exhibition must leave the centre and come to them. If the coffin will not come to Mahomet, Mahomet must come to the coffin. When the exhibitors have become interested in the subject, when they have tested their strength and ascertained what are the things in which they excel, they will be better qualified and more disposed to meet at a central exhibition and try conclusions with all comers.

I hope sincerely that the present effort will give a stimulus to the agriculture of

this part of the Province. It is always a great advantage to have more than one string to your bow. If there is any one thing more than another that assures Nova Scotia of a steady and uniform prosperity, not a spasmodic and intermittent one, it is the variety of her resources. In the average which nature always establishes in her arrangements, there may be a failure in one of the several branches of business, but they do not all fail at one and the same time. Disaster may overtake one crop, but it does not destroy all the crops at the same time. If an adverse year occurs in shipping or in ship-building, in lumbering or in mining, in the fisheries or in trade, it will not happen to all these branches of business at the same time. Thus, where the resources are various, there may be a failure of one or more for a time, and still there may remain an average of prosperity and success. No people are so liable to serious reverses as those who are wholly dependent on a single industry. As it is with a Province so it is with a County or city. In the variety of resources consists the most certain assurance of a continuous prosperity. Even now there are many people who affect to fear that the halcyon days of ships and ship-building are over for Nova Scotia. They see or think they see a revolution going on in reference to the ocean highway, somewhat similar to that which has taken place on land. They think that steam is fast becoming the motive power by which ships are to be propelled, and that iron is rapidly superseding wood in their construction. But in the battle between wind and wood on one side, and steam and iron on the other, victory will perch on the standards of the new power and the new material. There is probably much exaggeration in these statements. They may apply only to a small class of shipping, or to shipping engaged in special classes of trade. But whether the statements be true or false, it cannot but be wise in every community largely interested, as many parts of Nova Scotia are, in the shipping business, to have additional resources in other branches of industry.

The Exhibition of to-day and the statements contained in Dr. Lawson's paper, show that your people do not undervalue the advantages of agricultural products. They show something more—they prove that already you not only have achieved some distinction in this pursuit, but that you have engaged in a variety of other branches of industry, independently of that in which you have made such large accumulations. It proves that the energy and enterprise, the business skill and ability, which have built ships; which have competed for trade in the markets of the world, and competed successfully; which have enriched your people and beautified your whole coast, is ready to

achieve success in any other direction to which your attention may be turned.

His Honor then proceeded at some length to show the great advantages which the farmer derives from the cultivation of superior stock. He stated that in the census of 1871 there were returned as owned in Nova Scotia 250,000 head of neat cattle. He said that at the age of 1 year a thoroughbred Short Horn was for the purposes of the butcher as valuable as an animal of the ordinary kind at 3. That every ox or cow consumes in a year at least two tons of hay, to say nothing of pasture or other food. And that therefore in the case of all of these cattle that were three years old, and of the common stock, there had been an absolute waste of fodder, amounting to four tons each, which if saved would be so much added to the wealth of the community.

He entered into similar calculations with regard to milk, butter and cheese, and showed that the same might be applied to poultry and to articles of farm produce; and urged with much force the necessity of introducing into the business of agriculture the same care, calculation and thoughtfulness which, as applied to other branches of industry, had made Yarmouth what it was.

His Honor concluded his address by declaring that in his belief the time was at hand when Yarmouth, with its railway facilities perfected, would be found competing with and carrying off prizes from Counties which were at this moment under the delusion that Yarmouth was a synonym for ships and shipping, but had little or no resources beyond that one branch of business.

WARDEN PAYZANT'S ADDRESS AT THE OPENING OF DARTMOUTH EXHIBITION.

The Dartmouth Agricultural Society, under whose management this exhibition of the products of the soil is being held, deserve no slight commendation for the good it has accomplished and the difficulties it has surmounted. With commendable zeal it has kept up its organization and status through a long number of years over an area of sparsely settled district and a soil not the most friendly and prolific. To estimate somewhat the difficulties of our position let me call your attention briefly to the history of agricultural societies in this Province, and especially along these shores. It is well known that previous to 1818 the condition of agriculture in this Province was almost worse than primitive in its rude appliances and erroneous modes of industry. In that year when Agricola launched his famous letters in the *Acadian Recorder* newspaper he thus describes the husbandman, "The social status of the cultivator of the soil is such as would be regarded

incredible were it not vouched for by competent authority. The cultivation of the earth, that prime fountain of national wealth, and the first and most essential of arts, is accounted so despicable and vile as to be the fit employment only for the unlettered and vulgar herd, and most naturally in the world the gro-siest opinions everywhere prevailed respecting the capabilities and resources of this fine Province. I saw and heard a climate universally spoken against, which was infinitely superior to that of my native country, and which could ripen productions that scarcely lived under glass in Scotland; but the system of husbandry was wretched in the extreme and the profession of a farmer little short of being despised." The letters of this great man effected a complete revolution in the domain of husbandry in this Province. The formation of the Central Board of Agriculture was one of the first evidences of this reform, followed by legislation which set at rest, as far as law could do it, the very uncertain and not very amiable position the farmer thus occupied. The Legislature gave the Board corporate qualities; provided an annual grant to it not to exceed \$8,000; committed to it the duty of organizing county and district societies and the distribution among them of the Provincial grant, and such other jurisdiction over the whole agricultural industries of the Province as would tend most efficiently to elevate, improve and ennoble the vocation of the farming classes and foster among them something of an *esprit de corps*.

The speaker went on to give in detail the duties assigned the county or district societies under the Act. Under the provision of this enlightened legislation and through the indefatigable labors of men like Dawson, Forrester, and a host of others, societies sprang up all over the Province, and this Dartmouth society in due course came into existence also. It is not a very difficult task to organize a society for any purpose. There is generally plenty of enthusiasm at the outset. No want of talk, no lack of supporters with good capacities for long resolutions, and no lack of respectable membership, but is there any one who doesn't know that the very hardest thing societies have to do is to keep alive. Birth and decay go on in these bodies with all the regularity those phenomena appear in the animal and vegetable kingdoms and no legislative act can really give them a corporate and perpetual existence, no matter what the words may import—the enthusiasm oozes away, little squabbles perhaps creep in and the body as a body becomes defunct. You will find the same inherent weakness in all other societies, whether they be Freemasons, debating societies, or temperance societies, and even religious societies possess no certain immunity from

the evil. I can well understand therefore the metal this society must have been composed of, requiring as it has done no ordinary pluck and determination to resist the tendency to decay and to keep up the status and qualification necessary to ensure its share in the annual distribution of the Provincial grant. He then proceeded to point out the causes of discouragement this society had in comparison with those in districts where the nature of the soil permitted greater variety of subjects, greater scope for investigation, such as keep the interest sustained and stimulated associated effort. The men of the Bay of Fundy counties, the owners of the rich dyke lands, which might be cropped for one hundred years without top dressing, where, according to the well known proverb, you had only to tickle the ground with your hoe to make it laugh, were naturally attracted towards any reunion affording opportunities for the discussion of new processes of culture which they could so readily apply to a generous and prolific soil. Not so the poor agriculturist who along this stormy and rock-bound Atlantic coast, had not only to stump the land, but sometimes to spend a year or two with the rock before he could even see the land. It required no ordinary courage even to settle on such scanty soil, not to speak of agricultural societies and exhibitions. But *labor, toil, industry*—that wonderful talisman that transforms the desert to a garden—spread even these hill slopes with broad acres of richest verdure and abundant yield, cheering the heart of the husbandman, and making it possible in the face of all difficulties for societies like these to thrive and flourish here. Following the formation and healthy operation of societies came the holding of exhibitions. It was foreseen by the pioneers that the bringing together of products of the soil, comparing, criticising and adjudicating on their respective merits must necessarily result in stimulating to a higher productive industry by their competitive efforts. We who stand in this day on the vantage ground of experience can easily understand what potent factors in agricultural enterprise exhibitions are. From the worlds great Fairs at London, Paris, Philadelphia, Berlin, down through such ones as those of Melbourne, Montreal, Toronto, to our modest little one here, there is apparent the settled conviction of the age that all industries are promoted by this means. Some might think coming here a waste of time, a trouble, an unnecessary expense and an unremunerative labor. Some would pool it, be conspicuous by their absence, believing that what was good enough for their fathers was good enough for them. But one of the stupidest things stupid men do is their refusal to adapt themselves to the times in which they live. We may think

the course of events around us are all going in a wrong direction, but we generally find they are bound to go. Neither you nor I can stop them. If we don't get out of their way we will be crushed; if we doggedly stop we will be left far, far in a cold and lifeless rear. He advised all to keep pace with the times, trying to utilize what seems good in the inexorable march of events and to avoid what seems pernicious. He pointed out the many evidences that in almost every department of labor there is to be observed a change of the relative positions of the contending parties. I believe lawyers and doctors are about the only classes in society that try to stem the current and hold on to the old anchorage, but it is just possible that even they may have to take to sending out canvassers and drummers to catch the client or patient who will not come to us. In the course they were now pursuing this society was wheeling into line and adopting the now universally recognized methods of promoting the objects contemplated in its formation. He passed on to say a few words as to the prospects and condition of the farming class in this country. The natural inclination was so best to follow one's vocation as to make the pot boil. The higher motive to foster and strive to realize an ideal excellence, to seek to elevate one's profession and to mould it rather than to allow the profession to mould him, is extremely praiseworthy, but I have frequently noticed that when the alternative is squarely presented—one's ideal or his bread—the ideal generally goes to the wall.

The first question we ask ourselves on our farms or at these fairs is the same one Horace Greeley set before himself to solve, and egregiously failed in the attempt, viz: Can farming be made to pay? I believe that the farmers of Nova Scotia to-day are finding a very satisfactory solution of the question. At no time do I believe in the history of this Province has farming proved so remunerative as at the present day. Every product of the soil seems capable of immediate conversion into gold. The opening up of new markets abroad has created a greater demand for almost every article the farmer has to dispose of. Last month a new company of large capital and influential stockholders received a charter for the importation of meat, beef, mutton, veal and lamb, not from America, but from Canada alone, and already, I am told, has completed a contract with responsible parties in this country for the supply of 250 tons of meat a month. The effect of the drain upon this country must of course have two results, one logically following the other. It must raise the cost of living in almost every article that enters into the consumption of every day life, thus pressing unduly on certain classes of the community; but in the second place it must still more stimulate agricultural production, and thus aid in more thoroughly developing what is in fact the great resource and backbone of this country. The farmers, I say, are growing rich in this Province—the Savings Banks

tell the tale. The paying off of old mortgages; the more expensive style of living adopted, all show that they are no longer the hewers of wood and drawers of water they were supposed to be years ago; and as wealth rightly used becomes a powerful lever for social exaltation, for a broader and deeper intellectual training, and a higher moral culture, so should the farming class of this country rise to that influential position in the direction of affairs that is theirs by an undeniable right. I must not leave this subject without a reference to matters of importance which underlie, and must ever underlie, agricultural prosperity. They are, first—habits of industry, honest, hearty toil and sweating of the brow; and secondly—educational discipline—power to use as well as power to acquire knowledge. No man can succeed at farming in this country unless he labors hard—hard manual toil, early to rise and late taking rest is the price of success. There may be other countries where this close personal application is not necessary, but Nova Scotia is not one of them. Amateur farming, the adopting of it as a vocation for ones lighter hours, must be reserved for those who are not making their bread at it. He must have the physical strength, the will, power, and the general habit to work that will not repel him from going personally into the ditch with his shovel, and into the forest with his axe—that will not give the order "go and do the work," but "come and help me do it." I believe that the vice of laziness is the canker at the root of very much of the poverty and apparent misfortune that afflicts farmers as well as other classes. It will puzzle you to name a farmer who works hard and minds his own business who is not more than making the two ends meet. It is the vain effort to get what is called an honest livelihood without giving therefor honest toil, taking the world's wages without doing the world's work, living by one's wits and revolving in idleness cunning schemes to get one's dinner, that must in the end ignominiously fail, as it deserves to do. You may tell as you drive along through a farming district the men who are industrious and plodding and those who take things easy by the appearance of their farms. Why, I have in my mind's eye now a man, not a dozen miles from here, who coming from across the water with nothing but the clothes he stood in, but with bravery and willing arms, settled down on a little patch of gravel and rock so poor—well, I don't believe it could more than feed a goat—it was barren and uninviting to a degree, but he had selected it, and determined to stick to it, and stick to it he did, rearing a large family on it, encroaching year by year on the surrounding wilderness, laying by money from it, until now he is the owner in fee simple and unencumbered in title of smiling meadows and waving cornfields.—Labor truly does conquer all things. But labor after all is handicapped, hampered and grievously wasted without education. A man should be something more than an ox or beast of burden. The hands cannot work advantageously without the mind directs and assists the hands successfully—accordingly as it is itself directed and assisted. Hence the necessity for intellectual discipline even for farmers. The farmer who is not educating his son is doing him an enormous injustice. He is condemning him to a life of servitude—not only to a life of social inferiority which is sufficiently disgrace-

ful, but to that and bondage and incapacity in his life work which most other things being equal, keep him forever at the foot of the ladder, if not in actual poverty. Now there is no necessity as I think for the education of farmers at colleges and universities, although I have yet to learn that such would do them harm; but education, and that not of an inferior kind, is not so thoroughly difficult in the present day by our excellent common school system that almost every farmer's son in this Province can receive a training if he will, amply sufficient for the successful prosecution of his work. A prejudice, no doubt, exists to a large extent against the spending by a youth destined for the rugged work of tilling the soil of a long term at school. It is alleged that the sedentary life of a scholar and the absence for a time of all manual pursuits unfit him for the tougher, and to some extent more solitary, occupation of a farmer. No doubt there is something in the objection when the period of study is prolonged; but I hold that any such apparent disadvantage is amply compensated by the advantage which science affords him in the understanding and treatment of soils, the chemical properties of manures, the introduction of labor-saving machines, the drill and strengthening of the mental faculties, which is important for the farmer as well as the professional man, and the general ability to apply principles unknown to him before, thus increasing the productiveness of the soil and paying him better in the end. But there is a phase in this matter, I think, most unfortunate for the interests of agriculture, caused, no doubt, by the ampler provision in late years for both common school and the higher education, which has had the effect, so it seems to me, of withdrawing from farming pursuits an undue proportion of the farming population, and the last decade has witnessed something like a rush from the rural districts into trade and the various professions. There are men selling tobacco and tea in the towns and villages of the province eking out a scanty livelihood, who ought to be cultivating the waste acres lying almost within gunshot of them. There are lawyers and law students who are pouring over Blackstone, but would be much more profitably employed at the grindstone and hayfield. It seems to have become almost the highest ambition of fond mamma and proud fathers to get their promising boys away from home, away from the farm, away from the ennobling pursuit of agriculture, into a lawyer's or doctor's office, or behind a greener's counter. I think the mistake of all this is already becoming apparent. The inexorable principles of political economy are asserting themselves and people are beginning to see that with potatoes at eighty cents a bushel, beef, fifteen or twenty cents, butter, 25 or 30 cents a pound or so in proportion, it is after all a part of wisdom rather to live in unpretending affluence in the country than starve on respectability in the city.

A New York correspondent of the *London Agricultural Gazette* says cottonseed meal is often badly adulterated by mixing Plaster of Paris, &c., with it. This is a very bad adulterant, as, when taken into the stomach, it will set into solid, insoluble masses.

OPENING ADDRESS BY GOVERNOR ARCHIBALD AT THE CAPE BRETON EXHIBITION, NORTH SYDNEY.

The Exhibition was formally opened by His Honor, Governor Archibald, on Tuesday, 7th October and was a decided success throughout, exceeding the expectations of its most sanguine promoters. With the exception of the third day, Thursday, the weather was all that could possibly be wished for. At an early hour on Tuesday morning masses of people began to pour into town from all directions, and when the time for opening arrived, at least two thousand visitors had entered the building. At 3 o'clock Governor Archibald arrived and was introduced to the Executive Committee, who had assembled at the entrance to the building for the purpose of receiving His Honor, and escorting him to the front gallery, which was neatly carpeted and decorated for the occasion. Here a very large number of ladies and gentlemen, including a number of clergymen representing all denominations, had assembled. After the band had played "God save the Queen," the chairman of the Executive Committee, W. H. Moore, Esq., read the following address of welcome:

ADDRESS.

To His Honor Adams G. Archibald, C. M. G.,
Lieut.-Governor of Nova Scotia:

We, the Executive Committee of the Cape Breton Agricultural Exhibition, now about to be held at North Sydney, for ourselves, and on behalf of the Island of Cape Breton, bid you a hearty welcome.

It gives us great pleasure, as a free born and a representative people, to have at the head of our Provincial Government, a worthy son of our soil, and one who has so highly distinguished himself in the social and political annals of our country.

We esteem it a great favor that you have so kindly responded to our invitation to open this Exhibition, the second of the kind which has been held in this Island.

We trust that the present Exhibition, and the results which may accompany it, will satisfy your Honor of the many valuable means and resources of Cape Breton, and tend to promote their steady development and increased welfare.

We are pleased to find that your Honor takes a great interest in agriculture, which contributes so important an element to the welfare of our country, and trust that your illustrious example, and the aid bestowed by our Government, will tend to its greater advancement and prosperity.

With best wishes for your long life and happiness.

We are, &c.,

W. H. MOORE, *Chairman.*

J. VOOGHT,	W. PROCTOR,
A. G. HAMILTON,	W. PURVES,
K. G. MCKEEN,	A. C. BERTRAM,
M. J. PHORAN,	A. G. MUSGRAVE,
C. P. MOFFATT,	A. W. MCLEAN,
J. A. H. RINDRESS,	J. H. CHRISTIE.

THE GOVERNOR'S REPLY.

Gentlemen of the Executive Committee of the North Sydney Exhibition:

Your cordial welcome is very gratifying to me. I thank you very much for the kind reference you make to the circumstance of the office I now hold being filled by a son of the soil. I wish I could feel myself better entitled to the kind words which you associate with that reference.

I assure you, gentlemen, I have had the greatest pleasure in responding to your call. The boundaries which limit the active exertions of a Lieutenant-Governor under our constitution are so narrow that I have always considered it a duty, as well as a pleasure, to lend my aid and countenance to any object within these limits which can be considered of Provincial importance. It is, therefore, with great pleasure that I have come to you in the extreme east, as last week I went to the extreme west with a similar object.

I did not need to come to Cape Breton on this occasion to make myself acquainted with the resources of the Island. I had occasion many years ago to study the character of Cape Breton, at a time when great questions connected with your future were attracting attention, and from the opinion I then formed, which was that no portion of the Continent of America has a more splendid destiny before it, I have never swerved. It was on that belief and conviction on the part of others as well as on my part that the arrangements were made which leave you free to develop your splendid resources as you may see fit.

I have a right to be attached to agricultural pursuits, I am the son of a farmer, and spent my early life on a farm. The tastes acquired in infancy affect us for a life, and I assure you that day by day, as I grow older, I become fonder and fonder of the industry which lies at the base of all national prosperity.

Let me, in return for your good wishes, express my hope that this Island will continue to prosper and flourish till it reaches the destiny which any one may read written upon its surface by the finger of God in splendid deposits of the most valuable of minerals and large tracts of excellent soil.

ADAMS G. ARCHIBALD

THE OPENING ADDRESS.

Mr. Moore then stepped forward, and, after a few very appropriate remarks, introduced His Honor, who addressed the large audience below extemporarily as follows:

Ladies and Gentlemen,—There is no better way of gaining a correct notion of the great variety of resources which this Province possesses than by travelling, as I have just done, from one end of it to another. The people at the two extremes differ exceedingly. They are of different origin, habits, tastes, employments and modes of living. The route of travel between these extremes traverses some of the finest parts of the Province, and affords the eye a vivid picture of the differences which exist in the employments and industries of our people. In the west, we are in a country settled by a race different from that which founded the settlements in the upper portions of the Bay of Fundy, as they are from the men who first made this Island their home. They knew nothing of

agriculture. They engaged in the fisheries. They built and sailed ships, and soon owned a large commercial fleet, doing a carrying trade in all parts of the world. Thus they amassed wealth and built houses that look like palaces. These appear in large numbers in Yarmouth and its neighborhood. When you leave the west, with its immense shipping industry, you come to a country less engaged in that business, but more occupied in agricultural pursuits. Digby is midway between the western and central counties, not in position only, but in the character of its industries. Then, as you proceed onwards you enter the garden of Nova Scotia, that splendid plain stretching for eighty miles between the North and South Mountains. In this region everything grows luxuriantly, from the coarsest of farm produce to the finest of fruit and flowers. Next we enter the fine county of Hants, with its fertile soil and extensive shipping interest, with its accumulated capital now seeking investment in manufacturing operations. After this you come to Colechester, with its active and energetic population, mainly engaged in agricultural pursuits, but having also large interests in manufactories and mines, with its chief town a railway centre—a town that has sprung up like magic and carries on a large and growing trade. Next comes Pictou, covered from one border to the other by the farms of an industrious and thriving people, a county that has large interests in ships, and which possesses in its immense deposits of coal and iron a certain guarantee of a prosperous future as a great centre of manufacturing industry. The destiny of places where coal and iron exist in unlimited quantities close to a seaboard is only a question of time.

As we proceed eastward you come to a county which is said to be so fertile that every acre of it may be tilled. The traveller needs only to look at the town of Antigonish, its fine buildings rapidly extending in all directions, to understand what kind of a county it is which can build and sustain by its trade such a town for its capital. Next to Truro there is no town in the Province that has made such rapid strides within the last ten years. When passing out of Nova Scotia proper you traverse the splendid sheet of water in the heart of your Island, you see a country which possesses all the advantages of the open sea, and all the shelter of a harbor, you find a water teeming with fish, and navigable for hundreds of miles, you find a soil, much of which is adapted for agricultural purposes, and besides this you find in many parts of your splendid Island immense deposits of coal, which makes you assured of a prosperous future. Some thirty years ago I first saw this Island. I visited the works of the General Mining Association which had then been open for some years here and at Lingan. I travelled from Sydney to St. Peter's, and during the whole visit there was nothing that struck me so much as the air of languor and torpor which brooded over the whole country, with resources which in any part of the world should give life and vigor to a community, everything was dead, the land was badly cultivated, the houses and farm buildings were of the most primitive description, the vehicles were such as were seen in no other part of the Province. But now go where you will everything is bristling with life, mines are opened, and all over the country around each mine a little town has

grown up. Industry is everywhere employed and rewarded, there is an air of business and thrift wherever you go. What has done all this? There are doubtless many causes combined, but there is one which has operated as an important factor in producing this result and that is the throwing open to the enterprise of the whole community the business of working the mines. It will ever be a source of consolation to me that I had some share in bringing about this result. Even Louisburg has been suddenly awakened by the snort of the iron horse, and the first commencement has been made of a trade which will assume immense proportions. This trade will give it a permanent prosperity. It will do more for it than all the sums that were expended on its forts and arsenals, by one of the greatest powers in Europe, when it was treated as the key of the St. Lawrence and North America.

On my way to Yarmouth I lost the opportunity of visiting one of the finest sections of the county of Kings, remarkable not only for its general crops, but also considered the best district for apples in the whole western valley. Mr. Howe, speaking of the charming drive to the westward on a spring day, said there was no other country where the traveller could pass under 100 miles of apple blossoms. But though beautiful to the sight, the trees were not valuable. The fruit was coarse and harsh, and fit only for making cider or feeding pigs. If good apples were required they had to be brought from the United States. By and bye some man, a little wiser than the neighbors, perceived the peculiar adaptation of this valley to the growth of any kind of apples, and began to experiment on budding and grafting with a view to introduce superior classes of fruit. The experiments were highly successful. Orchard after orchard was redeemed from degradation, and the trees furnished with fresh heads bearing crowns of golden fruit. Soon new orchards were planted with the best kind of trees. Societies were formed which diffused the taste for and love of orchard culture. Nova Scotia apples began to acquire a fame abroad, and before long it was found that there was no better apple in the world than was grown in our western counties. Such has been the growth of this business that steam vessels are now employed to carry the fruit abroad. A splendid wharf is that at Annapolis. On it is a warehouse to accommodate the trade. Also at the same place a brick building is now being erected of dimensions to contain 20,000 to 30,000 barrels of apples, and so built as to be quite frost-proof. The railway, the whole length of the valley, carries all the produce not required for domestic purposes to Annapolis, where, stored in safety and protected from frost, it can be shipped at any season. Old Annapolis has waked up after a sleep of over a century, and the whole of our western valley is feeling the effects of the new business; and yet nearly all this change is due to the happy thought of substituting a superior for an inferior class of fruit. But for this the orchards might still have groaned under their useless loads. The same care and the same cost would have been required, but without the same return. There would have been no wharf or apple warehouse at Annapolis. There would have been no frost-proof building to protect the tender crop, and no steamers to carry it away to a foreign market.

Now, you will ask, what has all this to do with us? I will tell you. I do not know whether your soil and climate would permit the successful growth of fruit; but whether fruit will grow or not, there are many things that will grow, and that could be grown with great success here. Take for instance cattle. You see them on every hill-side as you sail through your splendid lake. Every steamer which finds its way from one port to another is laden with them. You send great numbers of cattle to a market which ought to be exclusively yours. Newfoundland does not raise, and cannot raise, cattle. What she wants you can supply. But it may well be doubted whether the people of this Island can retain that trade or any trade in cattle long, unless the stock undergoes some considerable improvement. I have seen in your steamers cattle going to market, where the 3 year old were not larger than yearlings ought to be. A good short-horn Durham in a single year will weigh as much as the average of these three-year old. Up to that age ordinary cattle make no return, except their manure, which is dearly paid for by the care and labor required in attending to them. There is therefore a total waste of the fodder of two years out of three. Count the cost of this fodder which, without speaking of summer, cannot be less than four tons for the two winters for each animal. This will foot up a total so startling that one can only wonder at people continuing a business which causes so frightful a waste. This amount of money might just as well be thrown into the sea; and perhaps it is a proof that there is profit in other branches of farming, else people could not live at all while practising such gross extravagance.

The revolution in the character of stock is going on rapidly in Nova Scotia proper. The effect of improved breeding is everywhere perceptible. Thoroughbred Durhams, Ayrshires, Jerseys, and Devons are to be found in every part of it. Grade cattle, in which the blood of one or the other of these breeds is mingled are spread everywhere, and yet it is only a few years since the improvement began. At this moment may be seen in the little town of Yarmouth, which has never been considered as an agricultural county, more thoroughbred cattle than ten or fifteen years ago were to be found in the whole Province. The exhibits of butter there last week were most excellent. You will be amazed to learn that, in the opinion of a competent judge, the butter shown on that occasion was in the quality and variety of the exhibits equal to what he saw at a recent show of the Royal Agricultural Society of England.

Not many years ago an active and enterprising Nova Scotian established a business in a large town in the United States. After a while he found the climate too trying for him and moved to the country, where he set up a dairy farm, which he has since managed with extraordinary success. You may judge of the reputation which he has established for the produce of his farm when I tell you that his butter brings a dollar a pound in the market, and that he can find a market for all he can make. This gentleman sent to the Exhibition at Yarmouth some samples of this butter. It was certainly of excellent quality; but it would have required a very skilled expert to detect the difference between it and scores of samples of the article made in Yarmouth. I had the pleasure of

receiving a couple of small boxes from the same gentleman, which I opened at my own table at Truro, when it was surrounded by several gentlemen well qualified to form an opinion of it. They compared it with some samples of butter made from my own Jerseys, and I was proud to be assured that my butter did not suffer by comparison with so high a standard, but, even allowing for a little partiality, it is gratifying to know that we can come within a measurable distance of our distinguished countryman.

Now, as regards stock, it will be absolutely necessary for Cape Breton to adopt improvements. It cannot remain stationary while Nova Scotia proper is advancing. If we grow better stock, if our beef costs less than it costs you, we shall be able to supplant you in any market. We shall make a profit by the same transaction which will cause you a loss. If you spend three years in attaining the result which should be reached in one, if you waste in fodder over what is required to produce a given amount of beef, which if sold would be equal to the price of the animal when taken to market, it is clear you are carrying on an unprofitable trade. How can you compete with men who are making a profit on every occasion in which you are suffering a loss?

It is a very common thing to deride book-farming. If it is only book-farming, it is a legitimate subject of derision. But if a farmer uses his eyes, if he cultivates a habit of observation, if he treasures up the occurrences which take place in his neighborhood, this is all-important. And if he adds to what he has observed himself what others have observed before him, which he can only get from books, he is likely to have a more thorough knowledge of his business than if he depended altogether on what he has seen himself. A dwarf on a giant's shoulder can see further than the giant himself; and what can be learned from books is really gigantic in comparison with what any one man can find out by his own experience. Add to that what he sees for himself, and he will be a model farmer.

But besides observation and study of books, my experience leads me to believe that there is one element more than any other essential to the success of a farmer, and that is untrusting industry. The man who is to make his living by farming in this country must be up early and late; he must have his eyes open; his barns, his fences, his agricultural implements, his manure heaps, his plants, his mowing and reaping, his housing and storing, all require watchful care and attention, and afford scope for constant employment. He should know that his gains depend on saving as much as on making. Little things is what create failure,—doors off the hinges, barns insufficiently covered, fences down, implements out of order when wanted, a visit to the carpenter or the blacksmith for repairs when it should be to the field to reap or mow, losing any opportunity for housing the crop, leaving the oats in the field till they are ripe, to mow them just before a storm, and to rake them after half the crop has settled on to the ground, leaving the roots in damp cellars or in cellars not protected from frost, these are the things which insure failure. We are sometimes told that a farmer has been unlucky. Any person may have a single stroke of ill-luck, perhaps a second, but depend upon it, continuous ill-luck is nothing else than continuous bad management. Be-

sides industry, there is wanted care and forethought. These requisites of a person's life ought to raise him intellectually. It is the exercise of these qualities which make the difference between a civilized man and a savage. I have seen in our western wilds a band of starving Indians fall in with a herd of buffalo, they soon bring down one or more, and then begins a feast. While the carcasses last, the Indian gorges himself, when they are eaten he waits till he is again hungry before he thinks of a provision for the future. With him life is an alternation of starving and gorging, of feast and famine. He has no thought of the future; he lives from hand to mouth. There is something of the same kind in all hazardous and spasmodic occupations. In a good season a fisherman makes in three months enough to keep him all the year round, he works hard for the three months and is apt to loaf the rest of the year. A lumberer goes to the woods and in a very short time has enough to buy himself a barrel of flour, but when the flour is bought he is very apt to idle away his time till the empty barrel suggests the necessity of another effort. Take the fisherman and lumberer, at intervals of 20 years, and you will find that the condition in which they are in the end is much the same as it was in the beginning. Poor at first they remain poor to the last. But with a farmer it is, or ought to be, other wise. His industry is continuous, not intermittent. There is not a day in the year, or an hour in the day, in which he cannot find something to do, something that he ought to do, to forward the objects of the farm. His business for a large part of the year is forethought. To make provision against what might happen, to act and think like a man. This it is that will advance any community.

You have now a just source of pride in the consideration that yours is the third town in the Province as regards population. You have advanced to the position with great rapidity. You owe it not to accident, which as it may be favorable, may also be adverse. You owe it to your being extensively engaged in an industry which cannot fail. You owe it to the inexhaustible supply which you possess of that which lights and heats, which furnishes labor and creates a force which is a substitute for labor.

As I strolled through your streets this morning, and saw lying at your wharves or moored in the stream, some seventy sail of vessels of all sizes engaged in the coal trade, I began to appreciate the advantages you possess in the centre of the coal region. You have another advantage in having men among you with energy and enterprise sufficient to deal with such a position. I look forward with certainty to the day, and that no distant one, when Cape Breton will be what its resources entitle it to be, and when this town shall grow to dimensions suitable to its position in the centre of this fine county.

I feel it but due to the gentlemen who have taken a prominent part in getting up this exhibition, to congratulate them on the great success of their efforts. They have shown that the same talents for business and for organization which has ensured their success in private enterprise will, when applied in any other manner, lead to the same results. The exhibition building is itself a credit to your public spirit, and is a fitting accompaniment to the fine warehouses and stores that line the streets of your town.

ADDRESS OF PROFESSOR LAWSON AT THE CLOSING OF THE CAPE BRETON EXHIBITION.

I cannot help contrasting the Sydney of to-day with the Sydney which I saw on my previous visit. The first act of the Central Board of Agriculture, when organized in 1864, was to take active steps to organize societies in Cape Breton. Successful meetings were readily obtained in several parts of the island, but at Sydney and North Sydney nearly a fortnight was spent in knocking at the farmers' doors before a dozen could be got to meet together to avail themselves of the encouragement offered by the Legislature. Fortunately a few gentlemen in this neighbourhood were not dismayed by the general indifference, but nobly exerted themselves in organizing societies, believing that bread cast upon the waters would return after many days. The seed then sown has been successfully nurtured in succeeding years by some of your leading men, by growing interest among the farmers as a class, and by an increased overflow of golden fertilizer from the Provincial treasury; and we have now the full blossoming out of the lotus flower in this magnificent exhibition. I have but to refer to the business activity around the wharves, the forests of masts in your harbor, the extensive warehouses and stores and the elegant residences that are now mirrored in the Sydney basin, to this splendid and substantial hall, filled with useful and ornamental products of the fields, gardens and factories, or to the animated display of horses, cattle, sheep, pigs and poultry in the adjoining grounds, to remind you of the immense improvements that have taken place, and not here alone but over a large portion of Cape Breton.

On landing here I was agreeably surprised to find this splendid iron roofed building, 180 feet long by 80 feet wide, with a cattle square nicely sheltered by a high close fence, and measuring about 120 yards each way,—and the whole accommodation thus afforded fully occupied by exhibitors. The cattle and horse stalls have in fact proved scarcely adequate. Who would have anticipated ten or even two years ago that there could have been such a display as we now see. All this should stir up our farmers and manufacturers and merchants to increased energy and intensified perseverance. It would be hopeless in the time at command to refer in detail to the splendid exhibits, to the great cavalcade of horses and the large herds of cattle. Cape Breton ponies have made the name of the Island a familiar stable word in the mouths of horsemen all over the world. And now there is fair prospects that your dairy cattle will earn a good reputation.

The Ayrshires and Jerseys, and the grades of these breeds are not only far beyond in numbers what could have been anticipated, but they give evidence of care and consideration both in selection and treatment. There are good sheep, but still room for improvement as for extension of pasturage.

The judges report:

"Whilst the pure short-horns are few, there are several good grades. In Ayrshires the number of animals shown in competition for nearly every prize was particularly large, and we had considerable difficulty in arriving at decisions. In Jerseys, likewise, both pure and grade, it was only after careful examination and comparison that conclusions were arrived at. The Devons showed well. Upon the whole, we consider the exhibit of thoroughbred cattle and special grades highly creditable to the Island of Cape Breton, and as affording evidence of rapid advancement in the improvement more particularly of dairy stock. We hope that at future Island exhibitions the short-horn Durhams and other breeds adapted for producing first-class beef cattle will be as well represented as the dairy breeds are on this occasion."

The pigs shown are few in number, but good growthy, or well-grown animals of their breed, the large white, well adapted for bacon and packing. It will be necessary, however, to get Berkshire blood before the best hams can be grown in Cape Breton.

The poultry exhibits are imperfectly seen, from being contained in low boxes standing on the ground, and the ladies and young people could scarcely reach them for the mud. I saw the same thing at Toronto many years ago. Pardon this hint, and also the suggestion that a dairy-room, ventilated and protected from the dust, would be a great improvement.

The large exhibit of very superior woollen fabrics from the Glendyer mills, showing such a rapid advance since the Baddeck exhibition, is a challenge to our sheep farmers that they ought not to neglect. Whichever way we turn in the building or grounds we see evidences of advancement, extension and improvement in everything exhibited,—in the products of farm and factory alike—grains, roots, butter, fruit, flowers, poultry. Whether we turn to the products of the tanneries or the shoe factory, with its excellent samples of work, or to the carriages and sleighs and agricultural machinery, ship models, home manufactures, ornamental work, spinning and knitting, the beautiful ash furniture of the North Sydney factory, of the boxes of fish or barrels of mackerel, we see in all evidences of industry and progress. Only one kind of stock remains unimproved. I refer to the goats that wander about among the logs on the wharves. They are the one forlorn living antiquity of the place, the same now as eighteen years ago, and are not repre-

ented in this exhibition. North Sydney is still behind the great city of London, which has a Goat Society, with Earls and Marquises at its head.

With respect to the carpets, homemade cloths, yarns, knitting, and the wonderful array of ladies' fancy work in lace and silk, and fabrics that I shall not venture to name, I can only do as so many men have done within the last two days—look on in silent admiration. The lace handkerchief is simply a web of woven air, requiring a microscope to reveal its texture. The fretwork in more substantial material also shows delicacy of execution as well as beauty of design.

As regards orchard culture: Plums form the staple fruit crop of Cape Breton, and one which promises profitable returns to every cultivator. But this is not a plum season anywhere, and we miss this portion of what would otherwise have been a very interesting exhibit. But the show of apples is good—about 220 dishes of fine looking fruit—and it demonstrates how well your climate is adapted for many varieties. Kinds that grow best in hot, dry inland localities are not to be expected here, but no doubt some of the English and Northern European sorts will do better here than in Cornwallis or Annapolis. At Yarmouth, where the atmosphere has the sea moisture like Cape Breton, I saw the finest trees of Keswick Codlin that any fruit grower could desire to see, laden to the ground with beautiful fruit, and the Grimes' Golden Pippin from that county took first prize at a recent Provincial Exhibition.

Potatoes, beef and butter may be more profitable than apples in Cape Breton, but no source of wealth should be neglected; and, as Mr. Smith pointed out last night at the farmers' meeting, nothing conduces more to keep the boys at home than the pleasant surroundings of apple orchards and cherry blossoms, and other sources of comfort and pleasure peculiar to country life, which we are so apt to overlook in the pursuit of mere gain.

The display of plants and flowers is very attractive, but represents, I am told, very imperfectly the floral riches of the District. It is a pleasing evidence of the hardness of your autumn season to see so many tender flowers, such as gladioli, callias, salpiglossis, sweet peas, hollyhocks and dozens of others blooming so long after they have been cut down by frost on the mainland of Nova Scotia. The collection of ferns has disappeared, in accordance with the old tradition noticed by the poet, that the fern has the power of giving invisibility. In way of consolation to the exhibitor and information to visitors, I may mention that it consisted of very fine bright green fronds of *Aspidium dilatatum*, *A*

crisatum, *Dicksonia punctilobula*, and *Osmunda cinnamomea*. The very rare ferns of Whyecomagh and Smoky Cape were not shown.

It was with a feeling akin to amazement that I saw the exhibits of butter at Baddeck two years ago. The butter ball that was then set rolling has increased like a snow ball to twice its original proportions, as we see at this exhibition, where there are about 140 tubs, crocks, baskets and jars of excellent butter. Butyric acid can still be scented in a few of the samples, but they are wonderfully few for such an extensive exhibit.

The American musical instruments and sewing machines, although not of Island manufacture, have added greatly to the interest of the Exhibition, and the exhibits of the Gates' Organ and Piano Company appeal to us specially as manufactures of our own Province.

Among the more important exhibits from abroad, the stoves from Yarmouth and Londonderry are conspicuous, and the glassware and oil tanks from New Glasgow,—whilst such home exhibits as the horse power and fanning mill from Boularderie show that machinery such as has been often imported from a distance may be made at home of as good quality and at as low a price. The best way to encourage home manufactures is for neighbors to buy them.

The secret of agriculture of any country is to produce those products for which its soil, climate, capital, labor, markets, and other economic conditions, render it most suitable. The large proportions of Ayrshire and Jersey cattle and the splendid show of butter indicate a growing tendency towards dairy farming. This is not to be wondered at, since Cape Breton has the conditions necessary to a remarkable extent. The abundant pastures give the material for a full flow of summer milk. The comparatively cool atmosphere is favorable alike to the health of the cows, the milk secretion, and the manufacture of an excellent quality of butter. The home manufacture of butter can be as well performed on a small farm as on a large one, or in a factory, which is not the case with cheese. Thus there is every inducement to extend the production of butter. The improvement in its quality of late years has been very remarkable, and yet, when we consider the conditions, we see that bad butter in the country can only be the result of ignorance or gross carelessness. I have placed on the Exhibition tables a sample of butter from the Echo Farm, Litchfield, Connecticut, every pound of which is sold for a dollar. No inferior butter ever leaves the Echo Farm dairy; the butter is made with very little salt, and otherwise to please the

customer, it is always regular in character; the customer thus knows exactly what he is getting when he sees the Echo monogram on the butter pat, and is willing to pay accordingly. Now, from what I have seen at the Exhibitions—at Baddeck two years ago, at Truro and Yarmouth this year, and now at North Sydney—I believe that Cape Breton butter is rapidly rising to the top of the market in America. It is well worth while to strive for this position. Let us continue to improve our dairy stock, to be more and more careful in butter making and butter salting; let butter merchants strive to place the best qualities in the best markets, and encourage their production, and in course of a few years the butter manufactured in Nova Scotia may rise to an importance that is scarcely dreamt of at the present time, great as it is even now. There are wide stretches of land lying idle in unprofitable woods that might, with but little exertion, be converted into fertile dairy pastures. The method is simply to chop and burn, and sow on the ashes, after they have been washed with rain, suitable grass and clover seeds. An acre or two thus treated every year will soon give a large permanent pasture and yield more profit than any other part of the farm. It has been clearly shown that, whilst in soils under actual cultivation there is a rapid draining away of the combined nitrogen—the most valuable constituent of fertility—on the other hand the whole tendency in grass lands is to maintain and increase their nitrogen. Sir J. B. Lawes found, at Rothamsted, that 9 inches of pasture land, (sifted mould) yielded 5,700 lbs. of nitrogen, whilst corresponding arable land contained only 3,000. A pasture, if not overstocked, may thus be readily maintained in a productive state. But it must first be seeded properly, for its value as pasture, as well as its power to retain nitrogen, depends upon its being covered with a crop of suitable herbage. One point is more important than all others. Encourage the native grass. The most valuable plant we have is the danthonia, which grows naturally all over Nova Scotia; it gives the first bite in spring time and the last in late autumn, and yields herbage all summer. As a pasture grass it is more valuable to us than timothy and all the clovers, but we cannot buy its seed in the store. It must be preserved by carefully protecting it from burning.

Of all crops raised on the farm that which would appear to be the most important, from the samples shown at this exhibition, is the potato. On the first day of the exhibition, before the exhibits were all placed, I counted 192 separate samples of potatoes, mostly half-bushels. There were 13 half bushels of Early

Rose, 28 of Prolific, 9 of Garnet Chili, and smaller numbers of Champion, Jackson White, Andrews, Early Bucks, Blues, Trophy, Flourball, Dunman, Early Ohio, Calico and Chicago Market. But the variety of potato that especially attracted my attention was the Cape Breton Black, of which there were no fewer than 37 half-bushel samples, besides smaller quantities in collections. This is evidently a very superior potato and well adapted for general culture here, the samples presenting remarkable uniformity, more so than any other variety. I am told it is a good table potato. It must also be a profitable potato for stock, and might be largely grown and largely used for dairy cows, for which no food is more suitable in the winter season. But this potato appears to be known only in Cape Breton, where, I believe, it has been grown since the early part of the present century. When new and unknown potatoes are being commonly sold at \$4 or \$5, or even \$10 or \$20 a bushel, it may be worth while for some enterprising potato grower to introduce the Cape Breton Black to the rest of the world, at a suitable price. The yearly increasing difficulty of growing potatoes in most other countries should greatly encourage their production in Nova Scotia, where they suffer so little from the potato disease, and not at all from the Colorado beetle, if we except sporadic cases of its apparent introduction temporarily in grain. With respect to the potato disease, we know enough of its character to enable us to greatly mitigate its effects, if not to avoid it, even in the worst seasons. The disease is caused by a minute fungus that grows as a parasite upon the potato. It first forms brown and afterwards black spots or blotches on the leaves, the fungus there yielding myriads of microscopic seeds or spores. These fall upon the tubers that are exposed, and upon the soil, and are washed down to the buried tubers; they grow and penetrate the skin of the potato and thus set up the disease in the tuber. Mr. Janson, a European experimentalist, has based, upon these facts, first fully observed by himself, a simple method of cultivation which is said to effectually prevent disease in the tuber. He moulds up the drills to such an extent (in the late period of growth) that the tubers nearest the surface are covered to the depth of a few inches; the spores are thus not able to penetrate to the potatoes, or, if they do by heavy autumn rains, they have not the power to germinate and grow when excluded (as they are at such a depth) from air. Then, in regard to lifting, the potatoes are not dug till two or three weeks after the complete withering of the leaves in the field. If taken out earlier they will be covered

with millions of spores from the potato tops, and about a week after lifting they will show the disease, for it takes the spores that time to germinate and develop the disease at a temperature of 62°. With a temperature of 72° it is developed in five days. With lower temperature it takes a longer time. Rainy weather favors the disease, because it washes down the spores and they adhere more readily to the wet potatoes. Potatoes with a thin skin allow the spores to penetrate easily and are thus more liable to disease. Thick skinned potatoes are less permeable, and thus resist the disease better. The Cape Breton Black appears to have a tough, leathery skin in all the samples I have examined except one, and in that sample the skin was very much peeled, showing that the potatoes had been taken up before they were fully ripe. There is always a great loss from early digging, except where the potatoes are very rapidly dried and not stored in quantity. If the potatoes are moulded up at the close of the season to 5 inches, so that the rain causes the earth to settle to a depth of 4 inches above the potatoes nearest the surface, that depth will, it is said, effectually protect the tubers. The cut surface of a tuber is more readily affected, and thus cut potatoes spread the disease. By delaying lifting the weather gets cooler, and the fungus develops less rapidly and energetically. If any one doubts the above facts let him cut a potato, shake diseased tops over it, and leave it under a tumbler for a week; the disease will certainly develop. A cut potato placed under a tumbler without spores shaken upon it will remain sound.

I wish I could correct a false impression that prevails here, that your season is too short for agriculture. I see no evidence of it, for all your crops are as well ripened as anywhere else. But you make your season short by leaving your sod ploughing till spring instead of doing it during your beautiful autumn weather. As regards the cultivation of roots and the growth of hay and pasture, no upland fields on this continent can excel those Cape Breton. This capacity is the real source of agricultural wealth—a mine that everywhere lies within nine inches of the surface. But you are exposed to bleak sea breezes that destroy tender fruits and flowers. Who is to blame for this? I visited Yarmouth last week, and found that there, as around the shores of England, every dwelling and orchard and garden, and many of the farms, are surrounded by sheltering hedges and strips of wood. The white spruces with which nature covered this North Sydney peninsula, forming a most perfect protection, have been cleared away and the land exposed to every wind that blows. Imitate nature, replace the

sheltering spruces, which no sea spray can affect, and you will achieve the same results here as have been reached in Yarmouth and England.

Permit me, in conclusion, to express the great pleasure and satisfaction I have experienced in visiting this Exhibition, and to thank the many friends whose kindnesses have, in so many ways, conduced to make my visit so thoroughly enjoyable.

MANITOBA STOCK-RAISING.

PRIZES OFFERED BY THE BOARD OF AGRICULTURE.

To the Editor of the Journal of Agriculture:

SIR,—Allow me to state through your columns that the Board of Agriculture has decided to offer prizes of \$50 and \$25 respectively, or medals of equal value, at the option of the successful competitors, for the best and second best essays on the capabilities of Manitoba for stock-raising. The stock to be treated of are horses, cattle, sheep and pigs, and any other animals which competitors may think worth considering from an agricultural standpoint.

Competitors, while at liberty to use their own discretion to a large extent, will be expected to deal particularly with the following points:

1. The adaptability of the Province generally for stock-raising.
2. The peculiarities of different sections and their special adaptability to particular animals.
3. The various breeds of the different animals mentioned above, and their respective adaptability to the Province.
4. A history of stock-raising in the Province from 1870 to the present time, with a general enumeration of animals and breeds thereof already introduced, and their freedom from disease.
5. The best method of wintering stock.
6. Cost of production.
7. Profit realized from home and foreign sale, with special reference to future exportation.

The greatest possible conciseness compatible with explicitness is expected. Each essay must be marked in the left hand upper corner of the first page with a distinctive motto. The same motto, together with the writer's name must be enclosed in a sealed envelope, and forwarded with the essay. This envelope will not be opened until after the award of prizes. Essays will be received by me up to 6 p. m. on Saturday, December 30th, 1882.

Yours, etc.,
ACTON BURROWS,
Sec.-Treas. Board of Agriculture.
Winnipeg, Oct. 2, 1882.

A SALE OF THOROUGHbred STOCK took place on the Provincial Stock Farm of New Brunswick on the 18th October. There were probably 150 gentlemen present. The prices realized were as follows:

Ayrshire Bulls.

- DONALD, calved 16th Oct., 1881. Bred by J. Meikle, Bathgate, Scotland, purchased by N. Inch, New Jerusalem.\$125.
- GLENAVON 2nd, 19th Oct., 1881. Bred by J. Allan, West Maws.—Addington Ag. Society, Restigouche \$100.
- SANDY, 13th Nov., 1881. Bred by P. Browncastle, East Kilbride.—Addington Society \$85
- McDUFF 2nd, May, 1880, from Wigtonshire,—Agricultural Society, Gloucester \$100.

Ayrshire Heifer

ROSE, from Hugh Morton, Avondale,—Addington Society \$90

Polled Angus.

- KNIGHT OF THE VALE, (1823), suffering from asthma,—C. J. Osuan, Hillsboro' \$50
- HAMMOND, 10th Sep., 1881. Bred on the Stock Farm,—Wm. F. George, Sackville \$100.
- HEIFER CALF, bred on the farm,—Westmoreland Agricultural Society . . . \$71.

Red Polled Norfolk.

- BULL WOLESLEY, 27th Sep., 1881,—J. McAlmon, Albert County. . . . \$125.
- ARABI, 10th May, 1882,—Gladstone Society, Co. Sunbury \$70
- HEIFER MAPLETON, 15th Feb., 1882,—Gladstone Society \$100.

Hereford.

- BULL CALF BIRCH,—J. L. Inches . . \$50.
- LOW VIOLET 12th, 18th June, 1880,—Wm. McLeod, Sackville \$75.

Short Horn Durham.

HEIFER CALF FLORENCE, July 2nd, 1882, retired at the upset price of \$60, as \$5 was the highest bid received. Leicester and Shropshire Rams and ewes sold at from \$15 to \$30. Border Leicester, \$20 to \$5. Costwold, \$11 to \$16. Berkshire Swine, \$6 to \$22. After the sale the Joint Committee of the Government and the Board of Agriculture inspected the farm and found it progressing very favorably under Mr. Baker's management. They decided to roof one side of one of the barns and to add a root cellar under the main barn, the latter improvent being necessitated by the want of room in which to store the turnips and mangold-wurtzels, which they will have about 3,000 bushels. The cellar will be 20x30 and will have a capacity of about 4,000 bushels. They also purpose clearing and deeping about 15 acres more land. Be-

fore the snow flies they intend to have the young growth that has sprung up in some of the pastures cut down. About 100 tons good hay have been cut upon the farm this season. The grain is not quite as good as might be wished, but the root crop is excellent.

At the farm house an excellent dinner was provided, and about seventy persons satisfied the cravings of the inner man. Before leaving in the evening quite a number took a lunch, also. Wagons took purchasers to and from the station, which is at Walker's crossing. The collie dogs were the object of much attention and admiration among the stockmen and spectators.—*Abstracted from the Maritime Farmer.*

WE are glad to see, by the Ontario and New Brunswick papers, that the Local Government of New Brunswick is moving actively in the matter of the proposed CENTENNIAL EXHIBITION to be held in St. John next autumn. The *Kingston Whig* says:—Mr. Julius L. Inches, Secretary for Agriculture of New Brunswick, who more than any one else, is sustaining the vigor and enterprise of that department, last evening laid before the Agricultural and Arts Association in session in Kingston, the scheme for a Centennial Exhibition a year hence at St. John, N. B., to commemorate the anniversary of the founding of the Province. The Provincial Government has undertaken the project, there being no general Agricultural and Arts Association in New Brunswick. The Dominion and Local Governments, the city of St. John and town of Portland have bonused it, and with \$40,000 of anticipated donations and gate receipts, the projectors hope to be able to pay expenses, besides making permanent additions to the very fine and spacious exhibition building at St. John. It will, therefore, be a great show if expectations be realized.

Mr. Inches asks for the co-operation of the western Provinces, and was given many assurances of their interest and good will. Ontario will contribute largely to the Fair, we are sure, both in visitors and exhibits, since a trip to St. John and the Maritime Provinces generally is a very pleasant one, and there are now multitudinous western business connections with St. John to capture the attention and invite competition of manufacturers and agriculturists. The western cities are not all tired of show and probably will not meet the request that they should abandon their annual great fairs, but they will endeavor to make their exhibitions contribute to the greater one at St. John, and thus in reality aid it. With this purpose the time of the Centennial Exhibition should be fixed for October. We, in common with all

Kingstonians, wish St. John better luck than the fates of the weather permit Kingston to have with its fairs.

THE "best time" for holding Exhibitions is a moot point that frequently exercises Agricultural Societies and Exhibition Committees. The American and Ontario Exhibitions are mostly held in September. In Nova Scotia we have them extended from the third week of September to about the middle of October. In New Brunswick October seems to be the favorite month, if we are to judge from the following list of local Exhibitions:

- Oct. 5.—Wakefield and Jacksonville, Co. Carleton.
- Oct. 5.—Welford, Kent Co., at Coal Branch.
- Oct. 10.—Kings and Westmoreland, at Havelock Corner, 9 miles from Petitecodiac Station.
- Oct. 11.—Kingsclear.
- 11.—Elgin, Albert Co., at Elgin Corner.
- Oct. 11.—Charlotte Co., at Bayside.
- 11.—Aberdeen, Carleton Co., at Glassville.
- Oct. 13.—Kincardine.
- 14.—Carleton Co., at Woodstock.
- 17.—St. Croix, at St. Stephen.
- 19.—Stanley.
- 19.—Cambridge, Queen's County, (Mouth of Jemseg).
- Oct. 23.—St. Mary's Kent Co.

CATTLE DISEASE IN NEW YORK.—The *Free Press*, Ottawa, says that the Governor of the State of New York has been notified that there is a strange disease among the cattle in Schenectady county. It is believed that the disease was contracted from Texas cattle imported by John Buys, of Rotterdam, two months ago. Two cows have died, and many cattle will probably die. The symptoms are loss of appetite, debility, running at the eyes, with the extremities cold, a disinclination on the part of the animal to move about, and indications of severe pain internally.

POTATOES.—An interesting article in the *Examiner*, of Charlottetown, on the potato crop of P. E. Island, estimates this year's crop at 3,000,000 bushels, of which 2,000,000 bushels will be for sale. It thinks the farmer will receive at his home about 25 cents per bushel, all round, and that it costs 7 to 8 cents per bushel to raise potatoes, leaving a net profit, say of 17½ cents per bushel. It believes that Island shippers, who pay 25 cents, will only realize a small margin on prices now current in the Boston market.

The management of the Meteorological Service of the Dominion have furnished the Department of Agriculture and Statistics of Manitoba with fifty gauges for measuring rain and snow fall. It is proposed to distribute these throughout the Province to voluntary observers who will be willing to take daily observations and to send a record of them at the end of each month. They will be supplied with blank forms and stamped envelopes for this purpose and will receive the publications of the Meteorological Service and also the publications of this Department. In order to render the observations of the greatest possible value the sites for the location of the instruments will be distributed as much as possible, so that there may be a record of every district, and of the peculiarities of local showers.

THE St. Croix *Courier* in noticing the St. Croix Agricultural Society's exhibition and cattle show, held in St. Stephen, New Brunswick, on the 17th October, express a doubt whether our Agricultural Societies are productive of the good which was anticipated at their formation. As far as regards the shows held by them, the *Courier* is justified in being somewhat sceptical on this point. Among the farmers who are members of Societies, there is generally wanting the spirit of generous rivalry, competition, and a desire for improvement; and they do not aim to show progressive improvement at their successive shows. It says, "the same cattle are exhibited from year to year. We gaze upon them and recognize the countenances of old acquaintances. They return the expression, and seem to say, 'there is that reporter with his note book again!' For years and years this has been the case, and it sometimes seems to us as these mute members of the animal kingdom would never die. Some of them must already have taken premiums to the extent of twice their value." Allowing for a little caricature this is true of not a few of our Societies shows.

THE COLLIE AS A SPORTSMAN'S DOG.—There has been much complaint among sportsmen and game-keepers in reference to the hardness of the mouth of the retriever. I have very much pleasure, through your widely read paper, to offer a remedy for this long and grievous complaint. I have been experimenting on the collie as to his capabilities as a sportsman's dog. I find him capable in every way, and a superior worker to the retriever, with a beautiful soft mouth. To sportsmen and game-keepers I would recommend the collie, rough-coated (black and tan), as a superior dog in every way to the retriever, and by adopting the collie instead of the retriever they will

have no more grumbling about hard mouths. The collie retrieves splendidly on both land and water. I had very little difficulty in training collie to his new calling. I do not think it cost more than half of the time that I would have required when training a retriever. The collie's usefulness to sportsmen is of much value.—*Forest and Stream.*

The potato trade is in a very unsatisfactory condition. Receipts from New York State, Maine and the Provinces are all more or less affected by the rot, and it is almost impossible to get a sound lot. The Maine arrivals are decidedly bad. Most of the cars shrink at least 50 per cent—that is, half the car load thrown away—and then what remains have to be sold at a very low price. The price for strictly sound potatoes is 70 to 75 cents per bushel, out sales range all the way from 25 to 50 cents per lots as they arrive.—*Trade Circular.*

DR. FRANKLIN B. HOUGH, Chief of the Forestry Division in the U. S. Department of Agriculture has published a work on American Forestry, [The Elements of Forestry, &c., by Franklin B. Hough, Ph. D. Cincinnati: R. Clarke & Co., 1882,] which is truthfully and modestly described in the preface as an endeavour to present in a concise form a "general outline of the subject of Forestry in its most ample relations, without attempting to be exhaustive in anything." It is very comprehensive in scope, nicely got up, cheap (\$2), and will prove a useful book to everyone who has anything to do with planting or forest conservation. The chapters embrace: (1) Definitions, (2) Soils, Slope and aspect, (3) Climate, (4) Reproduction from Seed, (5) Modes of Propagation, (6) Planting, (7) Structure and Growth, (8) General Views of Forest Values, &c., (9) Timber Rights in U. S., (10) European Plans of Management, (11) Ornamental Planting, (12) Hedges, Screens and Shelter Belts, (13) Cutting and Seasoning, (14) Fuel, (15) Forest Fires, (16) Other Injuries, (17) Insects, (18) Process for increasing durability or improving quality, (19) Resinous Products, &c., (20) Pulp Paper, (21) Tanning Materials, (22) Descriptions of Species, (23) Conifers, (24) Planting in Kansas and Nebraska.

The following extract will show Dr. Hough's mode of treating his subject:—"As a general rule, all trees growing in an open space have a tendency to spread out laterally, and not to grow as high as where they are surrounded by other trees. This tendency to branch from next the ground is greater in a dry climate and in places exposed to strong winds. It is therefore a common practice among skilled

foresters to plant the trees much nearer together than they could stand when mature, and thin them out when they become larger. It is an excellent practice in the planting of valuable kinds, that we wish to have grow straight and high, to place them in alternate places in the rows, with other trees of more rapid growth, but, it may be, of less value. The latter may be taken out when their shelter or protection are no longer needed, and when the kinds we wish to preserve have grown so as to soon shade the whole of the ground. The oak is found to thrive exceedingly well when young, when thus surrounded by pines. The willow and the cotton wood are excellent nurseries for other trees, such as the walnut and the ash. In alternate rows of willows and walnuts, the latter were found at four years' growth, at Lincoln, Nebraska, to be from three to five feet high and very thrifty, while in full exposure to the sun they were but eighteen inches high and very scrubby."

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Advertisements.

Resolution of Provincial Board of Agriculture,
3rd March, 1882.

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