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THE ILLUSTRATED JOURNAL OF AGRICULTURE

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COPY.

Copy of the report of a committee of the honourable Executive Council, dated 10th of August, 1882.—Approved by the Lieutenant Governor 9th of September, 1882.

As to the approval of the deliberations of the Council of Agriculture.

The honourable Commissioner of Agriculture and Public Works in a memorial, dated the tenth of August, 1882, recommends: that the deliberations of the Council of Agriculture of the 25th of October, 1881, and of the 1st and 2nd of March, 1882, be approved, in conformity with the act 32 Vict., ch. 15, sect. 39, with the exception of the recommendation of an additional grant of \$200.00 in favour of the Montreal Horticultural Society.

The committee concurs in this recommendation, and submits it for the approbation of the Lieutenant Governor.

Certified copy.

(Signed) JOS. A. DEFOY, Clerk Ex. Council.

Council of Agriculture of the Province of Quebec.

Montreal, Oct. 26th, 1881.

Present, Messrs Beaubien, Benoit, Blackwood, Browning, Casavant, Casgrain, DeBlois, Faribault, Gibb, Guilbault, Marsan, Massus, the Revd Messrs Pilote and S. Tassé, and Mr Somerville.

The minutes of the last meeting were read and approved.

The Secretary read the reports of the agricultural schools of St. Anne and St. Francis for the present year, and the report of the committee appointed to visit the agricultural schools during the summer of 1881.

Mr Browning, seconded by Mr Benoit, moved: "That the report of the committee on schools lie on the table till the next meeting of the Council, to enable members to become more thoroughly acquainted with-it." (carried)

Messrs N. S. Whitney, W. Evans and Hy. Evans, delegates of the Montreal Horticultural Society, were introduced, and made a statement to the following effect: That for a number of years the reports of the Society have always been published and paid for by an annual grant from the government, amounting to \$200.00, but that for the last two years, for reasons unknown to them, they have not received the grant; and they request the Council to have the goodness to use their influence with the government to obtain for the Society a continuance of the grant; without which it will be impossible for them to publish the said reports, which are of special interest to the province.

Mr Browning, seconded by Mr Somerville, moved: That, considering the great importance of the publication of the reports of the Montreal Horticultural Society, and the incalculable good conferred on the province by their diffusion, the government, through the intervention of this Council, be respectfully requested to assist the publications of the said reports by the continuance of the annual grant of \$200.00; and that moreover, this council would view with pleasure the translation of the reports into French, and their publication in that language, for distribution in the different counties of the province.

Mr Benoit, seconded by Mr Tassé, moved in amendment: That, while recommending the grant, the Council regrets that the Horticultural Exhibition is not held at the same time and on the same spot as the Provincial Exhibition, by which plan the public would profit more fully than heretofore by the said Horticultural Exhibition.

The amendment, having been put to the vote, was lost on the following division:

For: Messrs Benoit, Casavant, Guilbault, Tassé, (4).

Against: Messrs Beaubien, Blackwood, Browning, Casgrain, Faribault, Gibb, Marsan, Somerville, (8).

The original motion was then carried on the same division.

A letter was read from Col. Rhodes, of Quebec, stating that for the last 20 years he has been a life-member of the Agricultural Society of Lower Canada, and, as such, has been entitled to free admission to all the provincial exhibitions. That, not having received his admission ticket for the last provincial exhibition, he requests the Council to repay him the sum of \$10.00, the amount of his subscription.

Mr Browning, seconded by Mr Gibb, moved: That the request of Col. Rhodes, dated October 1st, that the sum of \$10, the amount of his subscription as life-member of the Agricultural Society of Lower Canada, be repaid to him, be granted.

This motion was put to the vote and lost on the following division.

For: Messrs Blackwood, Browning, Gibb, (3).

Against: Messrs Benoit, Casavant, Faribault, Guilbault, Marsan, Somerville, Tassé, (7).

And the Council adjourned till 2 o'clock, p. m.

AFTERNOON SESSION.

The same members being present, the Secretary read the

report of the committee appointed to visit the principal creameries of the State of New York, and to study the system on which they are conducted.

Mr Marsan, seconded by Mr Guilbault, moved: That the thanks of the Council be voted to the members of the committee for the interesting report which they have just submitted to the Council, and that their excellent report lie on the table until the next meeting, for the more special study of the members of the Council, (carried).

A petition from the Agricultural Society (n° 1) of the Co. of Pontiac was read, saying that: as on account of the purchase of an estate, and of the construction thereon of certain buildings for the county exhibitions, and, also, on account of the compulsory purchase of a certain quantity of "goëmon biphosphaté," the funds of their Society are very low, the said Society pray to be exempted from holding the competition for the best cultivated farms this year.

Resolved: That the Council regrets that the Agricultural Society (n° 1) of the Co. of Pontiac did not forward the resolution in question in time to be laid before the meeting of last March, as was requested by circular, but at the same time, under present circumstances, the Council does not refuse to grant the petition.

A request was read from the Agricultural Society of the Co. of Quebec stating: That the competition for the best cultivated farms cannot possibly be held in this county because, 1st, no system of rotation is followed; 2nd, the farms, an account of the great subdivision of property, are not as large as the rules demand; 3rd, the farmers have not a stock of cattle proportionate to the extent of their land.

Resolved: That the Council of Agriculture, considering the advanced season at which the petition is presented, consents, once more, to exempt the Agricultural Society of the County of Quebec from holding a competition this year for the best cultivated farms; but with the express understanding, that for the future, this county must conform to the rules of the Council, under penalty of losing its grant.

A petition was read from the President of the Agricultural Society of the Co. of Verchères, stating: that he has received an account from the government for 4 tons of goëmon-biphosphaté, amounting to \$104.00, plus the freight, \$30.00, and, moreover declaring that this amount would be retained from the grant to the society this year; that the president informed the government that the society had never received the manure in question; that there was a mistake in the quantity charged; and that, besides, it was too late, then, (in July) to be of any use.

The President, in conclusion, requests the Council to free the said society from the necessity of paying the said account, and to direct that its grant for the present year shall be paid in full.

Mr Browning, seconded by Mr Somerville, moved: That the Council having learned that certain Agricultural Societies have never received their quota of goëmon-biphosphaté, in accordance with the distribution made by government, while others complain of having received more than the 2 tons destined to each society, according to the resolution passed by the Council on the 4th of last May; the Council takes the liberty of requesting the government to take whatever steps it shall think fit to find out the exact quantity of goëmon-biphosphaté received by the different Agricultural Societies, before it makes any deductions from their respective grants; in order to avoid any injustice to the said societies.

A letter was read from Mr Arthur Corneiller, a member of the Agricultural Society of Berthier, complaining that the directors of the said society have avoided holding a competition for the best cultivated farms this year, by imposing

conditions impossible of realisation in these competitions.

A report was read from the President and Secretary of the Berthier Agricultural Society, stating that, in spite of their efforts to hold a competition for the best cultivated farms, they have not received a single entry. They request that the government grant be paid to them, to enable the society to discharge the debt contracted by the former directors, a debt which has very much restricted the operations of the said society.

Resolved: That a copy of Mr Corneiller's letter, respecting the operations of the Agricultural Society of the Co. of Berthier, be sent to the directors of the said society, and that the government grant be retained, until more ample information as to the operations of the said society be received.

A request was read from divers members of the Agricultural Society of the Co. of Assomption, complaining of certain regulations of the said society as injurious to their rights.

Mr Browning, seconded by Mr Gibb, moved: That the Council of Agriculture having learned that the books of the Society of Agriculture of the Co. of Assomption contained certain regulations passed by the said society, but not sanctioned by this council, the Secretary be instructed to inform the Agricultural Society of Assomption that all rules not approved by this council must be erased from its books, as being illegal (carried).

Resolved: That the Secretary of the Council be authorized to pay over the grant to the different fruit-growers association, as soon as the committee shall be convinced that the said societies shall have conformed to the regulations of this council.

Mr Benoit, seconded by Mr Casavant, moved: That the Agricultural Societies be permitted, for the year 1882, to omit their annual exhibition, and to employ their funds in the purchase of thoroughbred breeding stock, after having obtained the leave of this council at its meeting in March next. (carried)

Resolved: That every Agricultural Society, that has obtained leave to employ its funds in the purchase of thoroughbred breeding stock, shall be obliged to forward to the office of the council, on or before the first of January next, a report pointing out the breed of of each animal, its cost, and from whom bought; the whole accompanied by a certified pedigree of the animal; and that a circular to that effect be sent to the Agricultural Societies.

A petition was read from the Agricultural Society (n° 1) of the Co. of Megantic, praying to be exempted from holding a competition for the best cultivated farms, to enable it to buy Shorthorn bulls.

The desired leave was granted.

A letter from Mr MoEchran, about the bursaries (Anglice, *scholarships*) of the Veterinary College of Montreal, was referred to the committee on schools.

The report of the Montreal Veterinary College for the year 1880 was laid on the table until the next meeting of the council, to enable the members to make themselves acquainted with its contents.

A petition was read from the Agricultural Society of the Co. of Jacques Cartier, asking leave to suppress the prizes for the competition for the best cultivated farms, on account of the great expense caused to the said society by the purchase of a thoroughbred Clyde stallion at the price of \$1500.00. By granting this permission, the council would assist the said society in paying off the debt thus contracted.

Resolved: That the said petition be granted.

Certified copy.

Montreal, 15th Nov. 1881.

(Signed) GEORGE LECLÈRE, Secretary.
(From the French.)

Council of Agriculture of the Province of Quebec.

Montreal, March 1st, 1882.

Present: Messrs Blackwood, Browning, Casavant, Casgrain, De Blois, Gauthier, Gaudet, Guilbault, Ouimet, Marsan, Pilote, Somerville.

Mr J. Gaudet, Vice-President, having taken the chair, the Secretary read the Minutes of the last meeting, which were approved.

A letter was read by the Secretary from Mr Massie informing the council that he would be unable to be present at this meeting.

Mr Ouimet, seconded by Mr Blackwood, moved: That Mr Massie be elected President of the Council for the present year.

Mr Pilote, seconded by Mr Guilbault, moved: That Mr E. J. De Blois be elected Vice-President for the present year. (carried). Mr E. J. De Blois, the new Vice-President, then took the chair.

Mr Ouimet, seconded by Mr Guilbault, moved: That the following form the executive committee.

Messrs Massie, president, Beaubien, Casgrain, De Blois, Marsan, Somerville. (carried).

Mr Marsan, seconded by Mr Gaudet, moved: That the following gentlemen form the committee on fruit-growers associations.

J. M. Browning, president, L. Beaubien, L. H. Massie, A. Casgrain, P. Gauthier. (carried).

Mr Casgrain, seconded by Mr Blackwood, moved: That the following gentlemen form the committee on the "amendment of the Act of Agriculture":

Messrs Ouimet, president, L. H. Massie, J. H. Browning, the Revd S. Tassé, and those members of the council who form part of the Legislature of this province. (carried).

Mr Guilbault, seconded by Mr Gauthier, moved: That the following gentlemen form the committee on schools:

The Revd F. Pilote, president, Benoit, Blackwood, Casgrain, Ouimet. (carried).

The council then received a deputation from the Montreal Horticultural Society, consisting of Messrs Whitney, Gibb, Sheppard and Andres, who stated the great advantages that must ensue to Canada from the importation of fruit-trees from Northern Russia; from their acclimatation in this country; and from their distribution in our rural districts: for this, the Society would need a piece of land for experimental purposes, and a subsidy from government to aid them in the undertaking: and the deputation hoped that the Council of Agriculture would kindly lend them its influence with government, in support of the application which the Society intended to make.

Resolved: That the Council of Agriculture gladly expresses its satisfaction at hearing that the Montreal Horticultural Society is so actively occupied with the important question of introducing into this country fruits suitable to the climate, and the council will recommend the petition of the said society to the serious consideration of the government of the province.

A request was read from M. T. J. A. Marsan, asking, in the name of the Assomption Agricultural College, for a grant of \$50.00 to assist this College in the purchase of a good level, for the use of the Agricultural College.

Resolved: That the above grant be made to the Assomption Agricultural College.

The Secretary submitted the reports of the Fruit-growers Associations of the counties of Shefford, Abbotsford, Missisquoi, l'Inlet and Brome.

Resolved: That these reports be approved, and that the Secretary be instructed to pay them the amount of their annual grant as soon as he has received it from the government. And the Council adjourned till 2 o'clock, p. m.

AFTERNOON SESSION.

The same being present, the secretary read a letter from secretary of the Agricultural Society (n° 1) of the Co. of Ottawa, saying that, in consequence of a serious illness, he had been unable to forward in due time to this office the documents necessary for obtaining the government grant of last year, and he prays the council to lend a favourable ear to his petition, and to hand over the grant to the said society.

Resolved: that, in view of illness of the Secretary of the Agricultural Society (n° 1) of the Co. of Ottawa, an illness which rendered him incapable of discharging his duties, the government grant for last year be paid to the said society.

Mr Ouimet, seconded by Mr Somerville, moved: That the Secretary be empowered to purchase maps of the Dominion, of the Province of Quebec, and of The World, and to hang them on the walls of the Council-Chamber. (carried).

The Secretary read a petition from the Agricultural Society (n° 1) of the Co. of Beauce, praying that, in view of certain irregularities in the petition of a part of the inhabitants of this county, asking for a second society in the county, the decision of the council, dated 1st March, 1881, should be reconsidered, and that the Society (n° 2) of the Co. of Beauce should not be recognised as having a legal existence.

A letter was read from the Secretary of the Agricultural Society (n° 2) of the Co. of Beauce, entering into long explanations as to its present condition, in support of its demand to be recognised as Society n° 2 of the Co. of Beauce, in accordance with the decision of the Council of Agriculture contained in its resolution of March 1st, 1881.

Mr Ouimet, seconded by Mr Pilote, moved: That the petition of the Agricultural Society (n° 1) of the Co. of Beauce be rejected, and that the two societies of the said county continue their functions as determined by the decision of the council at their meeting of March 1st, 1881; and that a copy of the present resolution be sent to both societies (nos 1 and 2) of the county of Beauce. (carried).

The Secretary submitted a letter from Mr McEachran about the Veterinary College. In it, he requests the Council to lay down rules for the examination of the pupils who present themselves as candidates for admission into the College with the view of studying veterinary surgery.

Resolved: That Mr McEachran's letter be referred to the committee on schools, and that the said committee be requested to report thereon.

A letter was read from Mr L. A. Cannon, clerk to the corporation of the city of Quebec, dated January 17th, 1882, enclosing a copy of two resolutions of the corporation, expressing the wish of that body that the next provincial exhibition may be held in the city of Quebec.

Mr Gauthier, seconded by Mr Ouimet, moved: That the resolutions of the council of the city of Quebec regarding the next provincial exhibition be referred to the honourable Commissioner of Agriculture. (carried).

The Secretary submitted for the approval of the council the programmes of several Agricultural societies.

Mr Ouimet, seconded by Mr Pilote, moved: That the programmes of operations of certain agricultural societies be referred to the executive committee, with a request to report on them at the session of the 2nd of March. (carried).

And the council adjourned to the next day, March 2nd, at noon.

NOON SESSION, MARCH 2nd, 1882.

Present: Messrs De Blois, Blackwood, Casgrain, Gauthier, Ouimet, Pilote, Somerville.

Mr Ouimet, seconded by Mr Somerville, moved: That the Secretary cause to be printed 250 copies of the index to the book of the deliberations of the Council of Agriculture. (carried).

The report of the committee on schools was read, respecting the letter of Mr McEachran, and the visit made by the members of that committee to the Montreal veterinary college.

Resolved that the report of the committee on schools regarding the letter of Mr McEachran and the visit made by the committee to the Montreal veterinary college be received, and that it lie on the table till the next meeting of the council.

The following report of the executive council on the programmes of operations of certain agricultural societies for the present year was read and approved.

Report of the Executive Council.

Session of March 1st, 1882.

M. E. T. DE BLOIS, President.

Temiscouata: The programme of this society is approved.

Bonaventure, No. 2 Div. B.: The programme of this society is approved, with the addition of the word "thoroughbred" before the words "breeding stock" in this programme.

Gaspé, No. 1: Programme approved.

Beauharnois: Programme approved.

St. Jean: Programme approved.

Chicoutimi: This society must conform to the regulations of the council allowing Agricultural Societies to employ half the subscriptions of the members in the purchase of grass-seeds, and the other half in the purchase of thoroughbred breeding stock.

Napierville: Programme approved.

Dorchester: Programme approved.

Bagot: Programme approved in part; but this society must not expend more than half the subscriptions of its members for grass-seeds.

County of Quebec: Programme approved, provided the society spend half the members' subscriptions in buying grass-seeds.

Nicolet: Programme approved, except regard as the members' subscriptions, which must be double the customary ones, that is to say two dollars each member for every entrance after the first of May: 2nd, only half the members' subscriptions may be used to buy grass-seeds; and no other seeds can be bought in this way.

Megantic: Programme of operations of this society is not approved; in order that the request of this society be granted by the council, it is necessary that the breeding stock employed for the improvement of the cattle of the society's members be thoroughbred.

Yamaska: Programme approved; but this society must employ half its members' subscriptions in the purchase of thoroughbred stock.

Terrebonne: Programme approved.

St. Hyacinthe: Programme approved.

Beauce, No. 1: Programme approved.

Kamouraska: Programme approved.

Champlain: Programme approved. This society may devote the whole of its grant to the purchase of thoroughbred stock.

Charlevoix, No. 2: Programme of this society not approved; it must conform strictly to the rules of the council, and only employ half its members' subscriptions in the purchase of grass-seeds.

And the council adjourned. Certified copy.

(Signed) GEORGES LECLÈRE, Secretary.

Council of Agriculture of the Province of Quebec.

Montreal, August 25th, 1882.

Present, Messrs Massie, Ross, Somerville, Marsan, A. Casgrain, Casavant, E. Casgrain, Oûimet, Blackwood.

MR MASSIE IN THE CHAIR.

The Secretary read the minutes of the last meeting, which were approved.

(1) Resolved: That this council has learned with great sorrow the death of the honourable J. Gaudet, one of its members, whose knowledge of the art of agriculture it so highly appreciated, and whose devotion to the service of this, council has been so marked: That the council seizes the occasion of this its first meeting to offer its sincere condolence with the bereaved family; and, that the Secretary be requested to forward a copy of this resolution to the family of the deceased.

A letter from Mr Gauvreau was read, excusing his absence from this meeting.

The report of the school-committee was read, on its visit to the Montreal Veterinary College, the consideration of the report having been postponed to the present meeting.

(2) Resolved: that the report be received and approved.

(3) Resolved: that, in accordance with the suggestions of the school committee, the President and the Secretary form a sub-committee for the previous examination of the candidates for bursaries in the said college; the sub-committee having the right to add one or two persons to their number.

The Agricultural Society of the Co. of Verchères begs leave to exact a sum of money for admission to its county exhibitions, and to aid in reimbursing it for certain outlays made in the purchase of land and in the erection of certain buildings suitable for the said exhibitions.

(4) Resolved: That the Society of the Co. of Verchères be permitted to charge a sum of money for admission to its agricultural shows.

The Agricultural Society of the city of Quebec begs to be exempted from holding a competition this year, and to be allowed to expend its funds in the purchase of a thoroughbred stallion for the use of the said society.

(5) Resolved: That the Quebec (city) society of Agriculture be exempted this year from holding a competition, and be allowed to expend its funds in the purchase of a thoroughbred stallion, as far as those funds consist of its members' subscriptions; but on the express condition, that, before receiving the government grant, the society shall give irrefutable proof that the stallion thus bought is really thoroughbred.

The Agricultural Society of Sherbrooke asks to be exempted from holding any competition this year, and to be allowed to unite its funds to those of the neighbouring societies for the purpose of getting up a show.

(6) Resolved: That in consideration of the excellent results of these district shows, the Sherbrooke society be permitted to get up a district show, and, for this year, to be exempt from all other competitions.

(7) Resolved: That the honourable the Commissioner of Agriculture be respectfully requested to ask the Director of the Journal of Agriculture to insist upon the Agricultural Societies having a complete list of their members sent during the month of May, and that the subscription to the Journal begin and end on the 1st of June in each year.

(8) Resolved: That the Secretary be instructed to send a circular to those Agricultural Societies which have bought thoroughbred stock, desiring them to forward to the council, between now and the 1st of October next, copies of the certificates of the pedigrees of such animals; and that these societies be informed that the council will insist on the production of these pedigrees before handing over to them the annual grant.

(9) Resolved: That the Secretary be instructed to buy a copy of Mr Hough's (1) book on the diseases of forest-trees, (1) *Hough*, pronounced *Huff*.

and to have it translated into French. And the council adjourned. Certified copy.

(Signed)

GEORGES LEOLÈRE, Secretary.

From the French.

COPY.

Copy of the report of a committee of the honourable Executive Council, dated 26th of Sept., 1882.

Approved by the Lieut. Governor, Sept. 27th, 1882.

On the approval of certain resolutions of the Council of Agriculture.

The honourable Commissioner of Agriculture and Public Works, in a memorial of 26th Sept., 1882, recommends, that the resolutions of the Council of Agriculture of the 25th of August last be approved, except as regards the 7th resolution about the Journal of Agriculture, which remains under consideration.

The committee concurs in this recommendation, and submits the approbation of the Lieut. Governor.

Certified,

(Signed)

JOS. A. DEFOY, Clerk Ex. Council.

From the French.

Provincial Exhibition 1882.

It is possible to have an exhibition of the same old, but very true, saying, and never more closely brought home to our minds than this autumn. It is, I think, clear to every candid mind that we are overdoing our exhibitions. One in three years, or at most in two years, would be quite enough; and if we could persuade the Kingston and Toronto people to arrange matters with us by a common understanding, the former would be the preferable number: at least, that seems to be the opinion of those of my friends who are most interested in the matter. There was, without any doubt, a great falling off in the attendance this year. Partly, we may attribute this to the hateful weather, but it was principally due to the fact that a too constant repetition of the same scene palls, sooner or later, upon the mind of the most ardent pleasure seeker. For we must not imagine that even the majority of the visitors to the Mile End grounds are brought thither by an intelligent curiosity. Many come, doubtless, to study the latest improvements in arts, mechanical inventions, cattle, etc.; but by far the larger number look upon the Exhibition as they would upon a race course, a place in which to while away an idle afternoon, with a little lazy excitement to stir them up every now and then. These will hardly trouble themselves to visit the grounds if weather or anything else turn out unpropitious, and the managers really must not be surprised if the receipts fall off for the future, depending largely, as they clearly do, upon the fickle feelings of a volatile part of the community.

I am glad to be able to say, with truth, that the arrangement of the cattle-sheds was a great improvement on the past. The mixture of breeds was, to a great extent, avoided, and the whole bore a much more ship-shape appearance than I ever saw here. The great difficulty seemed to be the judging. I do not wish to keep tormenting the managers of the agricultural department on this point: Mr McEachran spoke out about it in the October number of this Journal; it shall be enough to say that the defects he noticed in his article were painfully apparent again. I may point more particularly to the judging of the Jersey cattle: I don't find fault with the decisions in their case, but, surely, Thursday afternoon, the penultimate day of the show, was a late date to be looking for men competent to determine the relative merits of such an important class of cattle. If there are \$25,000 available for prizes, could not \$250 be found for the remuneration of five sets of first class judges, if so many be necessary, to judge the more uncommon classes of cattle, such as the Angus, Herefords, Jerseys, etc.? To offer an expert \$5, is nothing less than an absurdity, and to set a man whose life has been passed among Ayrshires to judge Herefords, is a deliberate acknowledgement either that the managers do not understand that different breeds have their peculiar points of merit, or that they do not appreciate the duties of their highly responsible office at the proper value. I remember, once upon a time, being present at a cattle-show, in Utopia, where, of the three men detailed to judge a certain class of cattle, comparatively new to that locality, one had seen a single specimen of the breed, and another had only heard that such a race existed; his eyes never having been blessed with the sight of one.

The cattle at the Exhibition were, as usual, the chief point of attraction. I cannot say that there was any signs of improvement in the general quality of the stock they are as good as they usually make them. The best out of Herefords, and Polled Angus, might as last year, were at any English Show without fear as last year, were place. The Ayrshires, by the wisdom of the decision of full of quality, and a prize might admit of doubt, it is the judges doubt as always arises when there are two different breeds, both of which have their admirers.

To my mind, Mr Cochran's yearling Shorthorn heifer, which took the first prize in her class, was, for beauty and compactness of form, the queen of the whole show. She is snow-white, an unfashionable colour here, I know, but colour is a mere trifle to the eye of a connoisseur compared with form; her shoulders are absolutely perfect; her handling would satisfy a London butcher, being midway between flabby and harsh, which is equivalent to saying that it is firm, and the skin feels as if a mossy, hand-filling substance were floating on a substratum of fat mingled with tender mellow flesh.

By the pedigree of this lovely heifer we may see that she has most aristocratic blood in her veins: She is by Watchman 2nd out of Bessie, and the names of Duke of Geneva 2nd, Second Duke of Airdrie, Third Duke of Oxford, and the Princesses occur in her genealogy.

As usual, there was one horrid leggy brute of a pseudo Shorthorn bull in the stalls—I could not find out his owner's name or I would advise him to look more closely to his own interest before he makes such a mistake as to send a miserable mongrel to such a meeting of first class animals.

Mr Gibb, of Compton, had a nice lot of young Shorthorns, red in colour, and very taking as a whole.

Royal Liud, from Mr Geo. Whitfield's farm, took first prize for the best old bull. If one could fill him up behind the shoulder, he would be more satisfactory; but take him behind, and there is not so much fault to find with, and he is a very weighty beast—I should say he would give between 1500 and 1600 pounds of carcass—or in our London mode of reckoning, he would weigh 190 stones of 8 lbs—what he wants is compactness. Mr Gibb's two years old heifer, bred by himself at Compton, was not placed by the judges—the class must have been a strong one, and as far as I could see was so, but animals get so spread about, that it would be almost impossible to gather the different members of a group under one's eye in any reasonable time, unless one was present the whole time of the judging, when the lots are together in the ring.

Mr Whitfield showed 9 animals in this group, and took 8 prizes; Mr Gibb showed 8 animals, and took 7 prizes. The most valuable of Mr Cochran's Shorthorns do not leave home; but he took first prize for 2 year old and yearling

bulls, and first and second for yearling heifers. Mr Whitfield won the Shorthorn herd-prize.

As a whole, I think that, barring the Shropshire sheep, and, perhaps, the Polls, the *Herefords* were the best group in the show. Here, Mr Cochrane had it pretty well his own way, taking 7 first prizes out of 10. I do not see that any one can feel dissatisfied with the decisions of the judges of this breed; grumblers there always will be, but I heard less murmuring than usual this year.

Mr Whitfield cleared the board in the Devon group. I like his yearling bull better than the 2 year old. They are both good types of the *North Devon*, though I am told some of the papers called them *South Devons*, a non-existent breed as a pure breed, though *South Devon* cattle certainly exist; but they are generally termed *Somersets*, or were in my

The back of the *Rougement* yearling is perfect; that companion has a tendency to hollowness, which will

Devons and *Herefords*, the prizes for *Ayrshires* were well scattered about among a variety of competition. Here, I saw, for the first time since I was in Scotland, a *black Ayrshire*! I confess I took her for a *Kerry* at first, but Mrs Whitfield assured me that she was pure-bred and a recent importation. A more lovely head than Mr Irving's cow in the herd prize, I hardly ever saw. It is the fac simile of the head of one of Mr Abbott's *Guernseys*, of which I spoke in the September number of the *Journal*, and I cannot find higher praise for anything: Mr James Drummond's first prize yearling bull, promises to be a difficult one to beat in future shows. He has not long arrived from the West of Scotland, and had better luck than his worthy owner, who on his return voyage, suffered shipwreck, and passed an uncomfortable time in an open boat, only arriving the very day on which his rival, Mr Irving, was credited with the first prize for the best herd of *Ayrshires*. However, turn and turn



JERSEY HEIFER, 2 YEARS OLD, 1st PRIZE AT THE PROVINCIAL EXHIBITION, 1882.

not improve by age. I still stick to what I said three years ago: where the soil is moderately good, there is no breed of cattle better suited to our province than the *North Devon*, if selected from good milking strains. They are first cousins to the *Jerseys*, and, therefore, to our *Canadian* cattle, and they are first-rate butchers' beasts, the offal being very light, the joints neat, the meat of first quality, and they almost invariably weigh as heavy as they look. They are not great milkers, but the milk they give is very rich, and particularly suited to butter-makers from the high colour of the cream. Mr Wotherspoon, of *St. Anne's* proposes to purchase a bull of this breed to put to his heifers this next spring. If as I have heard a sale is to take place at *Rougement*, this autumn, it will be a good opportunity for investment. There is no delicacy about the strain; they are as hardy as *Kyloes*, in spite of their refined appearance. In great contrast to the

about is fair play, and, doubtless, Mr Drummond turn will come again.

Mr Brown, of *Petite Côte*, took first prize for a nice two years old heifer; but her countenance did not please one, being harsh and too stern. Mr Hodge, of *St. Laurent*, showed a two year old in this class that had hind quarters as beefy and well let down as an average *Hereford*. I do not pretend to know very much about *Ayrshires*, but Mr Rodden's first prize bull calf struck me as having many points of promise. He is certainly a growthy animal, and his hair and skin are fine to the touch.

I need hardly say that the *Polled Angus* cattle are becoming exceedingly popular in the Western ranches. Finer beef is produced by no breed, as may be seen any Christmas market day at *Islington*; and there is this great advantage belonging to them: they are heavy as well as prime beasts;

so that one outlay for freight and other expenses covers 1200 or 1400 pounds of meat, whereas, in the case of such animals as the Devons, the outlay must be calculated as 1.50 for the same amount of shipment. That is to say, that one Angus weighing 150 stones equals one and a half Devons weighing 100 stones each, which is a large allowance for the latter breed. I do not lay much stress on the extraordinary value of polled cattle as polled; for I imagine that the damage, done by horning is, if ordinary care be taken, a mere trifle; and the popularity of the Herefords in the ranches we are speaking of shows that the graziers are of the same opinion; still, in the closely packed cars it is of some advantage that such a weapon of offence as the sharp pointed horn of the Kyles, for instance, should give place to the comparatively harmless *node* of the polled breeds. The Angus and Galloways are not great milkers, but they can, like the Herefords, do their calves well, which is all that can be fairly required of them.

It was rather a bore that so many of Mr Whitfield's Angus cattle were absent at Kingston and Toronto.—I see, by the bye, that at the latter show, the Rougemont herd took, in the Hereford group, three firsts for bulls, and diploma; four firsts and three seconds for cows and heifers; and in the Angus group, four firsts and diploma, and two seconds for bulls; and five firsts and five seconds for cows and heifers! A fair allowance for one herd. Still, the display of the breed at Mile End was very good, and included some beasts from a new exhibitor, Mr Alloway, of Lachine, whose bull, Tulloch, first in the three years old class, a recent importation, does credit to judgment of the agent in Scotland who negotiated the purchase. Mr Cochrane took first prize in all the other bull classes, and first for old cows; Mr Whitfield and Mr Alloway divided the rest. In *Galloways*—a class headed *extra* in the prize list—Messrs Whitfield and Hickson were the only exhibitors; Mr Hickson having slightly the best of contest, at Toronto, I see the Rougemont herd took almost everything in *Galloways*; in *Devons*, it was far ahead of every competitor, though not quite as greedy as in the other classes I have mentioned.

Messrs J. and S. Nesbitt, of Petite Côte, in the class for *grade cattle*, won the first prize for old cows—a most uninteresting class, had it not been for the Rougemont polled-crosses. The cross between Shorthorn and Polled Angus has beaten most of the thoroughbreds at the Christmas Smithfield Club show for some years past; last year, two of this sort were led out at the last to compete for the prize as the best fat beast in the exhibition! (1) One of the Rougemont crosses was a perfect model of a beef animal and took first prize in her class. I was in hopes we should have seen a continuation of Mr Cochrane's experiment in Shorthorn and Kyles crosses, of which, two years ago, a magnificent specimen was exhibited at Mile End; as the essay began ten years ago, something ought to have come of it by this time, and I dare say next year will show us what has been done at Hillhurst in this way.

Mr Whitfield's little Shetlands attracted hardly any attention, as people in general had no idea what they were. They do not live, as I read in the papers, upon seaweed and heather, though they are hardy enough. By the bye, might I hint to the reporters for the various Montreal journals that there is no such thing as a *brown* Shorthorn? The colours of that breed are, invariably, *red*, *white*, or a mixture of the two, *roan*.

Sheep.—What people keep *Leicesters* for I cannot imagine. I am, of course, prepared to be told that they yield the best mutton in the world, just as I was informed by a Lincoln man that no meat grows on the Downs could com-

pare with a fat Lincoln wether. However, Mr Cowan's, of Allan's Corners, were as good as they make them.

The Cotswolds and other long wools, were about as usual: neither of these breeds will fetch the top price in the foreign markets, and as the whole world is at our door with fine and coarse wool to sell, it can hardly answer our purpose to keep sheep, as in former days, as mere wool producers. (1)

Southdowns.—I may as well say, at once, that there was only one sheep in this class that came up to my idea of what a Southdown should be—Mr Dawes' of St. Anno's, two-shear ram. This animal was bought at the sale of the Guelph Agricultural College last year and will certainly leave his mark on Mr Dawes' flock. His neck alone should have distinguished him in the eyes of the judges, and I hope it did; but a strong neck is, and naturally must be, accompanied by a strong, musouline head, and this was the only fault urged against him in my hearing. He is a nice ram, and of true Southdown character, wool and all.

What people who breed sheep mean by showing their animals in such infamous condition as some that I saw among the Southdown group I cannot understand. It is, evidently, desirable that stock should be shown "in breeding condition;" but "breeding condition" does not mean a condition of poverty that a wayside cottier would be ashamed to see in his flock or herd, picking up a miserable subsistence along the roads and lanes round his wretched cabin. How any judge could have succeeded in determining the relative positions of some Southdowns I saw, I do not, and probably never shall, understand. Did they toss up the conventional halfpenny? I was requested to say that I considered some of these poor creatures "models of symmetry!" They were, really, "bags of bones," and their general form was not particularly worthy of admiration. If breeders of Southdowns wish people in general to run away with the idea that their breed of sheep are little better than the unimproved native sheep of the country, they cannot hit upon a better plan than to show them in the infamous condition in which too many of this class appeared at our exhibition.

One of Mr Dawes' ewes had evidently a touch of longwool in her. This I pointed out to her owner, and he did not disagree with me; but, as all his original stock, of which this ewe was one, came from Mr Moore's flock, Mr Dawes could not account for the anomaly. At all events, the progeny of the sheep in question will be eliminated from the future breeders.

I should advise Mr Moore to get a change of blood into his flock as soon as convenient; for they are not improving at all. A little good feeding towards coupling time would have the effect of increasing the number of twins.

The necks, and general strength of character of Mr Gibbs' ewes would bear a good deal of improvement. They are too light forward, by half, and the wool, like the wool of all the ewes in this group, is, from breeding too near I suppose, losing the Southdown character.

Of Mr Whellan's, of Gloucester, exhibits I say nothing. I gave him my own private opinion about them, and I hope before another year is over he will see the force of my remarks. However, every one must have a beginning, and the most successful exhibitor of Southdowns to day, in England, was heartily laughed at when he showed his first ram at the R. A. S. Derby meeting, about 40 years ago.

The *Shropshires* of Mr Cochrane were, very unkindly, put in close proximity to the Southdowns. I won't say that they were the finest lot of sheep I ever saw, because that sort of thing irritates people. But even at the Royal Society's shows it would be hard to beat the lot, as a lot; and no

(2) A very fine lamb-ram was Mr Bernard's, of Beccil. Imported from England—price \$140!

(1) Both the property of Sir W. Gordon Cumming!

wonder, for they are all picked from the chief prize winners in England and Scotland, and the shepherd knows how to handle his shears to the best advantage, and how to bring out his show-sheep with the bloom upon them. Seriously speaking, I do not know where a young man could get a better lesson in sheep perfection than in passing a few weeks in a conscientious study of the Hillhurst flock. The old Oxford ram looked as fresh and as handsome as paint; a wild animal, labelled "Shropshire Ram," was put next him, as if to serve as a set-off to his beauties.

Pigs.—As usual, Mr Featherstone, of Credit, Ont., took all the prizes in the Suffolk and Essex classes; the Dawes of Lachine came out well in the Berkshires; and Messrs Whitman, Ouellette, and Maston, divided the money in the Poland-China class: I do not like these: Berkshires carry quite enough fat for any reasonable man. The *Agricultural Implement* department was well filled, but nothing noticeably new appeared. People detained me so un pityingly, that I had not time to inspect the fruit and tobacco sections, but Mr Goldstein tells me that Mr Foucher's tobacco, St. Jacques L'Achigan, was the best sample of Canada growth he has ever seen. The hops were, as usual, strong, but coarse: very good for a foundation, with a superstructure of East Kents or Farnhams for flavour.

P. S.—I forgot to mention that Mr Pearce, of Stanstead, sent a small herd of *Holsteins*—useful farmers' cattle, with signs of great milk giving propensities, and, if well finished at the end of their dairy career, likely to give satisfaction to the butcher.

It was a longtime before a team of judges could be found for the *Jerseys*. At last, late on the Thursday afternoon, three gentlemen, one of whom was Mr Pearce of Stanstead, began their difficult task. The chief exhibitors were three in number: Mr Cochrane, who showed eight head; Mr G. Whitfield, with ten; and Mr Reburn, of St. Anne's, who sent fifteen. I must not forget Mr Rodden, of Plantagenet, Ont., who had the honour of beating Mr Cochrane in the class for three year old bulls, and Mr F. X. Archambault, of Vaudreuil, who took the second prize for old bulls. The judging took place so late in the week that I was deprived of the pleasure of seeing these charming cattle in the ring, and one cannot well judge of them with the clothes on. All I can say then is: that Mr G. Whitfield took first for old bulls; first for yearling bulls; second for three year old cows; second and third for two year old heifers; first and third for yearling heifers; and third herd-prize. Mr Cochrane: second for three year old bull; first for bull calves; first for aged cows; first and third for three year old cows; first for heifer calves; and second herd prize. Mr Reburn: first for two year old bulls; second and third for bull calves; second and third for aged cows; first for two year old heifer; second for yearling heifers; second and third for heifer calves, and, as a crowning glory, the First Herd Prize, against two such powerful competitors as Messrs Cochrane and Whitfield.

Generally speaking, the cold, raw weather made the hair of the cattle stare so much that they did not show to advantage. If, as I hear, the exhibition in future is to take place in October, the stalls will have to be enclosed, or the effects of the weather will be still more deleterious.

There were only 20 packages butter shown, of which Mr Reburn sent the second prize tub, and seemed quite satisfied that the judge, Mr Ayer, had done justice to all. Mr Morrison, of Frelighsburg, exhibited some brilliant honey. The fruit was of inferior quality, and no wonder, with such a summer. The grapes were as sour as verjuice, and not even *Moore's Early* was fit for dessert. The *Acme* tomato seems to be the favourite in spite of its pallor, but this fruit, or vegetable, has no flavour at all this season. Why will people

persist in growing *Yellow Aberdeen* turnips? They are bad croppers here, and white turnips are far superior, if young, for table use.

The *Newell Grinder* seemed to attract great attention in the Machinery Hall, and under its present management will, no doubt, become well known to all employers of this class of implement. Its price is high but its work is quite equal to its cost.

ARTHUR R. JENNER FUST.

OUR ENGRAVINGS.

Mr Parks, the photographer, and Mr Wiseman, the engraver, have, I think, done justice to the undernamed prize winners at the provincial exhibition of 1882. By the bye, *the Journal* is established in its new quarters: 63 St Gabriel Street.

Southdown Ram.—The property of Mark Dawes, Sainte Anne de Bellevue, Jacques-Cartier Co., P. Q. First prize in the two shear class. From the Agricultural College farm, Guelph, Ont.

Heavy Draught-Horses.—These fine gray cart-horses are the property of the Shedden Co., Montreal, and took the first prize in their class.

Polled Angus Bull, 3 year old: The property of Mr Alloway, Lachine, near Montreal: first prize in his class.

Jersey Heifer, 2 year old.—From Mr Reburn's herd, Ste Anne de Bellevue, Jacques-Cartier Co., P. Q.: first prize in her class.

Notes on Russian Fruits.

At Moscow we found that we were somewhat north of the limits of successful fruit culture. Five years ago, a week of unprecedented cold had killed or injured most of the trees in their fruit gardens, and these in many cases had not been replanted. Their experience upon the College Grounds at Petrovskoe was thus confined mainly to nursery work. In 1877 during one whole week the thermometer stood between 40° and 44° below zero, Fahr., and one night went down to 40° Reaumur which is equal to 58° below zero by Fahrenheit's thermometer. This was in an exposed position on the Kremlin, and the statement is corroborated by several friends. The kinds of apples that survived this test I have a dim idea of; I say dim, for nomenclature here is much confused.

At Moscow the Forestry Convention was in session, and we had an opportunity of visiting the government forests, and renewed opportunities of feeling the kindness of Russian hearts. We drove to the government forests in coaches holding eight persons each, on side seats, back to back, drawn by four Stallions abreast. After luncheon, I was called upon (my friend Mr Budd was not present that day) to plant an oak which is the joint property of the Canadian and United States' Governments, and which may be worth several hundreds of dollars, some centuries hence.

In the Governor of Vladimir there are districts where the chief commercial industry is cherry culture. The Vladimir cherry is usually rather large in size, and, when fully ripe, nearly black, and almost sweet. In quality it is very much better than our Kentish. We find it in quantity in all the northern markets. Many proprietors have 10,000 trees, or rather bushes of, it and, entire cars, and even at times entire trains, of this cherry, leave for different localities. The climate of Vladimir is as cold as that of Moscow, and such a cherry should be imported in quantity into this province.

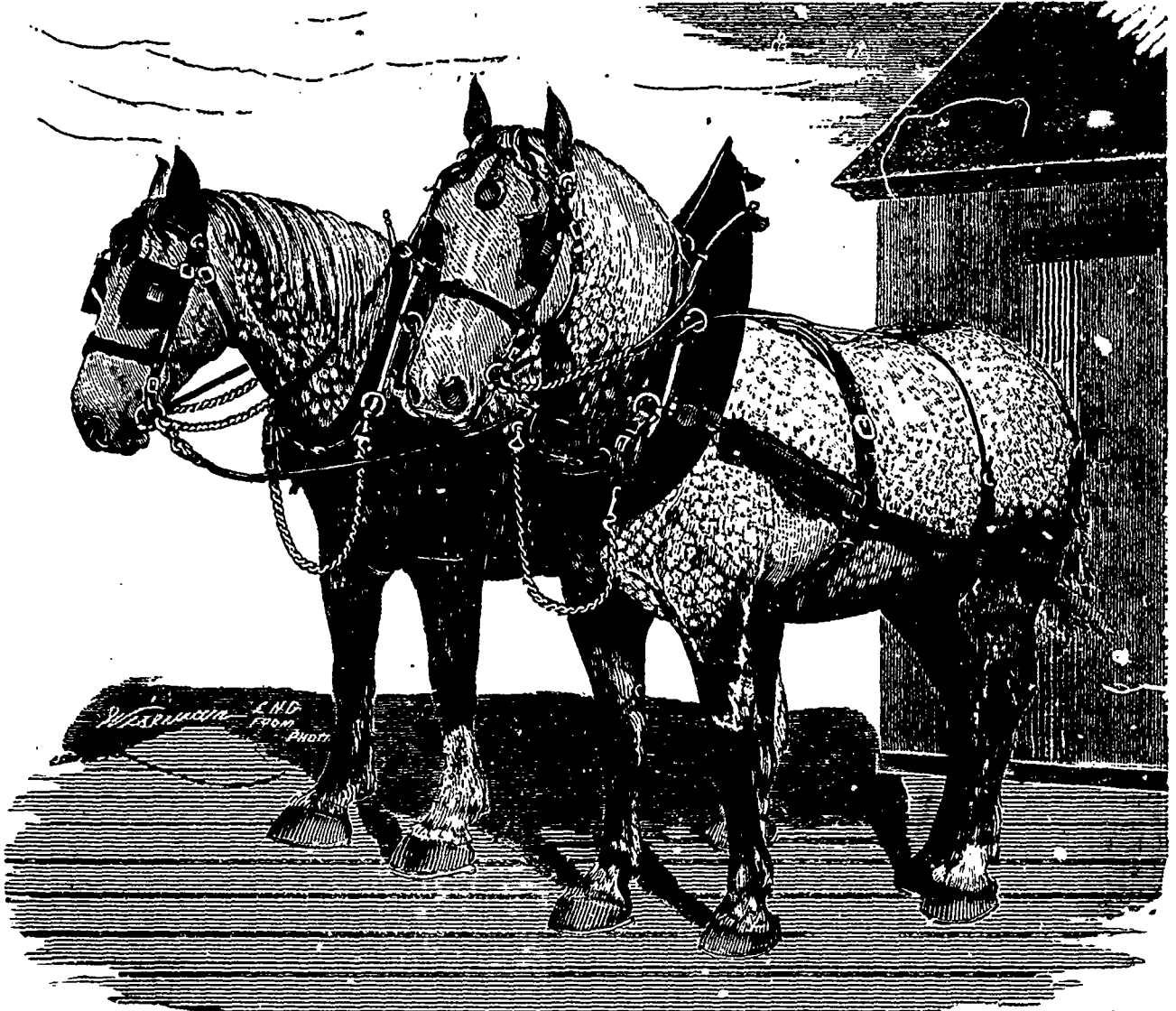
At Nijni Novgorod, at the great fair, we found the fruits of the Volga in quantity and in great variety; and here, and in Kazan, we began, as far as we could, a systematic study of them. When our object was properly understood, both the Russian peasant fruit-grower and the Tartar vendor took

an interest in our work, and many a little fruit meeting, debating some point of nomenclature, was held among these, our fellow horticulturists.

On the west bank of the Volga and to the south of Kazan, 700 miles north of the city of Montreal, there are villages where apples are grown in quantity, sometimes to the value of \$50,000, for the markets of Nijni and Kazan. In this, the coldest orchard region in the world, we find apples borne in quantity upon bushes rather than trees grown in clumps of 2 or 3 together, and these clumps 12 feet apart each way. We saw these orchards in heavy bearing, yet the

To examine carefully the peasants' orchards in these little peasant villages in these out of the way districts, is not an easy task for these who know nothing of the Russian language. Fortunately, we were accompanied on this journey by a member of the forestry staff, a gentleman who kindly gave up his time, shared our discomfort, and slept on a bundle of hay when necessary. Such kindness is not soon forgotten.

At Simbirsk, farther south yet, in latitude 54°, where it is quite as cold in winter as in the City of Quebec, we found the same varieties of the apple grown in quantity, and also



HEAVY DRAUGHT HORSES, 1st PRIZE AT THE PROVINCIAL EXHIBITION, 1882.

thermometer went down to—40° last winter. In 1877 for a day and a half, the thermometer stood at 58° below zero, Fahr. and yet these trees show no signs of having been injured at that time. Yes! there is a race of the apple of the "Annis" type hardier than the "Duchess" family or the "Alexander" family. They are slow, crooked growers, such as nurserymen hate to grow, and hate to sell after they have grown them, but they bear, young and abundantly, fruit of fair size and of really fine quality, and fruit that keeps at least till mid-winter. One would expect this apple tree to be a fair success on Pembina Mountain, in Manitoba.

many thousand pear trees. Many of these are of wild form, and unfit for eating either raw or cooked. Yet to us, most valuable as a stock upon which to top-graft less hardy varieties. Several varieties of the Bergamot, and of other types are sweet, free from astringency, and worthy of introduction. The plum in the northern regions, here, is a new race—from Moscow to Kazan and southwards, it is grown to a fair extent, and is plentiful in the markets in all the towns. This I did not expect. The improved varieties of the wild plum of the North Western States is probably the best plum for colder sections of Canada. Yet these Russian plum bushes

are heavy bearers. Some are red, some white, but mostly blue, and the best of them are very nearly as good in quality as Lombard, if not quite equal.

We continued our journey down the Volga, visiting the orchards at several of the towns until we came to Seratov, in lat. 51 $\frac{1}{2}$, where we found an orchard of 12000 trees which had lately employed 300 pickers and 85 packers, and had sent what is equal to 1000 tons of apples, to the Moscow market. Here, we find an orchard of 500 pear trees, and yet there are times when the mercury becomes solid.

As we turn westward into central Russia, we find new varieties of the apple. The Annis, grown probably for hundreds of years on the Volga from Seratov to Kazan, is unknown at Voronezh, and the Antonoyka takes its place. The best varieties of the Russian fruits, fortunately, have been included in the collections sent from Moscow to the Agricultural College at Ames, Iowa.

I have said enough to show that the area of the apple, pear, cherry, and plum, can be increased northwards in our country very materially. Yes! at small expense many of these good varieties could be imported, propagated, and scattered broadcast.

Will not our Provincial Government do something to reach and scatter the blessings now known to be easily within its reach.

Orel, Russia, 16th Sept., 1882.

CHARLES GIBB.

Dear Jenner Fust,—There is very little for me to write to you about the horses shown at the Exhibition in Montreal, this year, for, with a few exceptions, it was as moderate a show as I have ever seen; but I will do my best, and tell you what I thought. To begin: in the thoroughbred stallion class there were only three shown, "one Dime," "Perron," and "Tubman;" the first was certainly not in the condition that a thoroughbred sire should be, and even on a race-course, I should have called him *very* "fine drawn;" the second, though good looking, was much in the same condition, being further disfigured by having an enlarged fetlock; and both appeared to be suffering from hard work on hard race-courses!!! of the third I need say nothing as he is well known, and has the advantage over the other two that several of his get were at the show. In my opinion I would only have awarded *one* prize in this class. There was a fine big two years old colt shown by Messrs Dawes and Co., of Lachine, which though, perhaps, a trifle leggy at present, will no doubt improve as he grows older. The thoroughbred mares were a better lot, notably that fine imported mare "Sweetbread," who, though getting on in years, does not show it, and is certainly worth buying as a brood mare still. "Graluca" is also a fine specimen, and besides being younger than the other, is a capital feeder and has been hunted; both these mares were put up for sale, but, strange to say, there was no bid for either.

In the Saddlehorse class, the honourable Mr Cochrane again carried off first honours, and very justly, with his beautiful cob mare, which was so much admired last year; the second prize was given to a fine, strong, dark chestnut mare, belonging to Mr Carsley. Though she is a little "green" at present, she ought to make a grand weight carrier if properly handled. There was only one competitor in the jumping class, a handsome bright bay, and had he only been better ridden he would have better deserved the prize he got; had it not been known what the horse had done when in other hands, he would hardly have "caught the judges' eye."—Mr Drummond again got "first honours" with his little gray, who seems to jump better than ever, especially when his

rider had been persuaded to take off his spurs and drop his whip!

In the competition for the citizens' prize, there were no entries for the heavy weight carriers, but in the light weight, the Montreal Hunt Club carried off 1st and 2nd prizes; the former with a nice, compact, strong chestnut mare, called "Allandale," which jumped beautifully, the latter with a fine dark bay, "Roderick." Both horses are a credit to the Hunt.

The carriage horses were not much to look at, with the exception of a pair of blacks, which however only got third prize. The latter were well turned out; their tails out, and looked a very serviceable pair; while all the others had long tails almost touching the ground, and had a very "peacocky and gingerbread" look about them.

We now come to the best class in the show—the heavy draught horses and Clydes. The Sheldon Company took 1st prize with a magnificent pair of grays, one of which was in the winning pair last year, the mate having unfortunately died from lockjaw, caused by running a nail into his foot while carting a heavy load from some yard. By the way, I was told that this company have several pairs suffering from the same thing; and this shows great carelessness, I cannot help thinking, on the part of merchants allowing pieces of wood with nails in them to lie about in their yards. After a great deal of trouble and expense, the manager of the Company succeeded in finding a mate, and they now have a splendid pair, one weighing 1700 lbs and the other 1800 lbs, a pair which would be hard to beat in any show-yard.

The Clydo stallions were a good lot, especially the winner of the 1st prize, which I think was imported last year from Scotland. He is a fine dark brown, standing on good short and strong legs. I was sorry not to see any Suffolk Punch Stallions, as in my opinion (1), they are the class of horse we want in this country to cross with our Canadian mares being a trifle more active than the Clydes. There were some fine specimens in the brood mare and foal class; the mares in several cases being in splendid condition, and the foals strong and healthy-looking.

As you will gather from these few remarks, I was not very favourably impressed with the show, and I cannot help thinking that if these exhibitions only took place once in every two or three years that they would be more successful, for then larger prizes could be given. At present, if a competitor has only one animal to send, and that from any distance, even though he should be lucky enough to get a prize, he is almost certain to be out of pocket; and this is not much of an encouragement! Very truly yours,

E. A. C. CAMPBELL, M. F. H. (2)

The Horticultural Exhibition.

A dull, cold, wet summer! Consequently, neither flavour nor colour in the fruit, no brilliancy in the flowers. How very unlike our usual statement as regards a Canadian horticultural exhibition. I positively felt sad for the committee of management: their task was uphill work; and, painfully executed as it was, must depend for its reward upon the recognition of the judicious few among the spectators.

A bunch of *Muscat* grapes, of the *Bowood* strain was the first thing that struck me. It was rather an agglomeration of bunches than a single bunch; the thinning had been most carefully performed, so that each berry while attaining its maximum size had not the air of solitariness exhibited where the thinning has been too lavishly executed. The *Black Hamburgs* wanted colour, and therefore flavour, for even

(1) And in mine, too. A. R. J. F.

(2) These mysterious initials, I may tell our non-sporting readers, stand for "Master of Foxhounds."

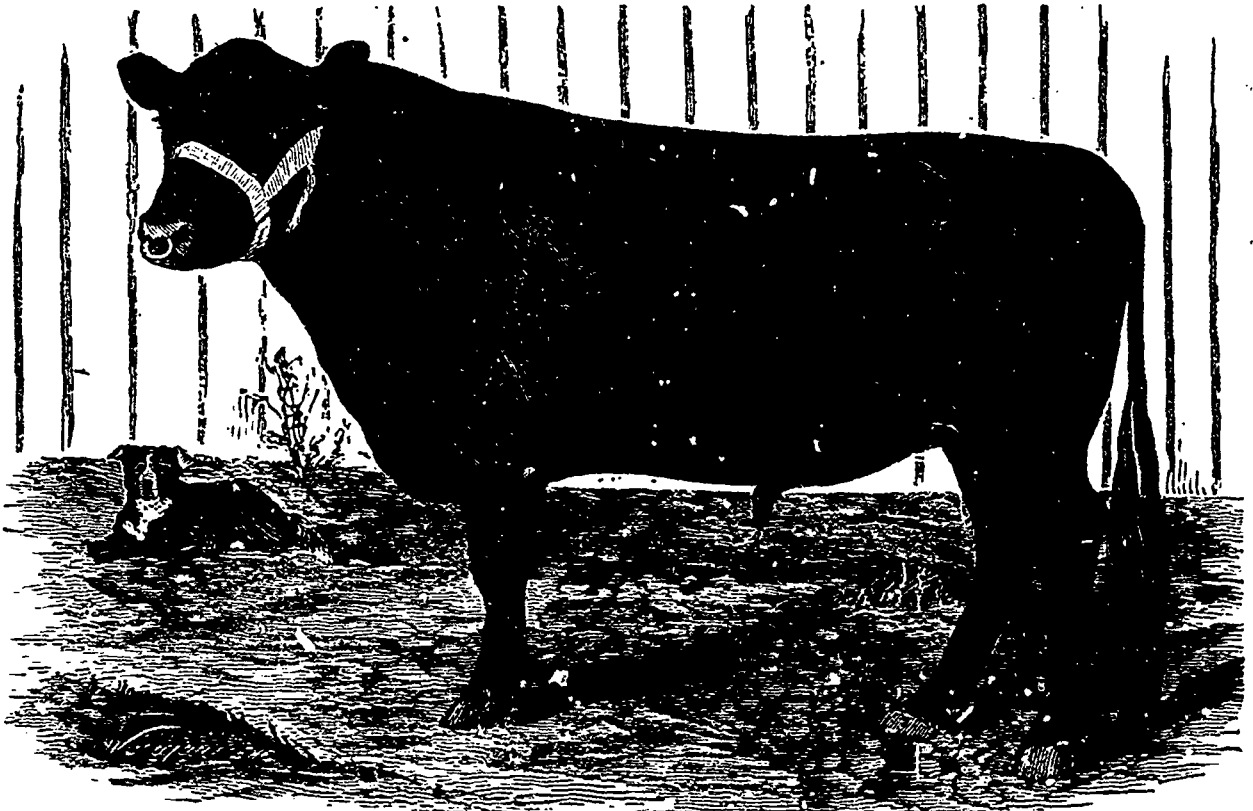
in the hot-house, though heat might have been sufficient, the absence of sun could not be remedied. Some of the *Sweetwaters* looked ripe and juicy, but that they always do, whatever the season. Plums, not numerous, and not inviting to the eye. *Flemish Beauty* pears, evidently hard, though large and well formed. Mr O'Hara's eight sorts of pears won the prize without giving the judges much trouble.

A very large *outdoor grape*, "Foster's seedling," was as sour as verjuice. Its proper place, in this climate, is under glass. *Wington*, the same, and even *Moore's Early* was not ripe. The *Champion*, as I was happy to see it called on several tickets, the name *Beaconsfield* only appearing on one, was no riper than its neighbours. In fact, what with the absence of snow last winter, and the cold, sunless summer, I fancy the prospects of large vineyards in this our province are rather at a discount. A few vines for home use may be

to these *Soja Beans*. Whence come they? Are they better than other beans? Mine do not seem to cook well. Is the *j* pronounced like *y*, Italian fashion, or like our own *j*?

A rare bunch of tomatoes, not for competition, from St. Aur and a fine lot of that fruit in the general list; still the *Jimens* were nearly all badly ripened. The earliest tomatoes were by far the best this season.

A blush-rose, from Mr Smith (which Smith?), had no name attached, but it was a lovely thing and richly merited the first prize it received. How soon the gas at night destroys the beauty of these tender flowers! Were it not for the receipts being of absolute necessity to the existence of the exhibition, it would be well to close the doors before artificial light becomes necessary. But, alas, on Thursday and Friday, from 3 o'clock to 6 o'clock, when I was present, there were never more than 15 people in the Rink at one time! The



POLLED ANGUS BULL, 3 YEARS OLD, 1st PRIZE AT THE PROVINCIAL EXHIBITION, 1882.

all very well; but, except in sheltered spots like the Montreal College grounds, no extensive plantings are likely to produce anything but loss and irritation to their proprietors. I have not yet heard of wine being sold at Longueuil for five cents per half pint, retail!

Mr Davidson's basket of vegetables was most artistically arranged. It really was a superb collection beautifully presented. The Aubergines were the weak point, but as I only succeeded in getting two eggs out of 25 plants, this season, I do not wonder at other peoples' failures. Celery, as a whole, was fine, but loosely packed, and the hearts had no solidity.

A wonderful show of *Soja Beans* from Mrs Girdwood, of *Isle aux Prunes*! It is an awful statement to make, but I cannot see how the yield of such as I saw, if planted at 18 in. by 6 in. could be less than one hundred bushels to the acre. I know that in 1868 I grew 68 bushels of common beans to the acre, and, in England, I have seen 80 bushels of horse-beans, but neither of those crops were to be compared

evenings were crowded, I am told; showing that music, the promenade, and the crowd, are the real attractions of the exhibition; a not very flattering testimony to the prevalence of good taste in Montreal.

One plate of peaches was superb; but two poor specimens of that fruit, growing on a faded tree in a pot by its side, were not exhilarating objects. Cut flowers soon fade in this climate, so it was hardly in my power to distinguish, after the first day, between the first and second rate: some dwarf Phlox, from Mrs Girdwood's, were lovely to the last. What wonders are done for this originally sprawling flower *Bouquet*—what has the English word *Nosegay* done?

ARTHUR R. JENNER FOST.

The Forestry Association of the Province of Quebec, Canada.

On Wednesday, September 20th, the first meeting of this important society took place at the Forestry Chambers, St.

James' street, Montreal. Judging from the numbers present, none of whom, as far as I could judge, were attracted by mere curiosity, the association has started on its course with a fair prospect of being a popular institution. And not only was the 'assistance' numerous, but, as is so desirable in these cases, the audience was composed of very varied materials. There were medical men, lumbermen, agriculturists, as well as purely scientific men; and all seemed to be deeply interested in listening to the different plans proposed by the promoters of the scheme for forwarding the objects of the institution.

The honourable Mr Joly, who was, naturally, called to the chair, remarked that as long ago as 1690 A. D., attention was drawn to the horrible waste of timber that was going on in this country. A law seems to have been in existence up to a recent period, that each farmer should keep clear of wood a space of thirty feet from his neighbour's crop, for the admission, it was presumed, of light and air in aid of the better maturing of such. But the late Mr Kierokowaki moved, in the House of Assembly, at Quebec, that this law should be abrogated, because, if it were enforced, the end would be that there would hardly any timber left on the farms. In order to protect the forests, the interference of government was indispensable, and, he was happy to say, the duty was felt to be imperative by all the members of both houses in the provincial parliament.

Ten years ago, Mr Levesque endeavoured to create an association for planting forest trees in barren places, and for re-wooding tracts of country which had been despoiled of their original wealth of timber. Every member of this body was bound to plant a certain number of forest-trees, and to report upon their growth, condition, &c., from time to time, that the progress of improvement might be made known to the public.

Mr Joly, then, went on to say that, as in the United States, a day should be appointed for a general fête. "Arbour day," it is called there. Whether this day should be in the autumn or in the spring, he left for after decision. On this festival, it might fairly be hoped that bands of children, released from their studies for the day, would assist their seniors in the general task; and as years went on, the story of their joyous work would fall pleasantly on the ears of their progeny, inciting them to renewed efforts in the great and patriotic enterprise thus inaugurated; until all the inhabitants of the province would be led by custom and habit to regard the denizens of our forest lands with feelings of respect and love.

Mr Lynch, Commissioner of Crown Lands, observed: That this was no party question, of which there were, already, far too many. He was empowered by government to say that the movement in contemplation had its heartiest support; and he, individually, would spare no effort to promote the success of so worthy, so beneficial a scheme.

Mr Lyman thought there were two parties concerned: the government and the people. The duty of the former was to act, and the latter should so fortify their hands, that, encouraged by their sympathy and support, the work might go bravely on without those harassing delays which party opposition so often has caused to the best laid plans.

After Dr Sterry Hunt had mentioned his protest, as long ago as 1857, against the destruction of trees for the purpose of converting them into potash, Mr Barnard, Director of Agriculture for the province, said: that it was highly advisable that every member of the association should plant a certain number of trees, or sow a fair quantity of seed if that should prove the more suitable method of procedure. But his task would be only begun, then: he, if he be minded to fulfil his whole duty, must never rest satisfied until he

had induced his neighbours to follow his footsteps in the same path; and all who were present should, on their return home, endeavour, by counsel and explanation, to spread abroad an accurate conception of the aims of the association. As for the day for general planting, he thought the spring would be preferable to the autumn; and he particularly dwelt on the wisdom of allowing the children, always under the guidance of their instructors, to share in the fête, for then, probably, our eyes would soon cease to be annoyed and our taste reproached, by the intolerable nakedness of our staring school buildings. A provincial association should be at once formed for this purpose, which, in time, could be united to one embracing the whole of the Dominion of Canada.

A. R. J.

PROVINCE OF QUEBEC FORESTRY ASSOCIATION.

Another meeting to further the promotion of a Forestry Association for this province was held on Saturday, September 30th, under the presidency of the Hon. Mr Joly. There was a good attendance, among those present being Messrs. J. K. Ward, J. A. U. Beaudry, Barnard, Adams, H. Lyman, Mr Perrault, Drs Alloway, Howard, Hart, and others. Mr Stewart Fane acted as Secretary. After a few introductory remarks from the Chairman, a letter was read from the Hon. W. W. Lynch, Commissioner of Crown Lands, Quebec, in which he said: "My duties here will prevent me from being in Montreal to-morrow. I can only repeat the assurance I gave the other night, that the movement for the organisation of a Forestry Association has my hearty approval, and I will gladly cooperate in any way I can to ensure its success.

I find, on referring to the Act of last session respecting the encouragement of tree planting, that it comes into operation only on proclamation of the Lieutenant-Governor in Council. I am to-day taking the necessary steps to have such proclamation issued. I wish the gentlemen who meet to-morrow would kindly give me their idea as to the best day for "Arbor Day" under that act.

The report of the committee appointed at the last general meeting was read, and the various clauses discussed seriatim. On clause 1, referring to the Association's title, Dr Alloway objected to the name of the Province of Quebec, only, being given. Why was the name of Canada kept continually in the background? Were they ashamed of it? Many people did not know where Quebec was, but they did know Canada.

Dr Alloway's objection was met by deciding to call it the Association of the Province of Quebec, Canada. Several clauses were discussed and agreed to. One, allowing the officers and delegates of the American Forestry Association to be ipso facto members of the Forestry Association of the Province of Quebec, Canada, was passed on the motion of Mr Barnard, seconded by Mr Baylis.

Clauses 6, 7 and 8 were amended, providing for the management of the Society as follows:—"That there should be one president, two vice-presidents, two secretary-treasurers, a council of sixteen, and a general committee."

The meeting then proceeded to the election of officers for the ensuing year, with the following result.—

Honorary President, Mr James Little.

President, Hon. Mr Joly.

Vice-Presidents, Messrs. J. K. Ward and Massie.

Recording-Secretary, Mr Jos. Perrault.

Corresponding-Secretary, Mr E. Barnard.

Treasurer, Mr G. L. Marler.

COUNCIL:—For Montreal—Messrs. W. Little, Henry Lyman, Henry Evans, Dr Henry Howard, Hon. Louis Beaubien, Messrs. J. A. U. Beaudry and Wm. Robb.
For Quebec—Messrs. Louis Bilodeaux, Colonel Rhodes, S. Lesage, A. Blondin,—Beaucour, A. Dupuis (St. Roch.)

Abbotsford—Mr Ohas. Gibb.
 Longueuil—Mr J. M. Browning.
 Chateauguay—Mr R. Jack.
 Three Rivers—J. B. Normand.

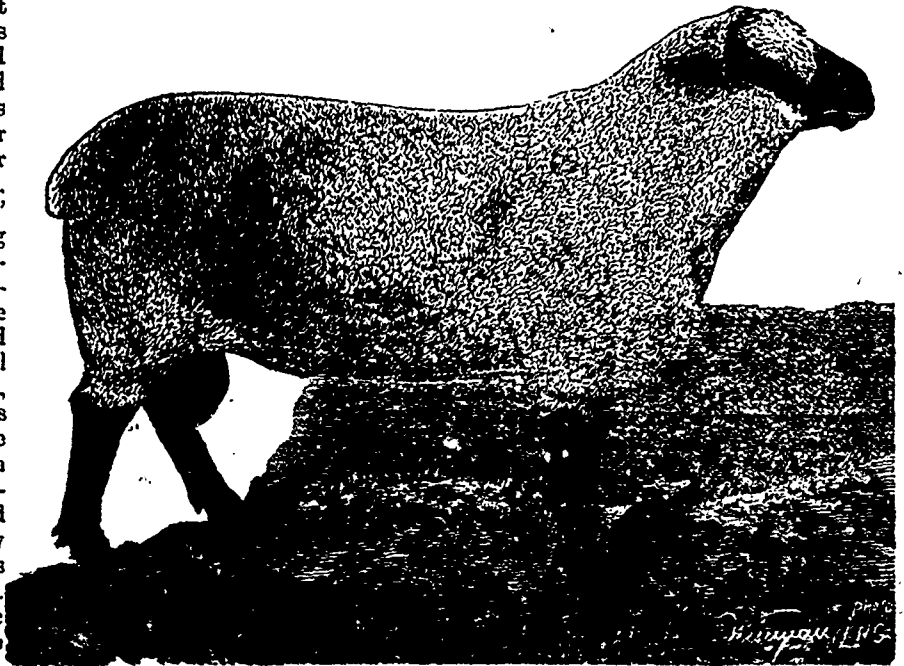
A long discussion then took place respecting the suggestion about "Arbor Day" in Mr Lynch's letter, and some differences of opinion were expressed as to when was the most appropriate time. Dr Howard said he thought when the day was appointed it should be kept as a general school holiday, so that the importance of tree culture would be impressed on the minds of the scholars. Eventually it was decided to inform Mr Lynch that in its present position, the Association did not feel itself quite prepared to fix upon a special day.

After other business, the meeting separated.

Artificial Harvesting.

The judges appointed by the Royal Agricultural Society to test the merits of the different appliances adopted by the competitors for a prize of 100 guineas offered for the most efficient and economical method of drying hay or corn crops artificially, either before or after being stacked, have now made their report. There were eight competitors, six whom employed the "Neilson" system of exhaust fans for drying in the stack; the two remaining competitors using, in one case hot air applied before stacking, and in the other a system of ventilation assisted by hot air applied after stacking. All the inventions were tried on hay, but a selected three out of various adaptations of Neilson's system were submitted to an extended trial both on hay and barley. In the end, however none of the exhibitors proved that they were able to make good hay in wet weather. In a few instances where fairly good hay was obtained, equally good, if not better, might have been secured without the application of fans. The trials of the three selected fans upon corn were even less satisfactory than those upon hay, none of the machines having succeeded in effectually drying the corn in the stack. Under these circumstances the judges report that they do not feel justified in awarding the prize.—The rick of hay erected for the purpose of testing the practicability of harvesting in the stack has been cut at Cathay Park, Cardiff, under the superintendence of Mr. Tomplemore, Lord Bute's steward, who has closely watched the progress of the experiment. The rick, which has been carried during the Bath and West of England show in May, was composed of grass in an unripe condition, much of it wet and considerably trampled upon, and only useful for the purpose of proving the utility of Mr. Phillips' process of ventilation. The following is stated as the result: The appearance of the rick is that of well-made and thoroughly harvested hay of good colour and pleasant aroma. These are the general appearances, but there is an exception. In the centre of the stack there was found a bulk of grass, apparently of about four cubic feet, which has turned completely black under the action of the heat. There was, however, in this no trace of combustion, the hay being, in point of fact, as sweet as in any other portion of the stack. The discolouration was attributed to the fact that but one ventilating shaft had

been used, and that the grass when stacked was in such an unripe condition that in places it speedily caked, rendering ventilation impossible. The experiment, therefore, has proved that it is possible to save crops of hay, which, when half-made, have hitherto been in a great measure lost through unfavourable seasons. As regards cost, the appliance used in this experiment would be within the reach of even the smallest farmer. The total outlay to enable him to deal successfully with half-a-dozen ordinary-sized ricks would not exceed £20. In nearly every case, too, this sum would be more than saved by the very superior condition of the hay. Another rick of meadow hay, which had been subjected before being stacked to Mr. Gibb's drying process, has also been tested. This was more matured when stacked than that in the rick previously experimented upon. It was now found to be in a very dry and clean condition, but it seemed to lack aroma and many other properties which go to make good hay. So up to the present times, artificial harvesting, whether of hay or grain



SOUTHDOWN RAM, 1st Prize at the Provincial Exhibition, 1882.

most be pronounced a failure. A. R. J. F.

Lies, and arrant nonsense.

An agricultural monthly from Ontario, which prints regularly what it knows to be a falsehood at the head of its paper, and calls itself; "the only illustrated agricultural Journal published in the Dominion," comes out again with several tirades against French-Canadians—one of which reads as follow: "The rural population of this Province (of Quebec) is chiefly French, and strictly under the control of the Roman Catholic church. And it has been the rule of that church to require from the farmer one tenth from the principal products of his land"... We shall not stop to discuss, but it may be useful to state, the true facts of the case.

First, the French-Canadian farmer remains under the control of the Roman Catholic Church wholly from choice, being entirely free, by law, to pay no tithes to the priest by a simple written declaration that he has ceased to belong to that church. Second, instead of having of to pay one tenth of the principal products of his land, the farmer actually pays for the support of his pastor, and for other charitable objects, $\frac{1}{2}$ part of the grain he thrashes, and absolutely nothing

ing else: that is, about $1\frac{1}{10}$ of a farmer's usual gross returns.

Now, as every principle of good farming requires that but a small proportion of the farm should be in grain, and as the principal return should be in stock and its produce, in green crops and hay, it is both foolish and wicked to tell lies in order to support the claim that, if the French-Canadian farmer does not improve as fast as some would wish, it is the fault of the priest.

"I would like you to tell me what you consider the best way of clearing land of timber. It appears to me that the usual plan of cutting-down the trees at 3 or 4 feet from the ground and leaving the stumps to rot, is little short of barbarous. At any rate I want to *clear the land at once*, and that confessed, do you think it best to *haul down* the trees, root and all, after some preliminary cutting round the latter, or to cut in the ordinary way and then extract the stumps with a machine, "Stump lifter."

I read, somewhere, that the former plan had been adopted with success. I mean to *try* the *pulling* down process, at any rate. I think an article on this subject in your Journal, "would be generally acceptable."

No doubt it would be somewhat better for the land to leave the stumps, or rather, roots of trees to rot in the ground, but I think the benefit thus derived is rather dearly bought. Usually, the soil in woods is mainly composed of such rotted vegetable matter, and a little addition can scarcely be of much moment, where such an amount of unsightliness already exists. *Ed.*

The Progress of Electricity.

Dr. Siemens, the great promoter of electric-work in general, has in hand a tramway at Portrush, Ireland, to be worked by electricity. It is calculated that the cost of haulage per ton, per mile, will be two cents; whereas, by horse-power, it would cost twenty-two cents, and by steam-power fourteen cents. The cars will carry their own locomotive power; there will be no engineers or stokers, and no heavy engines to wear away the permanent road, which may, in consequence, be made in much lighter and cheaper fashion than those in present use.

At Godalming (O luoghi ameni), in Surrey, Eng. the river Wey, a mere ditch by the bye, with hardly any fall, drives the Siemens dynamo-machines, which light the village by night at a mere trifling expense.

The new tunnel under the Alps is not being pushed very rapidly at present, for the opinion of the most skilful engineers is, that before three years are expired, steam, as a motive power, will have given way to electricity. In fact, there seems to be a consensus of ideas in the engineering world, that we are on the eve of a great change, and that it would be well to pause before undertaking any great work.

A. R. J. F.

AGRICULTURE.

PARIS, MAY 1882.

France may be said to have no Herd Book, save for Durhams, which only dates from 1871; yet she has several excellent native breeds of cattle, whose purity merits a special register; her famous breed of Percheron horses has no hereditary archives of which to boast; the United States, which commences to buy up all these valuable horses, keeps a record of the race. The Durham breed of cattle has many opponents in France, and a study of the statistics respecting the animals of this race, born in, or imported into France, reveals a few interesting facts.

The records of the Herd Book in question are official, and comprise the period, 1871 to 1879; during the former year,

there were 530 Durhams born in France, of which total, 238 were males, and 292 females. In 1876, the births were 659, comprising 323 males, and 336 females: in 1879, the births were 560, and consisted of 263 males, and 297 females. A glance at these figures, exhibits the great disproportion between the sexes: the females, uniformly predominate over the males. This peculiarity, besides, would appear to, be special to the short-horns. Normally, the sexes maintain almost an equilibrium, as over a wide range of births, the males predominate slightly, in the ratio of 106 to 100 females; but as shown by the foregoing totals, the ratios are: $81\frac{1}{2}$, 96, $88\frac{1}{2}$ males, to 100 females, respectively. This is the result of the law of "heredity", by which breeders direct their efforts to *weak* the temperament of the bull in order to produce what is known as fineness.

The figures further indicate, that, while in 1879, the total of registered Durhams was 530, and in 1875, 659, the number in 1879, fell to 560. This diminution is to be attributed simply to a falling off in the number of rearers, and a fact very curious, that while the breeders of Durhams belonging to the upper, or aristocratic, classes remained invariable, those who may be ranked as working agriculturists, have relinquished the breeding of Durhams, as unremunerative, while the wealthier classes continue the rearing, apparently as a luxury.

Very great attention is given at present in France to irrigation. Soil is female, water male, says an Arabian proverb. To be able to irrigate land appropriately, is to bring fecundity, where without such, the soil would remain sterile, despite all labor and manuring. But the agriculturists must be instructed how to employ, and economically, the water within their reach, from springs, rains, and streams. The department of the Var is one of the driest in southern France, and one which has most suffered in its vineyards from the phylloxera. Proprietors have employed steam engines to pump water from rivers and inundate the vineyards in autumn, thereby drowning the phylloxera to a large extent. The cost of plant &c. amounted to 2,400 f. per acre in the year 1875, when the flooding began to tell; in 1881, vineyards which six years previously represented but a dead loss, yielded a clear profit in wine of 1,000 fr. per acre, or 25 per cent. The expenses would be very much less, where the water is furnished by canal, or tapped from springs. Small proprietors frequently unite to secure a water supply, for if submersion in autumn be not a cure for the phylloxera, it certainly minimizes its ravages.

The *rôle* of water in vegetation is most advantageously ensured, when the irrigations are intermittent, instead of non-continued, between April and September: the sheet of water arriving on the soil after an interruption, forces the stratum of air, which has replaced the first watering, to descend into the soil, renewing there the atmospheric oxygen around the roots of the plants. Two or three irrigations per week suffice. The same number of irrigations is not required for every kind of culture; as science has demonstrated, there is a connection between the weight of water which ought to pass by evaporation of the leaves through a yield, and the gross weight of that yield. That connection represents 60 times the yield in the green state: in other words, less the produce in a green state, less the quantity of water required.

A discussion is taking place respecting potato stalks as forage, either in the green state, or in the latter when dried.

The first point to consider is, how far the removal of the stalks affects the development of the tubers. Opinion is next to unanimous, that removed too soon, either before coming into flower, or shortly after that stage, the formation of starch and dry matters in the tubers is arrested. The researches of professors Nobbe and de Tharand on this point are conclusive. Further, it is only after the formation of the flowers,

or aërial organs, that the plant commences the rapid development of the tubers. Suppression or thinning of the stems, is only justifiable when they are over luxuriant and keep out air, sun, and light from the soil. According to Steckhardt, the chemical value of clover as compared with potato haulm, is as 3 to 2: he and also de Stecher testify, that the haulm neither affects the yield of milk nor the quality of the butter; these drawbacks are only produced, when the apples or berries are attached. With 30 lbs. of haulm, 15 of beet leaves, and 7 of straw, cows thrive well, suffering at first slightly from diarrhœa: the latter disappeared, so that 60 lbs. of haulm, could replace a proportionate reduction in beet leaves.

Oxen are extensively employed in farming operations; in summer their daily labor is divided into two periods, so as to avoid the hours of highest temperature. Taking 7 or 8 hours a day, as ample for them working, the oxen are yoked at two periods: from 4 to 8 a. m. and 4 to 7 or 8, p. m. White colored oxen support the heat best, as do also those bred in the plains.

Mr Pasteur is prosecuting new experiments bearing upon inoculation against peripneumonia in cattle; so far, his labors lead to the belief little he will be as successful in his new field as he has been in the case of the *charbon malady*. Having stated he required funds to purchase subjects, the sum of 10,000 fr. was immediately subscribed by agriculturists and societies.

At the Chateauroux cattle-show, a very simple and ingenious force pump with plunging piston was exhibited: the piston, which acts as a handle, working in a small tube sends the liquid into a larger one; the latter is in sections, the joints secured by india rubber rings; it pumps 100 quarts a minute of urine, or well water; is eleven feet long, weighs 80 lbs.; throws a jet of liquid to the height of 23 feet, and costs 50 f.

Despite the prevailing rains, farmers count upon this being a good season for cereals. The harvest in the south of France is over, but the draught has told on the yield. In these regions, canals, to irrigate the parched soils, are sadly needed. Green crops are making up the way, but would be greatly improved by sun: the vineyards are not likely to realise their promises.

Opinion is not at all satisfied at the Senate throwing out the bill for re-admitting pork from foreign countries. Bousingault, Chevrenl and Milne-Edwards, urged good boiling or freezing the pork, as the best plan to counteract the effects of trichinœ. Mice, it was maintained by Dumas and Milne-Edwards, were among the most prolific agents for propagating trichinœ: they consumed the diseased pork, and were in turn often devoured by the pigs. Veterinary inspector Bouley laid down, that the microscope was incapable of detecting the parasite in pork. One fact is clear, that the exclusion of American pork, is a serious blow for farmers with many servants to feed.

Agriculturists are commencing to find out, that it pays to compress hay, thus rendering it more transportable, and capable of reaching a dearer market. The Omnibus Company of Paris has realized last year an economy of 90,000 f. by purchasing forage in the provinces, pressing, and sending it up to Paris, by rail and canal.

A gardener steeps the mats he employs to protect frames and conservatories between October and May, for 24 hours in a solution of sulphate of copper, in a large hogshead: having allowed the matting to drain and become half dry, he plunges it for a few seconds in a solution of quick lime. Matting thus prepared, will last instead of one, seven seasons. The cord employed in the matting must not be oiled.

Mr Benoit, a gentleman of the highest reputation, has just

opened a depot in Montreal for the sale on commission of all sorts of farm produce. As will be seen in our advertising columns, he is able to refer to many of the most respectable firms both in Quebec and Montreal, and we feel sure that any one confiding his produce to Mr Benoit will receive due satisfaction.

Deep Cultivation.

An able correspondent of this journal remarks in a late number on "the mischief done by writers a few years ago, who gave credence to the error that 'deep down in the soil vast treasures lie,' and so the deep plowing craze had its thousand of victims." He quotes the examinations made by an eminent chemist in a locality where the soil contained less nitrogen as he went downward, as a proof of the justice of his remark. There is no doubt that the soil occupied by our correspondent was good near the surface and poor below, and the mistake he made—an error into which writers are repeatedly falling—is in making a general rule from a narrow locality.

There are two conditions of soil which are not benefited by deep plowing; these are such as have a sterile subsoil, and those which are porous below. A sterile subsoil does not benefit the richer top soil by intermixture with it, and a porous subsoil does not need loosening. But a soil rich above, and poor and impervious below, may be much improved for withstanding the effects of reserve drouths by subsoiling and loosening to some depth to receive like a sponge the heavy rains which fall upon it, and to give out from this reservoir the needed moisture to growing crops when drouths prevail. We have seen some striking instances. A row of potatoes planted over a covered ditch yielded double the crop given from either of the adjacent rows, the quality of the soil being the same; but the loosened earth over the ditch prevented the effects of the severe drouth which affected the adjoining rows. In the same way an advocate for manuring with electricity proved his theory, as he thought, by running a wire from a lightning rod under a row of beans, which were greatly increased in growth. The theory, however, was overthrown when it was found that the same increased growth was produced away from the wire by loosening the subsoil as much as was required for burying the wire. The great increase in the potato crop by thorough subsoiling was shown some years ago in a season of unusual drouth in a field of several acres, which yielded more than triple the amount per acre obtained from other fields which were planted after common or shallow plowing and the whole crop being sold at seventy-five cents a bushel, gave over a hundred dollars from each acre.

These instances occurred where the subsoil possessed no unusual fertilizing quality, the benefit arising from its acting as a sponge or reservoir for moisture, as well as for the deeper extension of the roots. But in very large portions of the country, a great positive benefit has been found by bringing up and mixing portions of the subsoil with the earth at the surface. A farmer in one of the western counties of the State, in preparing the land for wheat, set the plow to run two inches deeper than the plowing in previous years. The result was that his wheat crop was increased eight or ten bushels on an average. A still more striking instance occurred on another occasion, of the benefit of an intermixture of the subsoil with the surface. An open ditch had been cut through a field to drain a small pond. The earth taken from the ditch was scattered over the surface for a rod on two or each side. The field was then sown to wheat. The subsequent winter was very severe on this crop, and the following summer proved unusually unfavorable. On most of the field the product did not average over five bushels per acre—it was scarcely worth cutting. The two strips (on each side of the ditch)

on which the subsoil was spread, yielded a. the rate of twenty bushels per acre. This contrast was not owing to the drainage effected by the ditch, as the soil and subsoil of much of the field rested on gravel and had a natural drainage.

Farmers must adapt their practice to circumstances. If the subsoil is both sterile and porous, there would be no object whatever in deep plowing, unless possibly for gradually deepening the manured top soil. If sterile but impervious, it should be subsoiled—not trenched plowed—to deepen the reservoir for the absorption and supply of moisture. If it possesses enriching qualities, the plowing should be deep enough

to bring up a portion to the surface, and if in addition to its fertilizing effects, it is impervious to water, the subsoil plow should be used in addition to running the common plow deeper than before. It is hardly necessary to add that all impervious subsoils need thorough underdraining as an indispensable requirement in connection with subsiding.

We might offer conjectures as to what the fertilizing substances were in these enriching subsoils, but our present purpose is merely with the established facts.

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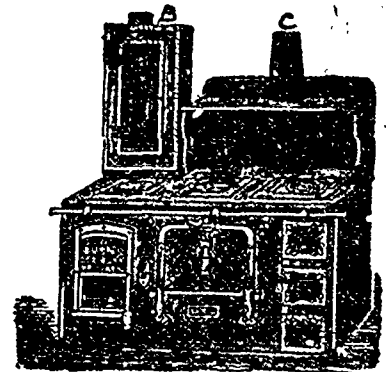
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