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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., MARCH, 1885.

No. 55.

BOARD OF AGRICULTURE.

The Central Board of Agriculture met in one of the up-stairs library rooms in the old province building at 10 a.m., 10th March. Present: Major-General Laurie, Oakfield; Hon. Isidore LeBlanc, M. E. C., Arichat; I. Longworth, Truro; Colonel W. E. Starratt, Paradise, Ann.; C. E. Brown, Yarmouth; John McKeen, Mabou, C. B.; Prof. Lawson, Secretary.

On motion of Mr. Brown, seconded by Hon. Mr. LeBlanc, Major-General Laurie was elected president of the board for the year.

Moved by Col. Starratt, that Mr. Brown be elected vice-president, Mr. Brown declined the nomination, owing to the distance of his place of residence (Yarmouth) from Halifax, and moved that Mr. Longworth be elected vice-president, which was seconded by Hon. Mr. LeBlanc and passed unanimously,

Moved by Col. Starratt, seconded by Mr. McKeen, and passed, that Professor Lawson be appointed secretary and treasurer to the board.

On motion of Mr. McKeen, seconded by Mr. Brown, the following were appointed an executive committee: The president, vice-president, Colonel Starratt, and Hon. Mr. LeBlanc.

Mr. Brown submitted application and by-laws of a new agricultural society, to embrace the whole of Shelburne county east of Jordan River, and moved, seconded by Colonel Starratt, that the society be recognized as qualified for the ensuing

year. The by-laws having been read and considered in detail, were sanctioned.

Colonel Starratt presented an application from Messrs. E. & O. Chase for premiums on sheep imported by them.

The president and Hon. Mr. LeBlanc having been requested to confer with the chairman of the agricultural committee of the house of assembly, reported that a conference with that body had been arranged for Thursday morning at eleven o'clock.

The executive committee reported that, for reasons given, they had found it necessary to sell the Jersey bull Litchfield 15th, and, on motion of Mr. McKeen, seconded by Colonel Starratt, this action was approved of and the sale sanctioned.

The board adjourned at 1. p. m.

2.30 P. M.—Business resumed Same members present.

The secretary was directed to make application to certain societies for explanations of their accounts and operations during the past year before issuing warrants for their grants.

The secretary laid before the board copy of a bill now before the House of Commons, which he had received from the Hon. Wm. Ross, intituled: "An act respecting infectious or contagious diseases affecting animals."

The bill was read.

Moved by Mr. McKeen, seconded by Mr. Longworth, and resolved, that the Board represent to the hon. the minister of agriculture, that section 13, providing

for compulsory slaughter, be so amended that the compensation limit shall be one-third, or two-thirds, in the respective cases provided for, of the real value of the animal destroyed, to be determined by competent appraisors, otherwise the provision may entail injustice in the case of valuable horses and thoroughbred animals, (the highest compensation allowable by the act as it stands at present being \$20 and \$40, respectively.)

Moved by Col. Starratt, seconded by Mr. McKeen, and passed: That as the wording of section 10 does not appear to apply to the municipal system of Nova Scotia, where there are no reeves nor mayors, of townships, the authority given under this section to such mayors and reeves be extended to wardens of counties.

Moved by Mr. Brown, seconded by Colonel Starratt, and resolved:

The Board desire to press upon the earnest attention of the hon. minister of agriculture the urgent necessity that exists for the establishment of a quarantine station for the lower provinces, at Halifax, the principal port of call for ocean steamers from Europe; and further, in view of the great interchange of special breeds of thoroughbred cattle between western Nova Scotia and the Atlantic coast states of the Union, that a quarantine station be also established at Yarmouth, N. S., where special facilities exist at the hospital station owned by the Dominion government and known as Bunker's island.

Read application from Wm. Eaton, secretary, acting for the Municipal Council of King's county, offering to conduct the provincial exhibition of 1885 in terms of the act on the basis of a guaranteed prize list of Six Thousand Dollars.

Kentville, Jan. 6th, 1885.

PROFESSOR GEORGE LAWSON,
Secretary of Central Board of Agriculture.

DEAR SIR,—Delegates from the several Agricultural Societies of King's County, and others interested in industrial pursuits, met yesterday in Kentville, and, after organizing by appointing a Chairman and Secretary, passed, among other motions, the following:

Resolved, That this meeting proceed to appoint a Committee who shall be the "responsible body" to make application to the Central Board of Agriculture for the holding of the Provincial Exhibition of 1885 in Kentville, and for the transaction of all matters of business in connexion therewith.

On motion, Two representatives from each of the Agricultural Societies were chosen as follows:

Kings Co. Ag'l Soc.	H. Chisham, M.D.	Capt. Tuzo.
Union	.. Enoch Collins,	John E. Starr.
Central	.. Edw. M. Jordan,	Chas. Strong.
W. Cornwallis	.. T. H. Parker,	H. J. Chute.
Aslesford	.. Charles Taylor,	J. Patterson, Jr.
Farmers	.. Leander Hand,	Amos B. North.
Truout	.. The President	and Secretary.
Fruit Growers Ass'n	Rev. Mr. Hart,	Robt. W. Starr.

The members of the Municipal Council, 16 in number, were then appointed, and the following persons additional, viz., Thos. E. Smith, Caleb R. Bill, J. A. Woolworth, William Eaton, and D. B. Newcomb—in all 37.

It was further unanimously

Resolved, That the Secretary of the present meeting be authorized and instructed to apply on our behalf to the Central Board of Agriculture for the placing of the Provincial Exhibition for 1885 in Kentville, and we hereby pledge ourselves to provide a "Prize List" of not less than Six Thousand Dollars (\$6000), and to conduct the Exhibition according to law and under the direction of the Central Board.

In accordance with the above instructions I hereby formally, in behalf of the above Committee, make application to the Central Board, and request them to direct that the Provincial Exhibition of 1885 shall be located in Kentville, Kings County.

I am, yours respectfully,

WILLIAM EATON,
Sec'y of Meeting.

Kentville, Jan. 14th, 1885.

PROF. LAWSON,

Dear Sir,—The Exhibition Committee, of which I gave you notice a few days ago, have submitted the matter to

the Municipal Council—now in session—and the result has been that they—the Municipal Council of King's County—has assumed the responsibility of asking for and conducting the Provincial Exhibition of 1885.

They have guaranteed a prize list of \$6000.

They have appointed their Executive; their Chairman, Secretary and Treasurer, and their Committee for making prize list.

They have further authorized and instructed me as Secretary to make application for the Exhibition of 1885, which duty I hereby perform.

Please notify me when the meeting of the Board will take place, as a delegate has been appointed to confer with them.

Yours respectfully.

WILLIAM EATON,
Sec'y and Treas.

Colonel Starratt called attention to the fact that this was the largest prize fund ever offered for a provincial exhibition in the province.

After fully considering the matter, the Board adopted the following resolution:

Moved by Colonel Starratt, seconded by Mr. Longworth, "That the offer of the municipal council of King's county to hold the provincial exhibition of 1885 at Kentville be accepted."

On motion of Mr. Brown, the Board adjourned to Thursday at 10 a. m., in order to afford members an opportunity of attending the meeting of dairymen's association at Windsor.

EXTRACTS FROM REPORT OF BOARD OF AGRICULTURE FOR 1884.

PRESIDENT'S REPORT.

In forwarding the Annual Report of the Central Board of Agriculture, it becomes my duty to report, with regret, that the past season was not favourable to Agricultural operations.

A very wet spring delayed sowing and planting, and, as the early part of the summer continued wet, the drilled crops were much interfered with, and the accompanying cold weather much retarded growth, and, later on, hay-making was also much obstructed by the rain. Hay was generally much below the average. Oats did not suffer so much from the cold wet, but made a great growth of straw and filled well during some fine warm days in August.

Potatoes and turnips were both very light crops, so was green corn, much grown in our Province for fodder and for the new practice of ensilage.

Early frosts gave us promise of a hard winter owing to the comparative scarcity

of fodder; but we were favoured with very mild open weather until nearly the middle of January, which lessened the demand on the winter store of food for cattle, consequently the short yield of last summer will not pinch our farmers as much as was at one time feared.

The opening up of the North-West, and consequently increased supplies of bread stuffs, have so reduced the prices of these products that our farmers find it necessary to turn their attention to other branches of husbandry.

A Dairyman's Association has been organized, and it will, it is hoped, lead to butter being produced of such high quality, that it will command the highest price in all markets.

Some enterprising farmers have commenced shipment of cattle to Europe. Their venture will, it is hoped, be successful. Our capabilities in raising cattle are almost limitless. The saving of land carriage from the west, and of the deterioration of cattle, are in our favor, probably to the amount of \$15 an animal,—in itself, a handsome profit to the cattle feeder.

The perseverance and intelligent industry of our fruit-growers is bringing its own reward. Nova Scotian apples are now sought after in the London markets, and the men who have persevered in spite of discouragements, reap rich and well-deserved harvests.

It cannot be too often repeated that whilst poor articles hardly repay the cost of production good things always command high prices in the English market; if, therefore, our agriculturists will set themselves to produce high class butter, beef, and fruit, they will realize the difference between mere maintenance and competence, and this must be the agricultural end they must strive to attain.

Considerable attention is now being given to the cultivation of small fruits, and the increased direct communication by steamers now afforded between our western ports and the large cities of the United States offer our producers an apparently unlimited market.

It has been in the past an almost accepted theory that fruit could only be grown to advantage in what is usually known as the Annapolis Valley; but other counties are now coming forward to dispute this position, and Lunenburg already stands third in the list of counties in our Province as an apple-producer. It is probable that this is mainly owing to the industry and perseverance of its inhabitants, and that what has been accomplished in Lunenburg could as readily be accomplished in every county in the Province.

As the amount granted to Agriculture is practically appropriated by Statute, it has been a principal duty of the Central Board to insure that the amount so given

should be properly expended. The reports and accounts of the Agricultural Societies, which are printed, show that the small amounts received as subsidies by each Society, are, as a rule, expended in accordance with the spirit of the Act. Much improvement in the administration of the Societies' funds is noticeable, the principal attention being given to the provision of thorough-bred stock, and improvement in the class of cattle, which really furnish the farmers' livelihood, and which therefore should be as good as can be got. The funds are also used to provide the best seeds, thus securing a better return for the labor of cultivation. Service of bulls is always paid for, and seeds are distributed at cost and charges.

In the past improved implements for use in the bounds of the Society were not uncommonly purchased, but of late private enterprise has provided these and with satisfactory results. It has been asserted that the days of usefulness of Agricultural Societies had passed, that they had fulfilled their mission and should now be replaced by more effective machinery. That the farmers themselves do not hold this view is proved by the vitality of the Societies, which, numbering 88 in 1883, have increased to 92 in 1884, and the membership has risen from 4910 in 1883 to 5064 in 1884, and, now that they rightly recognise the methods by which they may best advance the agricultural industry, their usefulness promises to increase as the circle of their influence widens.

The total number of Societies, as remarked, is 92, being four in excess of the number in existence last year. There is an increase in the number in the Counties of Colchester, Cumberland, Guysborough, Inverness, Hants, Lunenburg, Queen's, Shelburne, Victoria and Yarmouth, and a decrease in the number of Societies in Annapolis, Cape Breton, Digby, King's, Pictou and Richmond. In the other Counties the number remains as before. There is an increase in the total number of members to the extent of 154, and in the total amount of subscriptions to the extent of \$872.00, and a consequent increase in the amount of Legislative grant for which the Societies have qualified, to the extent of \$287.00,—the total amount of grants to Societies this year being in excess of that of any previous year, viz., \$6835.00.

The arrangement for dividing the Exhibition Grant amongst the five Agricultural Districts into which the Province is divided is not found to give general satisfaction. The prizes offered at District Exhibitions are necessarily too small to induce owners at a distance to send in their stock, &c., for exhibition, as the expense of transport and maintenance at a distance from home, and deterioration and risk of injury, are con-

siderable, consequently these exhibitions not unnaturally become County Exhibitions only, and for these the amount of Prize List is large.

It would seem better to revert to the former practice of an annual Provincial Exhibition in a different part of the Province every year. The local Exhibitions are of great value in educating the whole community in ideas of excellence, and interesting them in the work of Exhibitions, but these should work with and as feeders for a Provincial Exhibition, and not be substituted for it, and Agricultural Societies might well follow the example of Yarmouth and combine to hold County Exhibitions annually, and these, properly managed, with suitable grounds, would soon become self-supporting, or might well rely upon municipal assistance.

As already stated, and shown in the Societies' reports, the farmers are yearly becoming more alive to the interests of agricultural progress,—there is a decided desire amongst them to improve their breeds of cattle, sheep and pigs, to feed them better, to raise better crops, and generally to make themselves acquainted with the newest and most approved methods of cultivation.

To this is to be ascribed the agitation for agricultural education—for an institution where the principles of agriculture may be theoretically taught, and then worked out in practice before the pupils, who would thus know how to work a farm and why they should follow the prescribed rules.

The pressing necessity of agriculture is not merely what is commonly called a stock farm, for our own breeders can already furnish the stock, and private enterprise should rather be stimulated than repressed by government competition, but rather a model farm, where the best breeds should undoubtedly be kept, where the best known processes of cultivation and feeding should be practiced, and where all kinds of crops should be tested as to their suitability to our climate and markets, and this should be associated with an educational institution where the coming generation should be enabled to become scientific cultivators of the soil.

Such is the most pressing need of the agricultural profession, and which, sooner or later, must be provided. Meantime it would much benefit the present generation if a capable and practical lecturer on agricultural science and practice could be employed to visit our Agricultural Districts, and the interest created and stimulus given would lead to such an improvement in cultivation, and such increased returns, as would give ample return for the outlay.

I have the honor to be, Sir,
Your obedient servant,
J. WINBURN LAURIE.

Oakfield, March 4th, 1885.

AGRICULTURAL SOCIETIES.

As indicated in previous Reports, one of the most important duties of the Board is to maintain in vigor and efficiency the County and District Agricultural Societies, upon which devolves the work of introducing and carrying out improvements in their several districts. The funds of Societies are used for the purchase of thorough-bred animals, and maintaining the same under suitable regulations for the use of members; in some cases for the holding of local Exhibitions; and for the introduction of improved varieties of seeds and implements, which, however, are required to be furnished the members at cost and charges, except in special cases, where the Board shall consider it in the public interest to allow Societies to expend a portion of their funds for such articles. The Board receives the Accounts and Reports of Societies, and ascertains, before granting certificates to entitle them to participate in the Provincial grant, that they have complied with the provisions of the Act. The Annual Reports, Accounts, and also the attested returns of paid membership of the several Agricultural Societies that have applied for participation in the grant for the year 1884, have been examined with care, and the statement which follows (pp. 29-36) shows the results of the examination. The names of the societies are given in a classified form, and, in each case, are also stated (1), the number of members; (2), the amount of attested subscriptions; (3), the proportion of grant to which the Society will be entitled, and (4), the names of the principal officers for the year responsible for the management of the Society's affairs.

THE STOCK REGISTER.

A few years ago the Board took into consideration the subject of Registration of Thoroughbred Stock, and, after full enquiry and deliberation, determined to form a New Register for the Province under rules more definite than those previously in use. The work of preparing this register has been tedious, largely owing to applications tendered for the registry of animals not qualified and the extensive enquiries and correspondence to which such applications necessarily led. The Board are, however, able to report that the Register is now so near completion that entries of duly qualified animals can be made with regularity and dispatch, which was impracticable whilst numerous disputed applications were being dealt with. Much inconvenience is still experienced, however, from the want of a printed Herd Book, and the Board hope that the Government and Legislature will be pleased to take into consideration the propriety of supplying this great want. It is but right, in this

connection, to notice the fact that dissatisfaction has been expressed by some Breeders with the stringency of the rules for entry applied by the Board, whilst others think that a still higher requirement than four thoroughbred crosses should be demanded, so as to place our register on a footing of equality with the published Canadian, British American, and American Herd Books. In consequence of this difference of opinion the Board has taken steps to ascertain the views of the Breeders of the several classes of thoroughbred cattle in the Province, feeling that the Breeders themselves are the best judges of the standard required to suit the circumstances of the country, and to maintain the commercial value of our herds at home and abroad.

SHEEP AND HORSE PREMIUMS.

The propriety of granting premiums to encourage the importation of sheep, spoken of in last year's report, has again been brought under notice of the Board; also, the subject of premiums on Horses. The Board desire to recommend these matters to the attention of the Legislature, as no importations of either horses or sheep have been made by the Government or Board for some years, and the requirements of our farmers in the way of better sheep and a first-rate class of horses are very generally known and recognized throughout the length and the breadth of the Province. The conditions upon which premiums are given for such importations, should be clearly defined and strictly carried out.

PROVINCIAL EXHIBITION OF 1885.

It being the duty of the Board to make rules, regulations, &c., for the Provincial Exhibition, which, in accordance with the Act, will be held during the year 1885, notice was given that the Board was prepared to receive offers from any Agricultural Society or other responsible body, for the holding of the Provincial Exhibition of 1885,—such offers to specify the place and time proposed, the extent of accommodation, and the amount to be offered in agricultural and industrial prizes, and to be accompanied by a list of the committee or society, or other responsible body proposing to undertake the exhibition,—such offers to be communicated to the Secretary of the Board not later than the first day of March. So soon as an offer shall be accepted by the Board, the body undertaking to carry out such Provincial Exhibition, shall immediately submit to the Board a prize list for approval, and shall be subject to such other rules, regulations and instructions as the Board shall hereafter order.

The offers received for the Provincial Exhibition of 1885 will be considered at the meeting of the Board to be held in

March, when the location of the Exhibition will be decided. The Board were desirous, if possible, to give it a Dominion character, and accordingly applied to the Minister of Agriculture to ascertain whether the Dominion Exhibition premium of \$5000 00 would be available for such purpose. The following reply was received:—

DEPARTMENT OF AGRICULTURE,
Ottawa, 6th Jan. 1885.

SIR,—The Minister of Agriculture desires me to inform you, in reply to your letter of the 15th ult., that no decision has yet been arrived at with reference to a Dominion grant in aid to give one of the Provincial Exhibitions a Dominion character in 1885. It is the intention of the Minister to consult his colleagues on the subject; and until that is done he cannot cause a definite answer to be furnished to the questions in your letter.

I have the honor to be, Sir,
Your obedient servant,
J. LOWE,

Sec'y Dept. Agriculture.

GEORGE LAWSON,
Sec'y Gen. Board of Agriculture,
Halifax, N. S.

THE PROVINCIAL VETERINARY SURGEON.

Arrangements for local visits of the Provincial Veterinary Surgeon, for 1884, were made and advertised for Windsor, Bridgetown, Kentville, Annapolis, Digby, Yarmouth, Truro, New Glasgow, Pictou and Antigonish,—the terms announced as follows:—

“W. Jakeman, Provincial Veterinary Surgeon, will visit the several localities arranged for, and will be prepared to treat cases of Domestic Animals suffering from Disease or Accident, or requiring operations performed.

“Scale of fees (modified under arrangement with Board):

“Visits, advice and prescription, \$1.00 for first, and 50 cents for each succeeding visit. Medicine extra at reasonable rates.

“Operations from \$1 up to \$5, according to nature and circumstances.

“When called specially to a distance at places or times not advertised, the charge will be \$5 per full day, and actual necessary travelling expenses.”

Mr. Jakeman's report of work done during the season is appended hereto.

HORSE BEANS.

The Board imported a quantity of Horse Beans from England, in order to introduce this crop effectively into the Province. The English Horse Bean is known to be one of the most nutritious and productive plants in the world, and is known also to be peculiarly suited to the climate of Nova Scotia, although not

by any means in equal degree to the dry climates of the Western States.

Many inquiries having been made respecting the cultivation of English Horse Beans, it may be stated that they can be planted in any of the various ways in which Indian corn is planted,—either as a cultivated drill crop, or sown broadcast or drilled like grain. In the latter case the soil must be well worked, or have been in roots the previous year. The quantity of seed required to the acre will be at least a third more than corn, as the seed is larger and the plants do not spread. A considerable quantity of the beans still remain unsold, price \$3.00 per bushel.

GENERAL ABSTRACT OF TREASURER'S ACCOUNTS.

Cr.	
By Balance, February, 1884.....	\$ 123 51
Provincial Treasury.....	12248 00
Fees collected for Registrations and Transfers in Cattle Register.....	78 00
Amount reimbursed by New Brunswick Government for Freights of Nova Scotian Exhibits to Dominion Exhibition.....	97 88
Proceeds of sale of bull.....	35 00
	\$12652 39
Dr.	
To Grants paid to Agricultural Societies for 1883.....	\$6548 00
Prize Funds paid to District Exhibitions:	
District No. 1, Dartmouth.....	444 44
" " 2, Annapolis.....	444 44
" " 3, Liverpool.....	222 22
" " 4, Yarmouth.....	606 67
" " 5, Amherst.....	606 67
" " 6, New Glasgow.....	606 67
" " 7, Baddeck.....	888 89
Printing and Advertising.....	144 00
Secretary's Salary.....	900 00
Travelling expenses of Members of Board.....	441 20
Keop of bull.....	28 75
Horse Beans, \$99.25; less, \$2.50.....	66 75
Printing and mailing Agricultural Journal \$364 53.....	
Less Subscriptions and Advertising fees.....	300 50
	4 03
Telegrams and postages.....	22 52
Stationery.....	25 60
Miscellaneous.....	6 20
Balance in Treasurer's hands, 5th March, 1885.....	465 98
	\$12652 39

STOCK FARM ACCOUNT.

Deposit Receipt in People's Bank, Halifax..	\$1762 91
Interest from 26th February, 1885, to 31st January, 1885.....	185 43
	\$1898 34

GREEN & WHINERAY, K 30 Exchange Buildings, Liverpool, 21st February, 1885, report of Apples:—Arrivals still continue showing the effects of being frosted in America, and very few parcels are entirely clear of it—some barrels are almost worthless, and scales have been made as low as 2/- to 4/- per barrel for considerable quantities, and out of shipments where some of the fruit has landed comparatively free of frost. There is a strong demand for anything absolutely sound, and we only want an improved condition in the Apples to see another similar boom similar to what we had in January. In fact this depression would not have taken place if the frost had not made its appearance, as Apples are wanted this spring.

The following quotations are for tight barrels:—

Baldwins, Boston	12/-	to	15/6
New York	15/-	"	17/-
Canadian	15/-	"	18/-
Maine	14/-	"	18/-
Greenings	13/-	"	15/-
Newtowns	25/-	"	35/-
Rox Russets	13/-	"	16/-
Golden "	16/-	"	27/-
N. Spy	22/-	"	16/-
Kings	18/-	"	23/-
Slack packed	9/-	to	13/-
Slack and wet	3/-	"	8/-

Arrivals for the week are as follows:—

	Barrels
Seythia, @ New York	533
Nevada, " "	831
Celtic, " "	1067
Sarmatian, " Portland	2413
Oregon, " "	2038
Havarian, " Boston	313
Cephalonia, " "	2832
Iowa, " "	2669
Total arrivals for week	12,696
to date	440,762

MESSRS. GREEN & WHINERAY, of Liverpool, report under date, 28th February, that Apples are still arriving more or less touched with Frost, and buyers are very cautious in their selections, while they are in great want of good Apples they are afraid to operate. Boston Apples have come very tender, and the price for best selections has been 15/-, many of the cracked brands have landed in poor condition, and had to be sold at very low prices.

Main Apples have not experienced Frost to the same extent, and meet with a good demand.

The following quotations are for tight barrels:

Baldwins, Boston	12/-	to	15/-
New York	13/-	"	14/6
Maine	14/6	"	16/6
Canadian	15/-	"	18/-
Northern Spy	14/-	"	18/-
Golden Russets, Canadian	20/-	"	25/-
" "	16/-	"	18/-
Rox Russets	15/-	"	16/-
Greenings	13/-	"	16/-
Canada Reds	18/-	"	20/-
Slack packed	10/-	to	14/-
Slack and wet	4/-	"	9/-

Arrivals for the week are as follows:

	Barrels
Servia, @ New York	536
Germainic, " "	940
Gallia, " "	200
Kansas, " Boston	4710
Iberian, " "	1361
Brooklyn, " Portland	5119
Polynesian, " "	3221
Total arrivals for week	16,087 barrels
to date	456,849

Consumers generally prefer a long rather than a round potato, probably from greater convenience in cooking through when baked. But the trouble with long potatoes is that they tend to become pointed at the end, and this is the beginning of their speedy degeneration in yield and quality. Farmers prefer to grow oval shaped potatoes, as they do not run out so quickly.

THE operations of the promoters of canine science and art in the city of St. John do not seem always to meet with the ready appreciation of neighboring foreigners. The Halifax dogs, or their owners, have not forgotten the dog tent at the St. John Dominion Exhibition, and the American Judge who then presided over the destinies of dogs, and scored the points of pets and poultry. Another palace of justice has been reared in St. John,—this time "A Bench Dog Show,"—the session extending from 27th to 30th January. The Chief Justice was again an expert from New York. And, now that his duties are over, and he has made for the land of the free, the Dogs of Truro have themselves leaped the bench and are after him in full cry. Not that the Truro dogs got badly beaten at St. John, and are only now rallying; on the contrary, the *Guardian* gives a jubilant list of honors won, but adds in a sort of after-growl:—

"No prize was given for pointers, as the Judge decided that none came up to the standard, Mr. Linton's dog being adjudged the best of his class. The prizes for Irish setters were nearly all monopolized by dogs from Massachusetts, though Mr. Chambers's dog was greatly admired, and by many St. John men considered the superior of the American exhibit. The black and tan terrier prize was given to a dog exhibited by Col. Braine of St. John, chairman of the Executive Committee. This animal's ears were cropped, and this should have rendered him ineligible for any premium. James Mortimer, of New York, was the expert employed to judge dogs, but we fancy, from the opinions expressed, that even a professional occasionally has his prejudices. English bred dogs were, we understand, frequently passed over in favor of those of American variety."

The head and front of offending seems to have been reached in the cropping of the Chairman's beauty's ears, which must surely have been in accordance with the rule when authorized by the chairman. Seriously, we think that the utility to mankind of both Dogs and Poultry, and their useful improvement, are sadly interfered with by the whims of the Fancy, and the enactment of rules that have no relation whatever to utility, and, in cases not a few, very dubious relations to beauty or comeliness,—and that, if Poultry and Pet Shows are to commend themselves to the general public, they should be so conducted as to seek the public good.

We do not mean to say that the St. John Dog and Pet Shows are in any important respect different from those of other places. Of late years we have been perfectly free from complaints of injudicious rules or ignorant or unjust judging in regard to the Dog and Pet Shows of Halifax, simply because we have had none. As sure as the next Dog Show comes round, so surely will it be followed

by the after-bark of the disappointed ones.

Let dogs be judged by their intelligence, their symmetry of form and muscular development, their strength or swiftness, keenness of scent, their docility of temper, their proneness to excel in essential qualities rather than in fashion whims, their capacity of being trained to the varied kinds of work in which they may minister to the wants and comforts and pleasures of mankind. Let the poultry judge carry a pair of scales and a tape measure, and feel the bones and flesh of a bird, and, in case of dressed specimens, examine the bird when cooked instead of merely looking through a lense to detect a parti-coloured feather, whose imaginary importance will outweigh all substantial useful qualities. Conducted on such principles, Dog, Pet and Poultry competitions would command the support of all sensible men.

The following is a continuation of Professor Asa Gray's Paper on the American Flora:—

Turning now from similarities, and from that which interchange has made familiar, to that which is different or peculiar, I suppose that an observant botanist upon a survey of the Atlantic border of North America (which naturally first and mainly attracts our attention) would be impressed by the comparative wealth of this flora in trees and shrubs. Not so much so in the Canadian Dominion, at least in its eastern part; but even here the difference will be striking enough on comparing Canada with Great Britain.

The Coniferae, native to the British Islands, are one Pine, one Juniper, and a Yew: those of Canada proper are four or five Pines, four Firs, a Larch, an Arbor Vitae, three Junipers, and a Yew,—fourteen or fifteen to three. Of Amentaceous trees and shrubs, Great Britain counts one Oak (in two marked forms), a Beech, a Hazel, a Hornbeam, two Birches, an Alder, a Myrica, eighteen Willows, and two Poplars,—twenty-eight species in nine genera, and under four natural orders. In Canada there are at least eight Oaks, a Chestnut, a Beech, two Hazels, two Hornbeams of distinct genera, six Birches, two Alders, about fourteen Willows and five Poplars, also a Plane tree, two Walnuts and four Hickories; say forty-eight species, in thirteen genera, and belonging to seven natural orders. The comparison may not be altogether fair; for the British flora is exceptionally poor, even for islands so situated. But if we extend it to Scandinavia, so as to have a continental and an equivalent area, the native Coniferae would be augmented only by one Fir,

the Amentaceæ by several more Willows, a Poplar, and one or two more Birches;—no additional orders nor genera.

If we take in the Atlantic United States, east of the Mississippi, and compare this area with Europe, we should find the species and the types increasing as we proceed southward, but about the same numerical proportion would hold.

But, more interesting than this numerical preponderance—which is practically confined to the trees and shrubs—will be the extra-European types, which, intermixed with familiar old-world forms, give peculiar features to the North American flora,—features discernible in Canada, but more and more prominent as we proceed southward. Still confining our survey to the Atlantic district, that is, without crossing the Mississippi, the following are among the notable points:

1. Leguminous Trees of peculiar types. Europe abounds in leguminous shrubs or under-shrubs, mostly of the Genisteous tribe, which is wanting in all North America, but has no leguminous tree of more pretense than the *Cercis* and *Laburnum*. Our Atlantic forest is distinguished by a *Cercis* of its own, three species of *Locust*, two of them fine trees, and two *Money Locusts*, the beautiful *Cladrastis*, and the stately *Gymnocladus*. Only the *Cercis* has any European relationship. For relatives of the others we must look to the Chino-Japanese region.

2. The great development of the Ericaceæ (taking the order in its widest sense), along with the absence of the Ericaceous tribe, that is, of the Heaths themselves. We possess on this side of the Mississippi 30 genera and not far from 90 species. All Europe has only 17 genera and barely 50 species. We have most of the actual European species, excepting their *Rhododendrons* and their Heaths,—and even the latter are represented by some scattered patches of *Calluna*, of which it may be still doubtful whether they are chance introductions or sparse or scanty survivals; and, besides, we have a wealth of peculiar genera and species. Among them the most notable in an ornamental point of view are the *Rhododendrons*, *Azaleas*, *Kalmias*, *Andromedas* and *Clethras*; in botanical interest, the endemic *Monotropeæ*, of which there is only one species in Europe, but seven genera in North America, all but one absolutely peculiar; and in edible as well as botanical interest, the unexampled development and diversification of the genus *Vaccinium* (along with the allied American type, *Gaylussacia*) will attract attention. It is interesting to note the rapid falling away of Ericaceæ westward in the valley of the Mississippi as the forest thins out.

3. The wealth of this flora in Compositæ is a most obvious feature; one especially prominent at this season of the year, when the open grounds are becoming golden with *Solidago*, and the earlier of the autumnal Asters are beginning to blossom. The Compositæ form the largest order of Phenogamous plants in all temperate floras of the northern hemisphere, are well up to the average in Europe, but are nowhere so numerous as in North America, where they form an eighth part of the whole. But the contrast between the Compositæ of Europe and Atlantic North America is striking. Europe runs to Thistles, to *Inuloideæ*, to *Anthemideæ*, and to *Cichoriaceæ*. It has very few Asters and only two *Solidagoes*, no Sunflowers and hardly anything of that tribe. Our Atlantic flora surpasses all the world in Asters and *Solidagoes*, as also in Sunflowers and their various allies, is rich in *Eupatoriaceæ*, of which Europe has extremely few, and is well supplied with *Vernoniaceæ* and *Helenoideæ*, of which she has none; but is scanty in all the groups that predominate in Europe. I may remark, that if our larger and most troublesome genera, such as *Solidago* and *Aster*, were treated in our systematic works even in the way that Nyman has treated *Hieracium* in Europe, the species of these two genera (now numbering 78 and 124 respectively) would be at least doubled.

4. Perhaps the most interesting contrast between the flora of Europe and that of the eastern border of North America is in the number of generic and even ordinal types here met with which are wholly absent from Europe. Possibly we may distinguish these into two sets of differing history. One will represent a tropical element, more or less transformed, which has probably acquired or been able to hold its position so far north in virtue of our high summer temperature. (In this whole survey the peninsula of Florida is left out of view, regarding its botany as essentially Bahaman and Cuban, with a certain admixture of northern elements.) To the first type I refer such trees and shrubs as *Asimina*, sole representative of the *Anonaceæ* out of the tropics, and reaching even to lat. 42°; *Chrysobalanus*, representing a tropical suborder; *Pinckneya* representing as far north as Georgia the *Cinchoneous* tribe; the *Baccharis* of our coast, reaching even to New England; *Cyrilla* and *Cliftonia*, the former actually West Indian; *Bumelia*, representing the tropical order *Sapotaceæ*; *Bignonia* and *Tecoma* of the *Bignoniaceæ*; *Forestiera* in *Oleaceæ*; *Persea* of the *Laurineæ*; and finally the *Cactaceæ*. Among the herbaceous plants of this set, I will allude only to some of peculiar orders. Among

them I reckon *Sarracenia* (of which the only extra-North American representative is tropical-American, the *Melastomaceæ*, represented by *Ilexia*; *Passiflora* (our species being herbaceous), a few representatives of *Loasaceæ* and *Turneraceæ*, also of *Hydrophyllaceæ*; our two genera of *Burmanniaceæ*; three genera of *Hemodaceæ*; *Tillandsia* in *Bromeliaceæ*; two genera of *Pontederiaceæ*; two of *Commelyneæ*; the outlying *Mayaca* and *Nyris*, and three genera of *Eriocaulaceæ*. I do not forget that one of our species of *Eriocaulon* occurs on the west coast of Ireland and in *Skye*, wonderfully out of place, though on this side of the Atlantic it reaches Newfoundland. It may be a survival in the Old World; but it is more probably of chance introduction.

The other set of extra-European types, characteristic of the Atlantic North American flora, is very notable. According to a view which I have much, and for a long while, insisted on, it may be said to represent a certain portion of the once rather uniform flora of the arctic and less boreal zone, from the late Tertiary down to the incoming of the Glacial period, and which, brought down to our lower latitudes by the gradual refrigeration, has been preserved here in eastern North America, and in the corresponding parts of Asia, but was lost to Europe. I need not recapitulate the evidence upon which this now generally accepted doctrine was founded; and to enumerate the plants which testify in its favor would amount to an enumeration of the greater part of the genera or subordinate groups of plants which distinguish our Atlantic flora from that of Europe. The evidence, in brief, is that the plants in question, or their moderately differentiated representatives, still co-exist in the flora of eastern North America and that of the Chino-Japanese region, the climates and conditions of which are very similar; and that the fossilized representatives of many of them have been brought to light in the late tertiary deposits of the arctic zone wherever explored. In mentioning some of the plants of this category I include the *Magnolias*, although there are no nearly identical species, but there is a seemingly identical *Liriodendron* in China, and the *Schizandras* and *Illiciums* are divided between the two floras; and I put into the list *Menispermum*, of which the only other species is eastern Siberian, and is hardly distinguishable from ours. When you call to mind the series of wholly extra-European types which are identically or approximately represented in the eastern North American and in the eastern Asiatic temperate floras, such as *Trautvetteria* and *Hydrastis* in *Ranunculaceæ*; *Caulophyllum*,

Diphylloia, Jeffersonia and Podophollum in Berberidaceæ; Broussonetia and Nelumbium in Nymphæaceæ; Stylophorum in Papaveraceæ; Sturtia and Gordonia in Ternstroemiaceæ; the equivalent species of Xanthoxylum; the equivalent and identical species of Vitis, and of the poisonous species of Rhus (one, if not both, of which you may meet with in every botanical excursion, and which it will be safer not to handle); the Horse-chestnuts, here called Buckeyes; the Negundo, a peculiar offshoot of the Maple tribe; when you consider that almost every one of the peculiar Leguminous trees mentioned as characteristic of our flora is represented by a species in China or Manchuria or Japan, and so of some herbaceous Leguminosæ; when you remember that the peculiar small order of which Calycanthus is the principal type has its other representative in the same region; that the species of Philadelphia, of Hydrangea, of Itea Astilbe, Hamamelis, Diervilla, Triostemum, Mitchellia which carpets the ground under evergreen woods, Chiogenes, creeping over the shaded bogs; Epigæa, choicest woodland flower of early spring; Elliottia; Skörtia (the curious history of which I need not rehearse); Styraç of cognate species; Nyssa, the Asiatic representatives of which affect a warmer region; Gelsemium; which, under the name Jessamine is the vernal pride of the Southern Atlantic States; Ayularia and Buckleya, peculiar Santalaceous shrubs; Sassafras and Benzoin of the Laurel family; Planera and Maclura; Pachysandra of the Box tribe; the great development of the Juglandaceæ (of which the sole representative in Europe probably was brought by man into southeastern Euræ in pre-historic times); our Hemlock-Spruce, Athorvita, Chamæcyparis, Taxodium and Torreya, with their East Asian counterparts, the Roxburghiaceæ, represented by Croomia—and I might much further extend and particularize the enumeration—you will have enough to make it clear that the peculiarities of the one flora are the peculiarities of the other, and that the two are in striking contrast with the flora of Europe.

This contrast is susceptible of explanation. I have ventured to regard the two antipodal floras thus compared as the favored heirs of the anti-glacial high northern flora, or rather as the heirs who have retained most of their inheritance. For, inasmuch as the present arctic flora is essentially the same round the world, and the Tertiary fossil plants entombed in the strata beneath are also largely identical in all the longitudes, we may well infer that the ancestors of the present northern temperate plants were as widely distributed throughout their

northern home. In their enforced migration southward geographical configuration and climatic difference would begin to operate. Perhaps the way into Europe was less open than into the lower latitudes of America and eastern Asia, although there is reason to think Greenland was joined to Scandinavia. However that be, we know that Europe was fairly well furnished with many of the vegetable types that are now absent, possibly with most of them. Those that have been recognized are mainly trees and shrubs, which somehow take most readily to fossilization, but the herbaceous vegetation probably accompanied the arboreal. At any rate, Europe then possessed Torreyas and Gingkos, Taxodium and Glyptostrobus, Libocedrus, Pines of our four or five leaved type, as well as the analogues of other American forms, several species of Juglans answering to the American forms, and the now peculiarly American genus Carya, Oaks of the American types, Myricas of the two American types, one or two Planer-trees, species of Populus answering to our Cotton-woods and our Balsam-poplar, a Sassafras and the analogues of our Persea and Benzoin, a Catalpa, Magnolias and a Liriodendron, Maples answering to ours, and also a Negundo, and such peculiarly American Leguminous genera as the Locust, Honey Locust, and Gymnocladus. To understand how Europe came to lose these elements of her flora, and Atlantic North America to retain them, we must recall the poverty of Europe in native forest trees, to which I have already alluded. A few years ago, in an article on this subject, I drew up a sketch of the relative richness of Europe, Atlantic North America, Pacific North America, and the eastern side of temperate Asia, in genera and species of forest trees. In that sketch, as I am now convinced, the European forest-elements were somewhat underrated. I allowed only 33 genera and 85 species, while to our Atlantic American forest were assigned 66 genera and 155 species. I find from Nyman's Conspectus that there are trees on the southern and eastern borders of Europe which I had omitted; that there are good species which I had reckoned as synonyms, and some that may rise to arboreal height which I had counted as shrubs. But, on the other hand, and for the present purpose, it may be rejoined that the list contained several trees, of as many genera, which were probably carried from Asia into Europe by the hand of man. On Nyman's authority I may put into this category Cercis siliquastrum, Ceratonia siliqua, Diospyros Lotus, Styraç officinalis, the Olive, and even the Walnut, the Chestnut, and the Cypress. However this may be, it seems

clear that the native forest flora of Europe is exceptionally poor, and that it has lost many species and types which once belonged to it. We must suppose that the herbaceous flora has suffered in the same way. I have endeavored to show how this has naturally come about. I cannot state it more concisely than in the terms which I used six years ago.

"I conceive that three things have conspired to this loss of American, or as we might say, of normal types sustained by Europe. First, Europe, extending but little south of lat. 40°, is all within the limits of some severe glacial action. Second, its mountains trend east and west, from the Pyrenees to the Carpathians and the Caucasus beyond: they had glaciers of their own, which must have begun their work and poured down the northward flanks while the plains were still covered with forest or the retreat from the great ice forces coming from the north. Attacked both on front and rear, much of the forest must have perished then and there.

"Third, across the line of retreat of whatever trees may have flanked the mountain ranges, or were stationed south of them, stretched the Mediterranean, an impassible barrier. . . Escape by the east, and rehabilitation from that quarter until a very late period, was apparently prevented by the prolongation of the Mediterranean to the Caspian, and probably thence to the Siberian Ocean. If we accept the supposition of Nordenskiöld that, anterior to the Glacial period, Europe was bounded on the south by an ocean extending from the Atlantic over the present deserts of Sahara and Central Asia to the Pacific, all chance of these American types having escaped from and reentered Europe from the south and east seems excluded. Europe may thus be conceived to have been for a time somewhat in the condition in which Greenland is now. . . Greenland may be referred to as a country which, having undergone extreme glaciation, bears the marks of it in the extreme poverty of its flora, and in the absence of the plants to which its southern portion, extending six degrees below the arctic circle, might be entitled. It ought to have trees and it might support them. But since their destruction by glaciation no way has been open for their return. Europe fared much better, but has suffered in its degree in a similar way."

Turning to this country for a contrast, we find the continent on the eastern side unbroken and open from the arctic circle to the tropic, and the mountains running north and south. The vegetation when pressed on the north by on-coming refrigeration had only to move its southern border southward to enjoy its normal

climate over a favorable region of great extent; and, upon the recession of glaciation to the present limit, or in the oscillations which intervened, there was no physical impediment to the adjustment. Then, too, the more southern latitude of this country gave great advantage over Europe. The line of terminal moraines, which marks the limit of glaciation rarely passes the parallel of 40° or 39°. Nor have any violent changes occurred here, as they have on the Pacific side of the continent, within the period under question. So, while Europe was suffering hardship, the lines of our Atlantic American flora were cast in pleasant places and the goodly heritage remains essentially unimpaired.

The transverse direction and the massiveness of the mountains of Europe, while they have in part determined the comparative poverty of its forest-vegetation, have preserved there a rich and widely distributed alpine flora. That of Atlantic North America is insignificant. It consists of a few arctic plants, left scattered upon narrow and scattered mountain-tops, or in cool ravines of moderate elevation; the maximum altitude is only about 6,000 feet in lat. 44°, on the White Mountains of New Hampshire, where no winter snow outlasts midsummer. The best alpine stations are within easy reach of Montreal. But as almost every species is common to Europe, and the mountains are not magnificent, they offer no great attraction to a European botanist.

Farther south, the Appalachian Mountains are higher, between lat. 36° and 34° rising considerably above 6,000 feet; they have botanical attractions of their own, but they have no alpine plants. A few subalpine species linger on the cool shores of Lake Superior, at a comparatively low level. Perhaps as many are found nearly at the level of the sea on Anticosti, in the Gulf of St. Lawrence, abnormally cooled by the Labrador current.

The chain of great fresh-water lakes, which are discharged by the brimming St. Lawrence, seems to have little effect upon our botany, beyond the bringing down of a few northwestern species. But you may note with interest that they harbor sundry maritime species, mementoes of the former saltiness of these interior seas. *Cakile Americana*, much like the European Sea Rocket, *Hudsonia tomentosa* (a peculiar Cistaceous genus imitating

a Heath), *Lathyrus maritimus*, and *Ammophila arenaria* are the principal. *Salicornia*, *Glaux*, *Scirpus maritimus*, *Ranunculus Cymbalaria*, and some others may be associated with them. But these are widely diffused over the saline soil which characterizes the plains beyond our wooded region.

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