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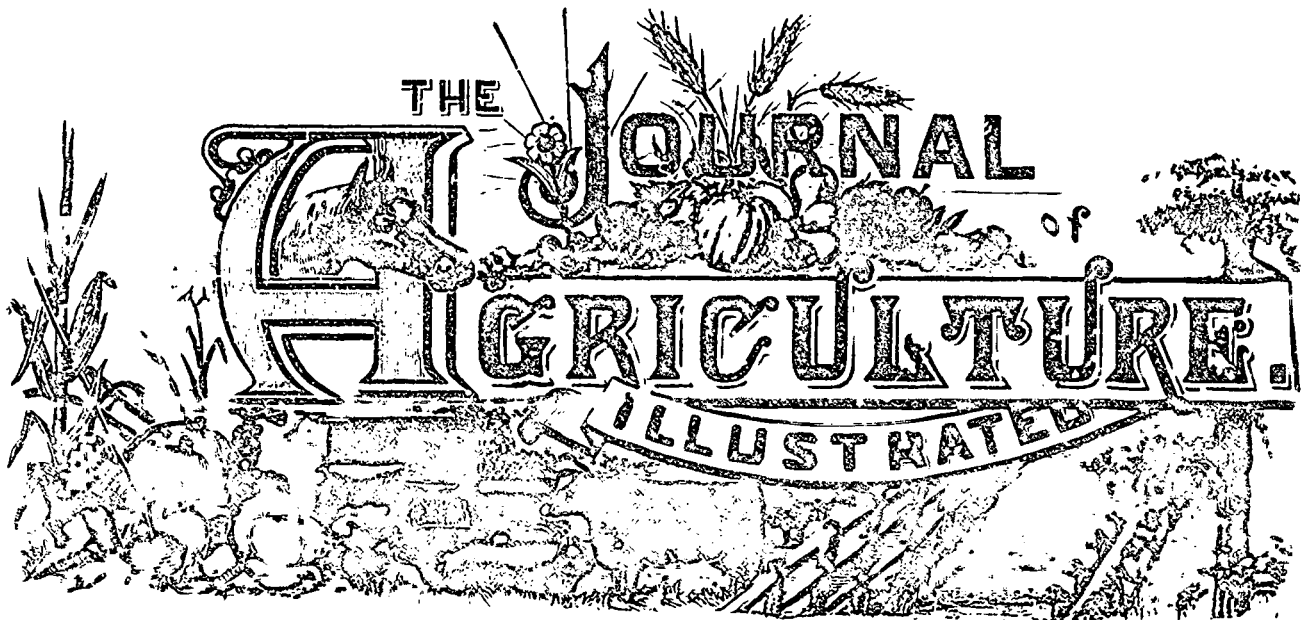
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Table of Contents.

Deliberations of the Council of Agriculture.....	97
Council of Agriculture of the Province of Quebec.....	97
The Council of Agriculture of the Province of Quebec.....	99
Council of Agriculture of the Province of Quebec.....	100
Correspondence	102
The Conscience of Mr Barré.....	103
Our Dairy industry, its defects and its wants.....	103
De Omnibus Rebus.....	106
Our Engravings.....	107
Early Maturity.....	108
Smut of Wheat, Oats, and Barley.....	108
Breeds of British Sheep—XII.....	108
Securing the Hay Crop.....	109
Nutritive value of roots.....	109
American Sheep Husbandry—VI.....	110
Pruning Rose Bushes.....	111
Pegging Down Rose Bushes.....	111
June Roses.....	112
A Rose Hedge.....	112
The Pepper Root.....	112

that the said council of agriculture be informed that the government does not recognize the interpretation which seems to have been given to section 17 of the said act of Victoria, chapter 15, in one of the resolutions adopted in the session of 13th December, 1883. Certified.

(Signed) JOS. A. DEFOY,
Sec. Ex. Coun.

Council of Agriculture of the Province of Quebec.

Montreal, Dec. 12th, 1883.

Present: Messrs. Archambault, Browning, A. Casgrain, Casavant, E. Casgrain, Gibb, Guilbault, Massue, Marsan, Martin, Ouimet, Rev. F. L. Pilote, Lussier, and Somerville. Mr. Massue in the chair.

The minutes of the last meeting were read and adopted.

The president explained to the council that, in consequence of some blunder on the part of the Montreal post-office, the notices for the last meeting did not reach all the members in time, and that, in consequence, the meeting which should have taken place on the 20th of November last could not sit on account of there not being a quorum; he, therefore, thought it his duty to call a meeting of the council for to-day.

The president informed the council that he had not thought it advisable to make an annual report this year, because the council would hear read at this meeting the different reports, the late arrival of which had prevented him from making a study of them sufficient to enable him to speak of them in his address in a fit manner.

A letter was read from Mr. E. J. DeBlois excusing himself, on account of illness, from attending this meeting.

The president announced the death of Mr. J. N. E. Faribault, a member of the council.

Resolved. That the council learns with deep regret the death of Mr. J. N. E. Faribault, a member of the council; that the council seizes this the first opportunity of offering its

Deliberations of The Council of Agriculture.

Copy of the report of a committee of the Hon. executive council, dated Feb. 20th, 1884, approved by the Lieutenant-Governor, Feb. 23th, 1884.

On the approval of certain resolutions of the council of agriculture.

The Hon. commissioner of agriculture and public works, in a memorandum, dated Feb 20th current (1884), recommends: That the resolutions of the council of agriculture of the 12th and 13th of December last (1883) be approved, but

most sincere sympathy to the bereaved family of Mr. Faribault on the sad loss it has sustained, and orders a copy of this resolution to be forwarded to the family of Mr. Faribault.

The Hon. G. Ouimet, seconded by Mr. A. Casgrain, moved: That Mr. L. H. Massue be reelected president for the present year. (Carried.)

The Hon. L. Archambault, seconded by Mr. A. Somerville, moved: That Mr. J. M. Browning be reelected vice-president for the present year. (Carried.)

EXECUTIVE COMMITTEE.

Mr. Browning, seconded by the Hon. G. Ouimet, moved: That the executive committee be composed as follows: The Hon. L. Archambault, president, J. M. Browning, L. H. Massue, A. Casgrain, J. J. A. Marsan, E. Casgrain, A. Casavant. (Carried.)

Mr. A. Casgrain, seconded by Mr. O. Gauthier, moved: That the Committee on Horticultural societies be composed as follows: Chas. Gibb, president, E. Casgrain, J. Lemyre, H. Lussier. (Carried.)

COMMITTEE ON SCHOOLS.

The Hon. G. Ouimet, seconded by Mr. J. M. Browning, moved: That the committee on schools be composed as follows: Rev. F. Pilote, president, E. Casgrain, O. Gauthier, S. H. Blackwood, the Hon. G. Ouimet. (Carried.)

There were read the following reports:

St. Anne's agricultural school.

L'Assomption agricultural school.

St. Francis agricultural school.

Committee on schools.

Committee on agricultural societies.

And the council adjourned to 2 p. m.

SESSION OF 2 P. M.

The same being present, the secretary read a petition from the inhabitants of part of the county of St. Maurice asking for the formation of a second agricultural society in that county.

The council permitted Messrs. Gérin Lajoie and F. X. Bellemare to discuss this question of the division of the county of St. Maurice before it. After having heard opinions on both sides of the question, it was resolved: That the prayer of a certain part of the county of St. Maurice, requesting to be allowed to form a second society of agriculture in that county, be refused, as that county does not come within the limits insisted upon by the council. (1)

The council considered the different reports of the agricultural schools. The report of the L'Assomption school was received and approved, but as to the reports of the schools of St. Anne and St. Francis, Mr. Ouimet, seconded by Mr. Browning, moved: That the annual reports of the schools of St. Francis and St. Anne be returned to the directors of these schools, and that they should be informed that these reports, not being in conformity with the rules of the council, cannot be received. (Carried.)

Mr. Browning, seconded by Mr. A. Casgrain, moved: That the grants made to the schools of agriculture be retained, and not paid over until they shall have conformed to the rules of the council. (Carried.)

The council then adjourned until the next day, Dec. 13th, at 10 A. M.

SESSION OF DECEMBER 13th, 1883.

Present: Messrs. Archambault, Browning, A. Casgrain,

(1) *Ne se trouve pas dans les conditions de limites, etc.* Meaning, I presume, is not sufficiently extensive, &c. Trans.

E. Casgrain, A. Casavant, Gibb, Guilbault, Lussier, Massue, Marsan, Martin, Ouimet, Rev. L. Pilote, A. Somerville, and O. Gauthier.

: A petition was read from the county of Lotbinière society No. 2, asking to be allowed to purchase a *Hambletonian* stallion on the following conditions: 1. To allow the society to make an annual payment of \$150.00 for four years to the person undertaking the purchase of this stallion, and this on terms considered the most judicious by the managing committee of the society; 2. To grant to the society exemption for four years from holding a competition for the best cultivated farms, and one or two exhibitions of farm products.

Resolved: That the council cannot grant the prayer in question, because, apart from other most important reasons, the mere fact of an expressed desire to purchase a *half-bred male*, is in itself, sufficient to cause a refusal.

A petition was read from the Missisquoi agricultural society, praying the council to grant it a sum of money for the encouragement of ploughing matches in the said county.

Resolved: That the encouragement of ploughing matches forming, by law, part of the obligations imposed upon agricultural societies, the council cannot grant this request.

A petition was read from a part of Ottawa county, praying for leave to form a third agricultural society in that county.

Before considering this petition, the secretary was instructed by the council to send copies of the petition to the existing societies, in conformity with the rules of the council.

A letter was read from the secretary of the forestry association, asking for a grant from the council to enable him to carry on his mission of restoring our forests; the letter also requested that the said association might be placed on the same footing as the agricultural societies.

Resolved: That the council regrets having no funds at its disposal with which to aid the forestry association in its useful work. But the council will find a pleasure and a duty in recommending the society to the favourable consideration of the government.

A letter was read from the secretary of the No. 1 society of the county of Huntingdon, showing the importance to all the agricultural societies of the province of obtaining seed-wheat of the kind called "Black-Sea;" and enquiring if the council would feel disposed to import a certain number of bushels for distribution throughout the province.

Resolved: That appreciating at its just value the importance to the farmers of this province of obtaining a change of seed-wheat, the council recommends that a request be made to the government for a loan sufficient to meet the expenses of importing 10,000 bushels of Black-Sea wheat in time for sowing next spring; that the wheat thus imported should be sold to the agricultural societies at cost price, unless, indeed, the government should prefer to import the wheat on its own account, and, by way of reimbursement, retain the amount expended from the annual grants made to the agricultural societies.

A letter was read from the secretary of the agricultural society No. 1 of the county of Huntingdon, complaining of the amendment made at the last session of the provincial legislature to the act of agriculture, as to the distribution of the government grant in counties where two agricultural societies exist.

Mr. Browning, seconded by the Hon. L. Archambault, moved: That the council of agriculture, desires to express its sincere regret that the government, during the last session of the provincial legislature, allowed to pass a change so important as that contained in the act Vict. 46, chap. 12, without having previously consulted the opinion of the council of agriculture, whose duty, as declared in the act Vict. 32, chap. 15, sect. 17, is "to give advice as to all

the means fitted to ensure the successful working of the agricultural societies," and which has made a special study of all the details connected with the agricultural societies, and with the progress and usefulness of the said societies. The council, therefore, prays the government to recall the amendment Viot. 46, chap. 12, and to leave the act of agriculture as it was originally drawn by the statute Viot. 32, chap. 15, sect. 86. (Carried.)

A letter was read from Dr. McEachran, informing the council of a sale of Clyde stallions and brood-mares imported last September, and requesting the council to draw the attention of the agricultural societies of the province to the advantages offered by this sale, where they will find an opportunity of providing themselves with pure-bred animals at a reasonable price.

Resolved: That a circular be addressed to the agricultural societies pointing out the advantages which they would have in profiting by this sale to obtain pure-bred stallions and brood mares on easy conditions, and at a reasonable price.

A report was read from the committee charged with the duty of visiting the agricultural schools at Lansing, Michigan, and Guelph, Ontario.

Mr. Browning, seconded by Mr. Lussier, moved: That the report of the committee charged with the duty of visiting the agricultural schools of Lansing and Guelph be received, and that the government be requested to give its serious attention to the suggestions therein made, and that the secretary be instructed to send a copy of the report to each of the members of the provincial legislature. (Carried.)

The Rev. L. Pilote, seconded by the Hon. L. Arohambault, moved: That the government be requested to grant five exhibitions, of \$60.00, in addition to those already given by the council of agriculture, to each of the agricultural schools of L'Assomption, St. Anne, and St. Francois, and to the veterinary college at Montreal.

This question, put to the vote, was carried on the following division. For: Messrs. Pilote, Casavant, Gauthier, Martin, Guilbault, E. Casgrain, Marsan, Arohambault, and A. Casgrain (9). Against: Messrs. Browning, Somerville, and Lussier (3).

Mr. Chas. Gibb did not vote on this question.

The report of the committee on horticultural societies was again submitted to the council, and it was resolved: That the report of the committee on horticultural societies be received and approved.

The Hon. G. Ouimet gave notice that at the next meeting of the council he would propose: That all the rules concerning the admission of candidates to the agricultural schools be amended as follows: no one shall be admitted to the agricultural schools without having passed, an examination in following subjects: writing, reading grammar, the elements of geography, dictation, elementary history of Canada, and arithmetic as far as the rule of three inclusive; that a certificate be granted him by the person or persons charged by the council with the duty of examination; and, in addition, that the candidate be at least 15 years old, in the enjoyment of good health, and the bearer of a certificate of good moral conduct. And the council adjourned.

Certified true copy.

(Signed)

GEORGES LECLÈRE,

Secretary.

From the French.

The Council of Agriculture of the Province of Quebec.

Montreal, 20th May 1884.

Present: Messrs. Massue, Pilote, Ouimet, DeBlois, Lue-

sier, Cochrane, Gauthier, Gibb, Casavant, Lomyre, Marsan, Guilbault, Blackwood.

The minutes of the last meeting were read and approved.

A petition from the ploughing association of Missisquoi county was read, requesting the council to give a special grant in aid of ploughing matches in that county.

Resolved: That this council has observed with pleasure the efforts made by the Missisquoi ploughing association to encourage ploughing matches in that county; but the council regrets that the means at its disposal will not permit it to accompany its approval with a grant of money for that purpose.

A petition was read from society No. 1 of Chicoutimi county, informing the council that the aforesaid county possesses two agricultural societies, and that the annual grant is not enough to allow all the desired amount of good to be carried out. The society therefore hopes that the council will recommend the government to vote it an additional grant in aid.

Resolved: That after having considered the petition of society No. 1 of Chicoutimi county, this council is of opinion that as the Act of Agriculture has already settled the amount of the grants to be made to the agricultural societies of the province of Quebec, it is impossible for the council to grant this request.

After a discussion on the subject of agricultural education and other matters, the council adjourned till 2 o'clock P. M.

SESSION OF 2 O'CLOCK P. M.

Present: Messrs. Massue, Ouimet, DeBlois, Lussier, Gibb, Marsan, Lemire, Blackwood, Casavant, Guilbault, Pilote, Gauthier, Martin, and the Hon. Commissioner of Agriculture.

The Hon. Mr. Ross submitted to the council a scheme of the several amendments he proposes to make in the Act of Agriculture. (1)

After discussion, it was resolved: That this council approves of the suggested amendments to the Act of Agriculture.

Then followed the reading and discussion of a notice of motion, made at the last session, relative to the agricultural schools of the province, which notice reads as follows:

Seeing that experience proves that it is of the greatest importance that those young people who intend to follow the course of the agricultural schools, subject to the control of this council should possess sufficient instruction to enable them to profit by the scientific teaching given in the said schools; and that it is necessary to make regulations to that effect, Mr. Ouimet proposed that it be resolved:

That, from the 1st May 1885, no candidate shall be admitted to the schools of agriculture under the control of this council without having passed an examination in the following subjects:

1. The elements of grammar and geography.
2. An abridgment of the history of Canada.
3. Dictation.
4. Arithmetic as far as the rule of three, inclusive.

Each candidate shall, in addition, be furnished with a satisfactory certificate of moral conduct; his age shall be not less than fifteen years, and his health shall be good.

The board of examiners shall be composed of those members of this council who form the visiting-committee of schools; and the members of the said committee shall appoint one or three persons to examine the candidates, and to report to the board on their qualifications.

(1) *Projet de loi*—a bill.

The certificate of admission shall be signed by the president of the committee. Should any candidate fail in passing the examination, he may present himself again at a later date, but not more than three trials will be allowed.

A dollar shall be paid for the certificate to the director of the schools, who shall account for the same to the visiting-committee.

The course shall extend over three years.

A certificate of merit shall be granted to each pupil on his leaving the school, if he has attended the course and passed an examination before the board of examiners.

The certificate shall be signed by the president of the committee, the president of the council, the director of the school, and by the farm-manager.

For this certificate, each successful candidate shall pay one dollar.

Every holder of a scholarship who, after matriculation, shall leave the school, without reasonable cause, before the expiration of three years, shall lose all right to his scholarship, and shall be obliged to repay to the council all sums he has received from it. To secure this, he shall sign the following declaration:

... SCHOOL OF AGRICULTURE.

I, _____, the undersigned, admitted to the above school, engage to repay to the Council of Agriculture the sum which shall have been paid for me, both for my instruction and for my exhibition, if I do not faithfully complete the course that I am pledged to follow and I have signed my name.

(Signed)

There shall be two examinations in each year: the first in September, and the second on the first of February.

Resolved: That the motion of the Hon. Gédéon Ouimet, relating to the agricultural schools, be approved by the council.

After having examined and discussed the programmes of certain agricultural societies, the council adjourned.

Certified true copy.

(Signed)

GEORGES LEOLÈRE.

Council of Agriculture of the Province of Quebec.

Quebec, March 12th, 1885.

Present: The Hon. Messrs. L. Archambault, G. Ouimet, Messrs. L. Beaubien, J. N. Blackwood, E. Casgrain, A. Casavant, A. Casgrain, E. J. Deblois, O. Gauthier, H. Lussier, J. Lemyre, J. Marsan, L. H. Massue, Assistant Commissioner,—Martin, M. D., the Rev. M. F. Pilote.

The Commissioner of Agriculture and Mr. S. Lesage, were present at part of this meeting.

Mr. L. H. Massue in the Chair.

The minutes of the last meeting were read and approved.

Mr. Ouimet asked the president, why a meeting of the council had not been called before that day.

In reply to Mr. Ouimet, the president said that the first reason why the council had not been called together sooner was as follows: Although the regular meetings of the council should take place in June and October, it was out of his power to call the meetings, since, from some cause unknown to him, there was omitted in the budget of the year the ordinary grant made to the council to meet even the very urgent expenditure of the office, such as salaries and other items, as well as the travelling expenses of the members; and, in the second place, the president was obliged to yield to the request of the Commissioner of agriculture not to convoke the council until he received an order to that effect from the Commissioner himself.

Mr. Ouimet asked if the council had ever appointed an officer with the title of DIRECTOR OF AGRICULTURE.

The president having replied in the negative, Mr. Ouimet, seconded by Mr. Gauthier, moved: That the secretary of the council be instructed to obtain copies of the orders in council appointing a director of Agriculture, and defining his powers, province, and duties. (Carried.)

Mr. Ouimet, seconded by Mr. Archambault, moved: That Mr. L. H. Massue be reelected president of the council for the ensuing year. (Carried.)

Mr. Blackwood, seconded by Mr. E. Casgrain, moved: That Mr. J. M. Browning be reelected vice-president of the council for the ensuing year. (Carried.)

Mr. Casavant, seconded by Mr. A. Casgrain, moved: That the executive committee be composed of the same members as last year. (Carried.)

Mr. Blackwood, seconded by Mr. Lussier, moved: That the members who composed the committee on the horticultural societies last year, be reelected for the present year. (Carried.)

Mr. Marsan, seconded by Mr. Lemyre, moved: That the school-visiting committee be composed of the same members as last year, with the addition of Messrs. Archambault and A. Casgrain.

The secretary read the annual report of the director of the St. Anne's agricultural school, which was received, and approved.

The reports of the director of the agricultural school at L'Assomption was read, received, and approved, as was the report of the director of the agricultural school of St. Francis.

The report of the president of the committee on horticultural societies was also read, received, and approved.

The Rev. Mr. Tremblay, director of the agricultural school at St. Anne's stated that he had been invited by the Commissioner of agriculture to make known his views as to the best way of advancing the agricultural instruction in the province: Mr. Tremblay, therefore, requested to be heard on the subject by the members of the council. His request was granted, and the council adjourned until 2 p. m.

SESSION AT 2 P. M.

The same members being present, the secretary submitted to the council the programmes of the following agricultural societies for the present year.

Society No. 2 of Wolfe county begs to be excused from holding the competition for the best cultivated farms, and to be allowed to expend their funds in the purchase of thoroughbred male animals.

Resolved: That the request of this society be granted; provided that the males they propose to buy are thoroughbred, and that a copy of the pedigree establishing the purity of breeding of each animal thus bought, be transmitted to the council.

The county of Nicolet agricultural society requests exemption from holding a competition of the best cultivated farms, substituting for it an exhibition of stock and domestic manufactures.

Resolved: That before holding an exhibition of stock, this society be compelled to conform to the rules of the council, which insist upon the holding of a competition of the best cultivated farms.

The programme of the Napierville agricultural society, having been found to be in conformity with the rules, is approved.

The Beauharnois agricultural society wishes to be allowed to expend \$700.00 for an exhibition of live stock; the balance it desires to employ in the extinction of a debt con-

tracted in the purchase of a stallion. It also prays to be exempted from holding any other competition.

Resolved: That this society must first hold a competition for the best cultivated farms, and shall then be at liberty to employ its remaining funds as requested.

Bonaventure agricultural society No. 2, asks leave to employ one-half of the subscriptions of its members in the purchase of grass-seeds, and to expend one hundred dollars in the purchase of male animals.

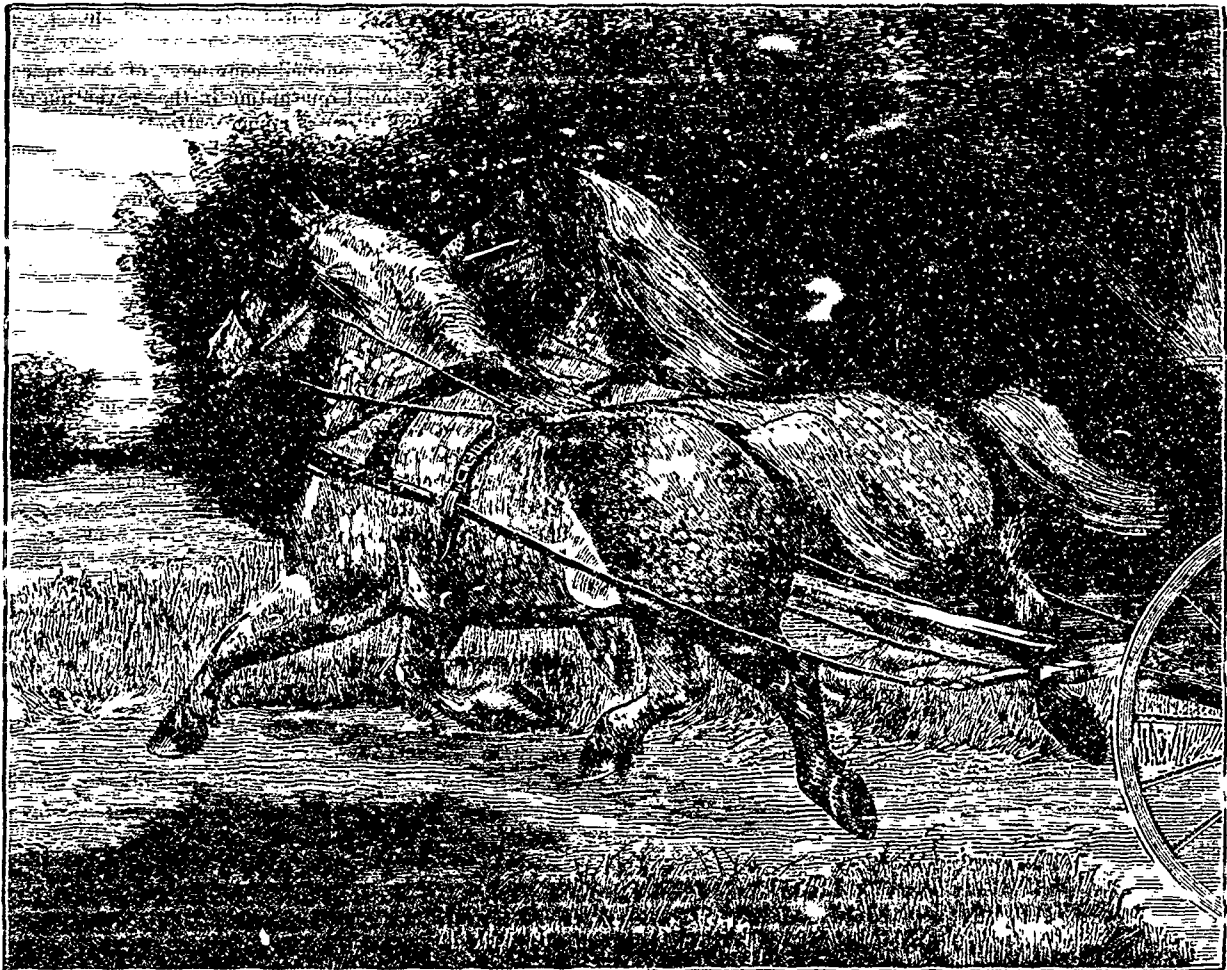
Resolved: That the requests be granted, on condition that the males bought by this society be thoroughbred.

the council by holding a competition for the best cultivated farms, before it can be allowed to carry out its intended plan.

The No. 2 society of Megantic requests exemption from the competition of farms, and permission to hold a live-stock exhibition and a competition of growing crops, and to purchase seed, &c.

Resolved: That before this society can be allowed to hold any other competition, it must first hold its competition for the best cultivated farms.

A petition was read from the Chateaugay agricultural society, begging, for reasons assigned, to be exempted from



IMPORTED FRENCH DRAFT HORSES.

The agricultural society of Iberville wishes to be allowed to hold an exhibition of live-stock and domestic manufactures, a competition of growing crops, and of large farms.

Resolved: That this petition be granted only on condition that the society hold a competition of the best cultivated farms.

The programmes submitted by the following societies, being in conformity with the rules, were approved, viz., Bagot, Bellechasse, Champlain, Dorchester, L'Assomption, Gaspé No. 1, Terrebonne, and Yamaska.

The society No. 2 of the county of Charlevoix asks leave to devote a portion of its funds to the purchase of pure-bred bulls and boars; and another portion to an exhibition of live-stock and domestic manufactures.

Resolved: That this society must conform to the rules of

holding a competition for the best cultivated farms.

Resolved: That this society cannot be excused from holding the said competition for the best cultivated farms.

The Lotbinière society No. 2 declares that it proposes to encourage energetically the introduction of improved breeds into that county, and to that end begs to be excused from holding the competition for the best cultivated farms.

Resolved: That the prayer of that society be granted.

The society of the county Deux-Montagnes states that it has imported a Clyde stallion direct from Scotland, at a cost of \$2,100.00; that in order to meet this expenditure, incurred in the interests of its members, it should devote all its funds to the extinction of the debt; and, in consequence, it prays to be exempted, for this year, from holding the competition for the best cultivated farms.

Resolved: That in consideration of the plea advanced in this petition, the council grants the request therein contained, but for this year only.

The Abbotsford society of horticulture prays to be allowed to omit its exhibition of fruit, and to devote the whole of its subscriptions to the purchase of Russian fruit trees for distribution among its members. (Granted.)

A petition was read from the farmers of the county of Rouville, asking leave to form a county horticultural society (Granted.)

A letter was read from Dr. McEachran, informing the council that the contract between him and the council expires this year; that in virtue of the said contract, and in consideration of the sum of \$1,800.00 a year, and of an additional sum of \$1,000.00 a year for the establishment of a course of lectures in French and the management of a department in the Journal of Agriculture, he had built the present Veterinary College after plans approved by the council, and had engaged to give gratuitous instruction to twenty holders of exhibitions—13 French and 7 English. Dr. McEachran also submitted a financial statement, showing that he had lost every year the sum of \$1,050.00. In conclusion, he prays for a continuation of the contract, and that, in the contemplated grant, the council will recommend the allowance of a sum sufficiently high to enable him to carry on the college in a satisfactory manner. Dr. McEachran offers to place his college at the service of the government should it desire to establish a course of theoretical agriculture.

Resolved: That the council having with pleasure observed the benefits the province has derived from the superior instruction given at the Montreal Veterinary College; having appreciated the advantages offered to the youth of the country by enabling them to embrace a career as honourable as it is profitable, and having read the letter of Dr. McEachran explaining the wants of the College, recommends this letter most heartily to the favourable consideration of the government.

The report of the president of the school-visiting committee was read, received, and approved.

The Rev. L. O. Tremblay, director of the St. Anne's school of agriculture, read the suggestions he proposes to offer to the commissioner of agriculture on our agricultural schools, and on the reforms required therein, according to his ideas, to render their working more perfect.

Mr. Marsan, seconded by Mr. E. Casgrain, moved: That after considering the observations submitted to the council by Mr. Tremblay, the director of the St. Anne's agricultural school, the council is of opinion that the suggestions therein contained appear to be of value, and that the council is pleased to recommend them to the serious attention of the Premier. (Carried.)

The Hon. G. Ouimet drew the attention of the council to the fact that L'Assomption agricultural school had added to its buildings a forge, a cartwright's shop, and a joiner's shop, for the use of the pupils, and he expressed the opinion, in the name of the council, that it was desirable that the other schools should establish workshops of the same sort.

Resolved: That in the opinion of the council it would be advantageous that a creamery or a cheese-factory be attached to each of our schools, to complete the farm-education of the pupils; and that it would be equally advantageous that the system of ensilage be carried out in these schools, in order that its practical usefulness may be demonstrated.

Resolved: That the secretary be instructed to print the resolutions adopted by the council at the session of May 20th

(1) In English, the words *exhibition* and *scholarship* answer to the Scotch word *bursary*. Trs.

1884, and to distribute them to the agricultural schools and societies of the province.

A letter from Dr. McEachran was read, asking the council to recommend the government to establish a system of provincial quarantine, like those that already exist in Manitoba and Ontario, to prevent the spread of certain contagious diseases among the cattle of this province; the federal quarantine only aiming at the prevention of the exportation of animals affected by contagious diseases, and its intention being not at all to interfere in matters which strictly concern the local governments. Dr. McEachran suggested that a veterinary surgeon should be appointed as chief inspector of the province, and that he should only be paid when his services are required.

Resolved: That the council, convinced of the practical advantage of a provincial quarantine in the prevention of the spread of contagious diseases among cattle, recommends the suggestion of Dr. McEachran to the favourable consideration of the government.

Resolved: That, in the opinion of the council, it would be useful to establish a "Herd-Book" for the registration of bulls and cows of the Canadian breed, and, also, a "Stud-Book" for horses of the Canadian breed.

Resolved: That the council regards the payment of pupils in our schools of agriculture for their labour, as useful and desirable.

Resolved: That, seeing the advanced period of the season, and the impossibility of changing the programmes the different agricultural societies have already adopted, the council thinks it by no means pressing, for this year at least, to modify the regulations of the council as regards the competition for the best cultivated farms.

The council then adjourned. Certified true copy.

(Signed)

GEORGES LECLÈRE.

Copy of the report of a committee of the Hon. executive council, dated May 2nd 1885, approved by the lieutenant-governor, May 6th, 1885.

As to the approval of certain resolutions of the council of agriculture.

The Hon. the commissioner of agriculture and public works, in a memorandum, dated the first of May current (1885), recommends, that the resolutions of the council of agriculture of May 20th, 1884, and of March 12th, 1885, be approved, in conformity with the provisions of the Act 32 Vict., ch. 15, sect. 39, with the exception of the resolution of May 20th, 1884, relating to the agricultural schools, which resolution, in consideration of its exceptional importance, remains for further consideration.

Certified.

JOS. A. DEFOY,

Sec. Ex. Coun.

From the French.

A. R. JENNÉR FUST. ESQ., SOREL.

Montreal, June 12th, 1885.

Dear Sir,—Your article at page 91 of your June No., reminds me of the crop of clover I obtained on a poor sandy soil (like Sorel). Some years ago I went on a run down farm, composed of all varieties of soil, one part was a very poor sand and the first year sowed to oats, I obtained one load on nine acres. I harvested the oats so as to compare the result with the next year. In the fall I collected leaves, turf, poultry-house sweepings, manure and refuse of the wood shed, mixed all up together gave me sixty loads, which I spread on four acres and turned under to the depth of ten inches, turning up the hardpan, much to the disgust of my neighbour, who predicted failure, &c. Next spring sowed to oats with

twelve pounds clover seed to the acre. The season was very dry and it showed the advantage of the deep ploughing in retaining the moisture. I harvested a fine crop of oats, and in the fall pastured the clover. The following spring I spread the droppings and had a splendid clover crop, as also the following year: that field showed the benefits of the clover and deep ploughing for years. Circumstances, compelled me to give up farming. From my experience I would say that the cheapest, quickest, and best way to renovate light sandy lands is by clover. Plaster is very good with clover, it will help it very much. I have used but little of the latter, but the little I used on a small piece of clover later on had a wonderful effect.

ONCE A FARMER.

THE CONSCIENCE OF MR. BARRÉ.

Quebec, April 25th, 1885.

To THE EDITOR,

Sir,—Mr. Barré recently addressed to the press of this province a letter entitled: "MR. BARNARD AND THE DAIRY INDUSTRY," in which I find, among other solemn assertions, the following: "Conscience compels me to put the public on their guard against the pernicious doctrines of the *Director of Agriculture*", &c., &c. You will observe that this letter does not contain a word in reply to my articles written in refutation of Mr. Barré's assertions; it is all about making cheese by means of a material called *anti-hoff*. The conscientious M. Barré adds: "This proceeding, so highly praised by Mr. Barnard, is a cause of ruin to the dairy industry, and at the same time a cause of danger to the public health. In support of this statement, M. Barré mentions two articles in the *Journal of Agriculture*. Well, Sir, Mr. Barré's conscience has not prevented him from stretching the truth to a terrible extent. Thus, the first article cited (Feb 1881), is a report from Mr. Ambroise Gendron—the name is there in full—who had just visited some of the cheese factories of the United States. In this communication, Mr. Gendron acquaints us with the new process. The report was neither more nor less than an extract from an American paper, which Mr. Gendron sent us as being in exact conformity with his own impressions. To this report the editor of the *Journal* added: "We have tasted the cheese brought back by Mr. Gendron, and find it excellent. It is evident that the new process deserves our most serious attention." In the other incriminated article (April 1881), not a word about *anti-hoff* is to be found; the editor of the *Journal* simply announces the opening of a school-factory at St. Denis, Kamouraska, where Mr. Jocelyn proposes to make cheese and butter from the same milk; and it is to this that Mr. Barré trusts, *en conscience*, when he accuses me of promulgating pernicious doctrines, &c.

Unfortunately, "the conscience" of Mr. Barré does not hinder his lying in the most brazen-faced manner in a still more serious matter, when he affirms that the combined-factories (cheese and butter, &c.) of the country, carried on after the Jocelyn process, make use of *anti-hoff* and turn out cheese injurious to the health of the public. This assertion might do great harm to these factories, and I declare most positively that Mr. Barré is unable to prove its truth. These factories, which I have inspected many a time with great care and attention, employ absolutely no matters but that which are commonly used in the factories of the country, and it is a base falsehood to say that the goods made in them are injurious to health.

In my former article to which Mr. Barré has not thought fit to reply, I proved: 1. That Mr. Barré was the first to cry up skim-milk cheese, and I quoted the following words

from a letter of his, dated March 1881, from Denmark: "I am now making cheese from milk skimmed for 24 hours down to the lowest point, and this cheese will take the shine out of much of the full-milk cheese in the province of Quebec; 2. That the combined-factories — cheese and butter, by the Jocelyn process, — had given, invariably, during four years, from 12 0/10 to 20 0/10 more profit than the ordinary factories; 3. I stated that Mr. Barré lied, when he asserted that good skim-milk cheese would not keep more than a month. I myself have kept this sort of cheese more than twelve months, and the last piece was as good as the first.

And, now, I think I have said enough as to the value of the solemn affirmations, "*en conscience*", of Mr. Barré. In future, I shall leave the public to judge for itself what dependance can be placed on his word.

Your obedient servant,

ED. A. BARNARD.

(From the French).

Our Dairy industry; its defects and its wants.

Let us observe, in passing, that the Director of Agriculture has been accused of crying up the manufacture of skim-milk cheese. In reading the numerous assertions (*hyrilles*: Greek litany; *T* have abounded lately in the papers, one would believe that this officer had summed up all his teaching, as regards dairy-work, by a recommendation to make no other description of cheese.

In reply, I will quote an extract from the last official report of the Dairyman's association of this province. In the appendix of a report of the commissioner of agriculture of the present year 1884-85, page 175, we read as follows: "The manufacture of cheese and butter from the same milk", says Mr. Barnard, "requires knowledge and skill far beyond those required for the ordinary method. Out of a hundred good makers of the common kind, you may perhaps find one or two capable of conducting properly a combined-factory. The machinery and fitting up are of the greatest importance, and the capital required much larger; and, consequently, I am far from advising every one to adopt this system. In fact, I advise no one to adopt it, unless the conditions I have mentioned are fulfilled."

These words, spoken at St. Hyacinthe, at the last convention held there, are, in spite of all statements to the contrary, the summing up of what the Director of Agriculture has never ceased saying for many years: he has never said otherwise. This is enough to show the value of the above accusation!

Having made this point clear, let us see what is the actual condition of the dairy industry in the province of Quebec.

The experts, particularly the buyers, agree in saying: 1. That our full-milk cheese, too often, is of very inferior quality, and that, in general, it cannot be classed as more than middling or common; 2. That it is almost impossible to get in this province a sufficient quantity of best cheese to supply the orders for first qualities; 3. That, to supply the orders for first qualities—the most numerous and the most remunerative orders now-a-days—the factors are obliged to send to Ontario; 4. That the number of factories in which, with perfectly full milk, only common cheese is produced, is about 90 0/10 ninety per cent. of the entire number of our factories; 5. That our Quebec full-milk cheese sells, on an average, for 1 1/2 cts. a pound less than the good cheese of Western Ontario; a dead loss to the patrons of our factories of half a million dollars a year.

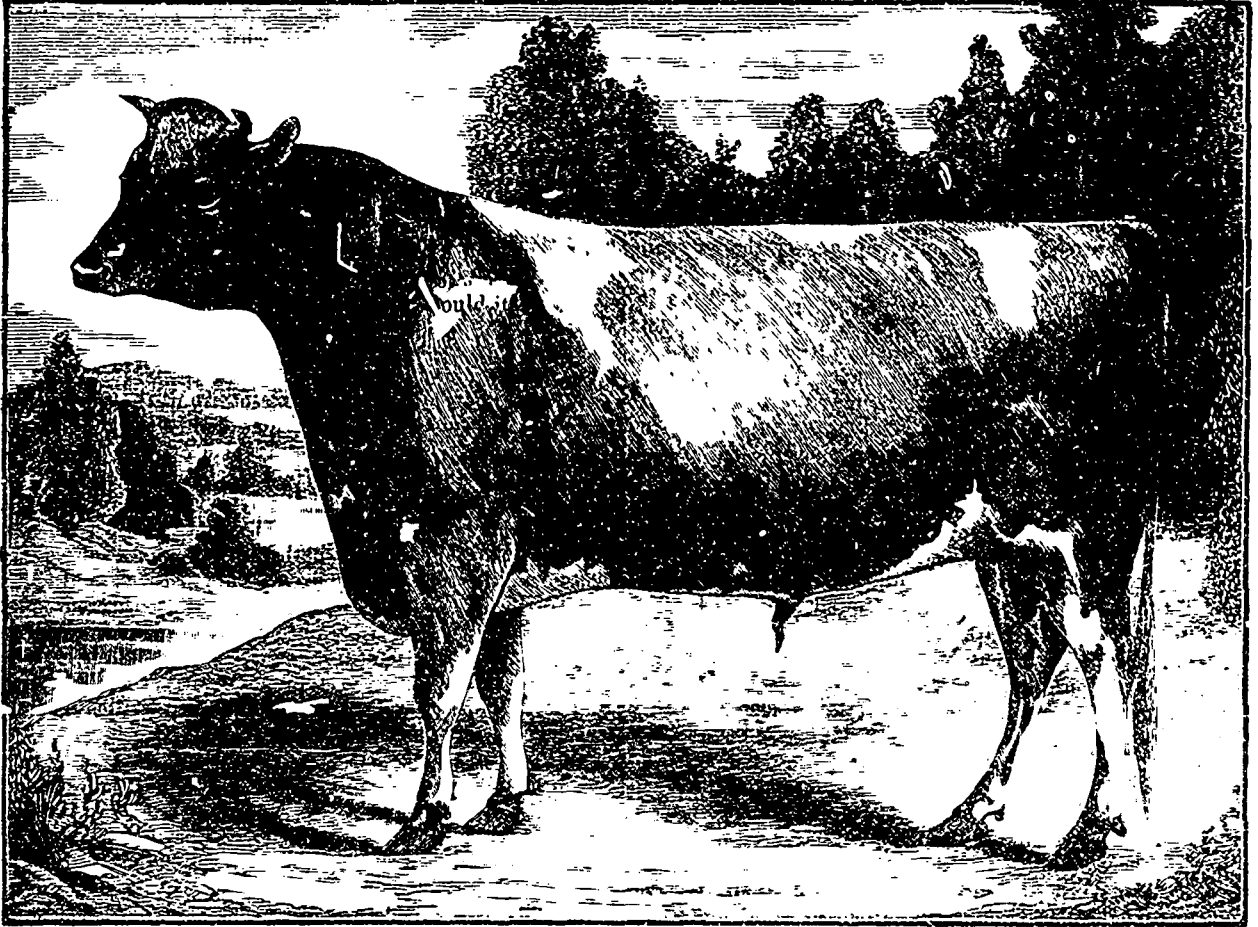
If these statements are exact, and, unfortunately, everything leads me to believe that they are, we see at once how

important it is to search out and combat the mischief in its lurking place, instead of entering upon wars which nothing can justify. When we have taken steps to improve the nine manufactories out of ten in which, with full-milk, an inferior cheese is made, it will be time enough, it seems to me, to see what damage at all exists in the plan: to make good skim-cheese with milk that has already served to make the best butter.

It is only just lately, that a considerable number of the Ontario factories have obtained the reputation that they now enjoy. And it is indisputable that this success is due, almost entirely, to the frequent inspection of the factories by the master-makers employed by the members of the Dairymen's

machinery, or in the materials employed, and as to the maker, he tries to find out if he requires any further information as to his method, &c. It is well known that a single visit from the inspector is very frequently sufficient to improve the entire production of the factory by from one to even two cents a pound, which, at only one cent a pound, represents a *daily* net profit of ten dollars when ten thousand pounds of milk are received per diem; or, in other words, a net profit of from \$3,000, by the season, in an ordinary factory.

The Director of Agriculture can say with pleasure, that the Dairymen's association of this province (except Mr. Barré) is entirely agreed with him in his desire to propose and



GUERNSEY BULL, "CETEWAYO."

association of Ontario. It is easy to see what good effects follow from these inspections. Thus, the inspector, himself a member of the association, visits, as a friend, the factories of the association. He ascertains the progress made, and recommends any improvements which may bring additional profits both to maker and patrons. This takes but a few hours. First, the inspector tests the quality of the milk; if there be any fault, he sends for the patron who has sent in that particular milk, and shows him what injury he is doing to all who are interested in the factory. And so, without the intervention of the makers, a stop is put to the depreciation of quality which often results from the mixture of one can of bad milk with forty or fifty cans of good. The inspector then continues his investigations, looking at the construction of the factory, to see if any improvements are wanting in it, in the

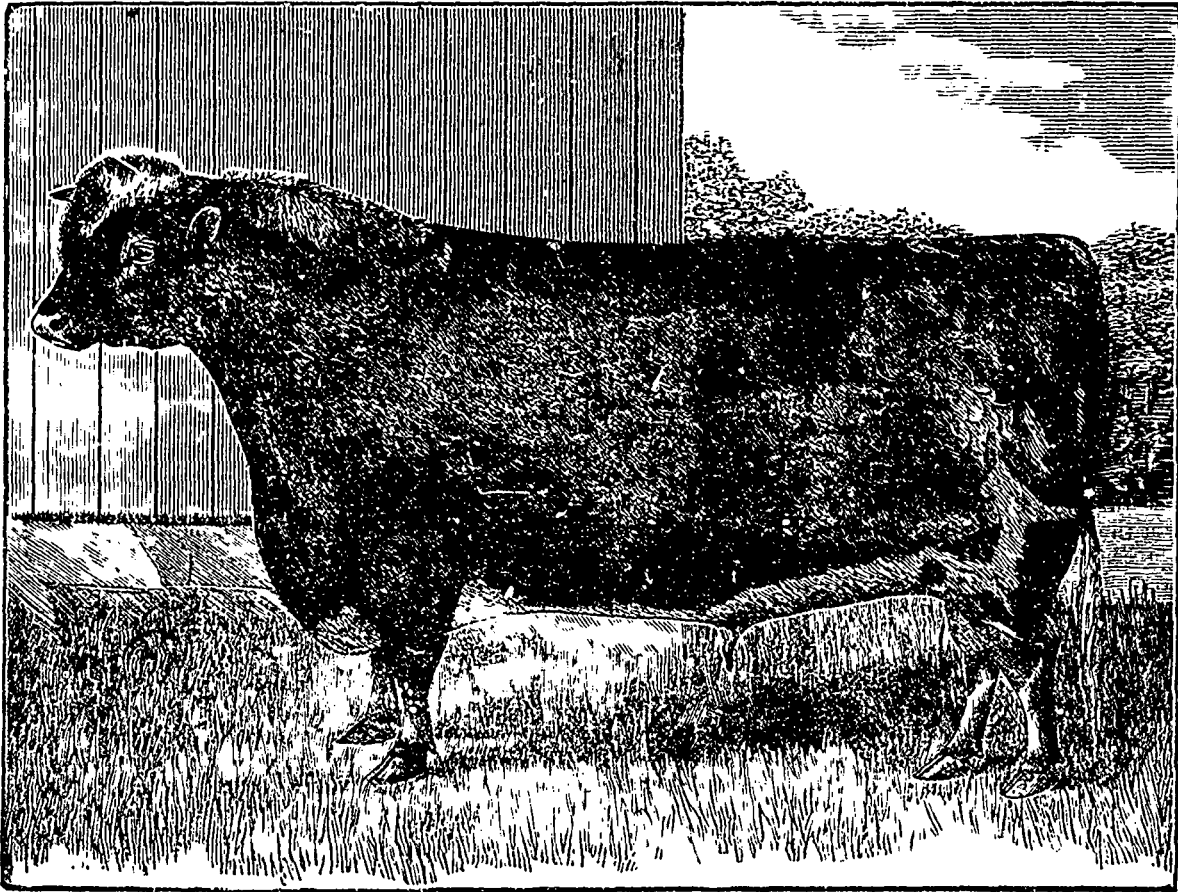
forward this comparatively easy mode of improvement in this province.

Let us say here, that these inspections would be so much the more useful to us that our makers have not had the same advantages as those of Ontario. They generally speak only French, and our first teachers did not understand a word of that language. Moreover, the rapidity with which this industry spread over the province caused the engagement of many a maker who was really a mere apprentice, and knew very little about the business. In Ontario, it was very different. There, it was only necessary to cross the St. Lawrence to find hundreds of the best butter- and cheese-makers, all of whom spoke the language of Ontario. In spite of all this, and I say it with pleasure in praise of our makers, it would cost us comparatively little, in money and trouble, for

our factories to be as successful as are those in Ontario. To work, then, with courage and unanimity, and as soon as possible, for our present position is not void of danger.

The marvellous success of cheese-making in Canada—the production, which in 1867 was only a million pounds, now exceeds sixty five million pounds a year—seems to me to present itself as a source of even serious danger. America, which twenty-five years ago hardly sent any cheese at all to England, now furnishes three-fourths of its importations: half from Canada, and half from the United-States. And this enormous exportation consists of only two sorts: *Cheddar* and *Cheshire*; whilst the varieties of cheese imported from the continent, which form the balance, are very numerous. The farmers of the continent do not at all approve of this

Let us now turn to the exportations of Canadian butter. It is sad to be obliged to contemplate the falling off in the exportation of our butter. In the last two years, the whole Dominion has exported less butter than Upper and Lower Canada alone exported in 1862! That is, for twenty-two years, our commerce in butter has never fallen so low. It is no use saying that demand is wanting. England is importing more butter every year. She pays more for her artificial butter than for our ordinary butter; and this is a proof how low is the value of our common butters since the artificial butter has been so much improved that all the world buys it without hesitation. Of the whole importation of butter into the United Kingdom, Canada only furnishes 3 0/10, while we furnish 33 0/10, about, of the imported cheese.



22d DUKE OF AIRDRIE.

enormous American production. It is a severe blow to their profits. In England itself, the country, *par excellence*, of Cheddars and Cheshires, the dairymen are seriously disturbed. But it is in that country that the American processes are most attentively studied, and a strong competition with our products is in course of preparation. Again, the constantly increasing progress of American cheese-making will soon inundate the English markets, and then, *woe to the makers of inferior cheese*. Many a factory will be ruined, and the province of Quebec will be the first to suffer, if, during the interval, it has not improved the quality of its cheese in 90 0/10 of its present factories! (1)

(1) I hear from home that four new tenants on our family property, in Glostershire, demand the erection of new drying lofts, &c. They propose to make *Cheddar* cheese for the future, the usual production

No one can deny that our creameries make good, nay, excellent butter. Unfortunately, they are few in number. We do not make enough creamery butter to furnish regularly and constantly an appreciable quantity of it on the English markets; so the exporters content themselves with storing these butters during summer to sell at a greater profit in autumn. The price of butter, even of the best creameries, are almost invariably too low to allow the creameries to compete on terms of equality with the cheese-factories. A few figures will show this more clearly.

During the four years that I have been actively engaged on this subject I have ascertained that up to September it is dif-

of the 850 cows kept on the estate having been "thin Glo'ster." A lazier, less progressive set than the old tenants never breathed: I am glad to hear of their departure.
A. R. J. F.

fault to sell creamery butter higher than 21 cts. a pound: 17 cts. net to the patron, after deducting the cost of making. Now, one hundred pounds of milk, at that season, from May to August, would make about 4 lbs. of butter. $170 \times 4 = 680$ for 100 lbs. of milk.

During the same season, good cheese generally brings about $9\frac{1}{2}$ cts. a pound, and often much more. Deducting $1\frac{1}{2}$ cts. for making, there remains for the patron $10\frac{1}{2}$ lbs. of cheese at 8 cts. = $82\frac{1}{2}$ cts., on an average, for the cheese, instead of 68 cts. for the butter.

An element in the comparison which the farmer too often neglects, is the value of the milk which remains in each case. Were he to keep account of the value of the skim-milk as being worth twice as much for his stock as the whey, the difference of value on the side of the cheese would be problematical. Unhappily, the farmer looks a great deal too much at ready money and quick returns. It is this desire for returns in ready money that accounts for the success of the creamery-factories, or combined-dairies. During summer, these skim very slightly. The butter they make is exceptionally good, as it is only the first risen cream they take off, which beyond all doubt is convertible into a butter far superior to that made from the whole cream. And so, by the combined system, the reckoning of the profits is entirely altered, for by it is obtained from 100 lbs. of milk $1\frac{1}{2}$ lbs. of butter selling for 23 cts. instead 21 cts. (on account of its superior quality), or 19 cts. net = $28\frac{1}{2}$ cts. $8\frac{1}{2}$ lbs. cheese (skim) at 9 cts or $7\frac{1}{2}$ cts. net = $63\frac{1}{2}$ cts.

92 cts.

Thus, from May to August, the combined butter- and cheese-factory gives 36 $\frac{0}{10}$ more than the simple creamery, and about 12 $\frac{0}{10}$ more than the best cheese-factory.

But the especial excellence of the combined system lies in the fact that the patron can always sell the produce of his milk at the best prices, the competent maker being always able to convert the milk either into full-milk cheese, into butter, or into best butter and good skim-cheese, provided that the factory is well arranged and his knowledge of the business perfect.

It has been said that the combined system is on the road to ruin the dairy business in the United States. This assertion is *bold* enough, to say the least. Never has any industry been so rapidly developed, never has any industry been so successful as the dairy-business in our neighbours' country. Ten years ago, the Western and the North-Western States of the Union imported their butter from the East; and the butter of that immense country was quoted at the lowest price on all the markets. To-day, the combined butter-cheeseries (forgive the coinage—Tr.), especially in the West, are on an immense scale, and all the States, without exception, are entering upon the so remunerative business of the combined manufacture of butter and cheese.

It has been said that England has begun to import the Ontario cheese in preference to that of the States. True enough; but does this prove that the combined process has ruined the dairy-business?

We know how strong the Americans, especially the working men, are in figures. Now, here is what they have shown during the last few years.

First-rate butter is always scarce in the States, in spite of the increased quantity made lately. And so, very fine creamery butter has brought, on an average, 35 cts. a pound, wholesale. One hundred pounds of milk give 4 lbs. of butter, less 3 cts. for cost of making, = \$1.28, and 7 lbs. of skim-cheese at 6 cts. less 1 ct. for cost of making, = 35 cts. The patron, then, receives \$1.63, net, for 100 lbs. of milk.

We saw that from May to August, full-milk cheese, for

export to England, only sold for $9\frac{1}{2}$ cts. a pound, less 1 ct. for making, in the States. The patron who has had his milk made into full cheese for the English market will only get 10 lbs. of cheese at $8\frac{1}{2}$ cts. net, that is 85 cts. instead of \$1.63. It is easy to see why the Americans allow orders for the richest kinds of cheese to come to Canada without bothering themselves about it.

But, you will say, you cannot get 6 cts. a pound for all skim-cheeses. The answer is simple: there are many incompetent makers both in the States and in Canada. Still, wherever the makers know their business, the returns I have mentioned are made.

They say that it is impossible to make skim-cheese sufficiently well to avoid *running the market*; that it is adulterated, that it contains matters *injurious to health*; that it will not keep more than a month, &c., &c. Plenty of statements like these, and all from the same source! There they are, *the unadulterated* productions of him who airily dubs himself: *The American Demon*. Yes, I fear not to say so: they are all pure inventions.

I have already been too long, but one important lesson flows from what we have seen. It is that there is an urgent necessity for a provincial dairy-school, where all questions connected with that business may be put beyond a doubt. Such a school would cost but trifling sum compared with the good to be derived from it were it placed under wise and prudent management. ED. A. BARNARD.

(From the French).

De Omnibus Rebus.

It was a treat on Monday, June 8th, to see a bill again. After fourteen months passed in a flat district like Sorel, I greeted the mountains of the Vermont country like old friends. I don't mean to say much for the beauty of the scenery, between Sorel and Acton, but from Acton to Richmond, nothing could be lovelier. The sloping borders on each side of the railroad; the rich herbage with the spring flush of green upon it, and the well-bred beasts grazing every where, formed a most consolatory picture to one who for many a day had seen nothing but arid sand, stunted crops, and dwarfed cattle. A traveller, from Louisiana, was my companion, and was utterly surprised at the sudden change from poverty to comparative wealth apparent along the road. He asked a great many questions, some of which were not easy to answer, and appeared deeply interested in the resemblance of the French-Canadian manners and customs to the manners and customs of their brothers in his own native state.

Seven o'clock in the evening brought us to Richmond, where I passed the night in perhaps the very worst tavern I ever saw. The house was filled with a smell of paint that was thick enough to cut with an axe; the food was—ugh! and the bed in which I slept was populated with the liveliest of crawlers.

In the morning I walked over the Agricultural College farm with the proprietor, Mr. J. Ewing. It was nine years since I had seen it, and the improvement visible was very great. Not many pupils just now, but they were all at work: one ploughing, another hauling out dung, a third spreading it, and so on. One piece of the finest mowing grass I ever saw had a mixture of seeds in it, among which I was glad to see my friend *Dactylis Glomerata*, orchard or cocksfoot grass. Mr. Ewing tells me that, in the Richmond country, the days of timothy alone are numbered. It was satisfactory enough to find the clover and the cocksfoot racing each other to see which could make bloom first. It will be a dead-heat, and therein lies no small advantage.

The stook seemed good, useful animals; one Jersey bull, 3 years old, very good, (1) but a yearling Shorthorn did not please me so much. I was enchanted to find that the plan Mr. Ewing had laid down was to create a family of milking Shorthorns. Now, we shall see what I have so often spoken of in this work as the best farmers' cattle possible; always be it understood, where the land is good enough to support them; and the Richmond land is good enough to support anything. As I could only devote half an hour to the farm, I did not see much of the work going on, but I saw enough to convince me that Mr. Ewing is on the road to success. I think a grant of a few thousand dollars would be of great service to the country as well as to this college, as I am sure the principles on which it is conducted are the right ones. (2)

A Mr. Lunan, who lives on the west bank of the Richelieu, opposite Sorel, is farming his land excessively well. System, Scotch of course; furrows eight and nine inches deep, cross-ploughing, drills for potatoes and turnips, quite as in the Lothians. Plenty of seed: 4 bushels of oats and nearly 3 bushels of wheat to the acre.

I may as well mention that the College farm is let to a Swedish gentleman, a brother-in-law of the Principal. I leave the college at the end of this term, having sent in my resignation to that effect on the 17th April.

The cold weather of the 7th, 8th and 9th of this month of June has had the effect of making everything look very blue or rather yellow. The frost of the 9th checked the corn and beans, and the bottom grass will be wanting. Hay cannot be cheap. The rain, and subsequent frost, at the beginning of January settled that question. Now, then is the time to sow Hungarian grass, fodder-corn, &c., to supplement the store of winter keep. It is too late for that very useful mixture, pease and oats, but not too late for white turnips. Growth throughout July, August and September, is so rapid in this climate, that there is no excuse for being short of cattle-food when hay is likely to fail. And remember, that oat-straw, cut into chaff and sprinkled with a thin soup of crushed linseed, with a little salt, is by no means bad food for young cattle.

I have just received the "Tenth Annual Report of The Ontario Agricultural College and Experimental Farm." Mr. Brown seems to be carrying on his business with great success. The college is full to overflowing, and the means of judicious expenditure are not grudged by the government. I long to hear what Mr. Brown will find to say about the Guernseys and the Hampshire-downs he has lately selected in England. I suppose the sales in the autumn will tell us what the public think of them. I wish I could hope to be present then. I append a few extracts from the report.

4.—BRITISH FLOCKS.

"It is perhaps because Canada is weaker in sheep than in cattle that I thought more, as a whole, of the sheep of Britain than her cattle. It is a proud thing to say that Britain holds every breed of sheep but one in the world of any important value to herself or any other country. The Merino has not yet succeeded in securing a place where so much of its wool

(1) First prize last year at Montreal.

(2) Mr. Ewing tells me that he grew 40 bushels of wheat to the acre, last year, where the fine mowing mentioned above is now!

is used—a fact attributable to its inferior position for the butcher. But among Britain's thirty different types of sheep, there are practically but ten that any one—an experimental station, especially—need trouble about. I was specially struck by the free practice of in and-in breeding in flocks, and how it can be safely pursued there in comparison with the real or assumed dread of it on the American continent. Britain can grow wool as well as mutton, but not needing to do so as a matter of necessity, it was another surprise to find so many grandly woolled flocks of every breed. There is more risk in importing diseases with sheep than any other class of animals, because of their own numerous troubles in Britain, coupled with the carrying property of wool. Our views of the hardy character of the Leicester were fairly upset by finding them shorn and on exposed pasture in cold, wet weather in the end of April in Ayrshire—doing well. They still represent Bakewell's "Soda Water Bottle," in the Border as well as English type, and distinct enough in want of paunch and under wool; but what splendid backs and forequarters! We, states a Canadian, like the gray-faced better than the white Cotswolds, thinking them hardier, better in quality and with better fleeces. The Canadian period for Lincolns is either gone or has to come. The American impression of roughness and want of compactness among Lincolns was not borne out by what I saw of them in England. To be unable at times to distinguish a Lincoln from a Leicester is anything but evidence of such a character, and it is doubtful if we have done justice to one of England's swamp sheep. We have no hopes of making any value for Canadian purposes of Scotland's black-faced Highland. A hardy British breed does not necessarily imply ability to withstand extremes of climate. Heat will kill some animals quicker than cold, and our study of sheep life says that not only will the wool of this breed deteriorate rapidly here, but constitution will also suffer. Three years will tell something with what we have on hand. But the Cheviot has a better prospect with us; for, in addition to a better wool value even than the Leicester at present, its possession of Leicester blood and more southern habits will command its use in crossing with scrubs for certain purposes. An Ontario manufacturer offers us now four cents per pound more for Cheviot than for Leicester wool.

"We can say a good deal already about Down experience, with the exception of Hampshires. These we now have for the first time, and if they behave as well as the Shropshires have done, Canada will be pleased indeed. They are much stronger built, and finer in wool than the Shropshires. We have not lost faith, however, either in Oxfords or Southdown, though the one may be called too big and the other too small, for some purposes. The four Dows of England are making her exhibitions more interesting every year, encouraged no doubt by different crop-growing and disease among cattle."

5.—BRITISH PASTURES.

"It is mild to say that but for her pastures Britain would have been a poor place, agriculturally, during the past decade. But her pastures are pastures—rich enough in wealth, sweet, always crisp, always fresh—a new crop every morning, a clean bed every night, and abounding in shelter and water. British pastures smell of fatness twelve months a year."

OUR ENGRAVINGS.

Shorthorn bull.—22nd Duke of Airdrie at 10 years old.

French draught horses.—A pair of useful farmers' horses.

Guernsey bull.—Cetawayo forms a part of the last importation of the Guelph Agricultural college. Rather long in the leg, but the portraits in the annual reports of the college are seldom artistic.

EARLY MATURITY.

What age is best for beef? The increase in our exports of live cattle during the last few years has called the attention of the American farmer to the profitable age of beef. It is evident that the greater value we can concentrate into a large animal within a given time the greater will be our profit. The United States far exceeds Great Britain and Europe in the amount of meat consumed per capita, and an increase of sales can be reasonably expected when the best quality is offered them. The English farmers understand that their home production of meat is not sufficient to supply the demand. There is room for their own and all we can send. It has been claimed that early maturity offers the only safe system of profitable beef production. In those countries where the first study is to furnish food for the greatest number of animals little matters will be studied that entirely escape the attention of feeders in our country, where there is such an abundance of space and food. But the generous production of a new soil cannot always last unless the soil is compensated for the crops taken from it. The British feeders have for years favored the early maturity of cattle for market, and are fast exploding the old idea that four-year-old beef is necessarily superior to that from a younger animal. The first compromise in England was on three-year-old beef, it being feared at the time, however, that cutting off one year would reduce the quality; but, on the contrary, it proved entirely satisfactory to both butchers and consumers, and it was at length discovered that thirty months were sufficient to produce excellent quality, with but very little falling off in weight. By thus shortening the market age it was found that a large percentage was added to the profit, and the best feeders finally succeeded in maturing the steers in 24 months, realizing about the same prices they had obtained for the 36 months beef. But we shall have still more wonderful statements in regard to "calvy meat," which is procured from steers and heifers at from 11 to 20 months old. Mr. E. W. Stewart, in his work on "Feeding Animals," tells us of an animal killed by Mr. Paget of England, which was only 100 weeks old, dressed 132 stone, which would be equivalent to 1,760 pounds live weight. Some 16 months steers dressed, in the quarters, 600 pounds, and possessed 120 pounds of rough fat.

The Farmers' Review.

SMUT OF WHEAT, OATS, AND BARLEY.

From what we have stated, our readers will see that it is no easy matter to get rid of smut. It may, however, be noted that the fungus can grow on no other plants except cereals and grasses; therefore, in smutted districts, a rotation of crops will tend to lessen the power of the pest. But if one farmer is not growing corn in a certain district, another is sure to be so doing, and so the spores from one farm will affect the ground of adjoining farms. No smutted corn should ever be planted, and it is desirable to get rid of as many of the spores of the fungus as possible. If grain is simply steeped in water, nearly all the spores will pass away with the water, but if the water is poured away, the spores will not be killed, but rather benefited than injured by the moisture. Millers often use a strong exhaust to draw the smut-spores from the grain, but the spores are then only drawn away from one place to another. As a single spore of smut is capable of infecting one plant of wheat, oats, or barley, it is necessary, if possible, to get rid of every spore, and this is a very difficult process where there are often uncountable millions of spores present.

A good destructive wash for smut is vitriol, or sulphate of

copper solution, or bluestone, (1) dissolved in boiling water—one pound of bluestone to five quarts of water. This should be applied for 10 minutes, when cold, to every sack of four imperial bushels. In the north of England smutted corn is sometimes sprinkled with stale urine and the seeds raked in powdered quicklime till they are white; this is done immediately before sowing. Sulphate of soda in solution, or soapy water, the damp seeds afterwards raked in powdered quicklime, is sometimes advocated as a preventive.

The smut fungus grows on a considerable number of wild grasses, in waste places, such as dandel, and the various wild oat, barley- and rye-grasses. Wherever these grasses are seen in a smutted state they should be gathered and burnt. The working men and boys on every farm should be instructed to look after and destroy all smutted wild grasses.

The smut fungus is generally planted with wheat, oats, and barley. The spores of the fungus adhere to the seed, and the spores are able to retain their vitality as long as the seeds of the cereal. The best mode of prevention is found in selecting seed corn from unsmutted fields. Wherever smut exists in corn fields, no smutted ears should be reserved for seed; the seed should always be taken from positions in the fields where no smut can be detected. If cereals are harvested for seed from smutted districts, the produce is certain to come up smutted. This fact can be easily proved in the smallest town garden, for if a few smutted oats be planted in one position, and a few unsmutted ones in another, every smutted example will be destroyed by the smut fungus, and every clean seed will come up free from smut. (2)

The (London) Live Stock Journal.

The centrifugal.—I see no reason why three or four coterminous farms should not possess one of these skimmers common to all of them. I am convinced that sooner or later all milk will be treated in this way; and then we shall no longer see the poor little miseries of calves that now vex our sight. The price for a centrifugal capable of working up the milk of 40 cows is only \$200.00; add \$25.00 or even \$50, for "fixings," and the cost per farm will only be, if four farms unite in the purchase, from \$60.00 to \$70.00 a farm. The horse work might be used for chaff cutting or linseed-bruising.

A. R. J. F.

Breeds of British Sheep—XII.

ROMNEY MARSH SHEEP.

At the southwestern end of the coast line of the county of Kent, there is a very interesting tract of 24 000 acres of remarkably rich grazing land, called the Romney Marsh. It has been wrested from the sea, and is protected from its attacks by an immense embankment. To ensure the best management of its drainage system for the interests of the whole district, it is placed under the control of a corporation. The soil is clay—alluvium—and produces a very thick and heavy growth of nutritious grass, furnishing abundant feed throughout the year. The extensive pastures are said to be beautifully green during the winter. Yet the climate is considered severe. During the winter and spring (4) the cold winds from

(1) A deadly poison.

A. R. J. F.

(2) Take equal quantities of sulphate of soda and quicklime, mix in water until a saturated solution is formed, and sprinkle the wheat with it.

A. R. J. F.

(3) Galties "Mash."

(4) The world, according to Thomas Ingoldsby, is divided into Europe, Asia, Africa, America, and Romney Marsh. A chilly, blustrious place.

A. R. J. F.

the German ocean rush through the Straits of Dover, and sweep over the Romney Marsh with great fury, requiring extraordinary hardihood in any animal exposed to their biting touch. On the other hand, like other very low-lying lands, the heat of summer is very great, and, as the tract is almost treeless, there is no cooling shade to offer protection from the burning sun. I have rarely ever suffered so much from extreme heat anywhere else as I did on a midsummer visit to this remarkable region. (1)

As results of these peculiar conditions we find that, like other portions of England having marked physical peculiarities, this great plain has produced its own distinct breed of sheep, so hardy and so well adapted to the ground that no other breed has been able to supplant them; and we also find the rich pastures fairly crowded with them, as many as *ten or twelve* being seen to the acre. No one can pass through the Marsh without being struck by their great number; and if the visitor feels an interest in meat production in general, or in sheep husbandry in particular, he must desire to learn something of these interesting animals.

No attempt is made to explain the origin of the breed. They have been here from time immemorial. The influences that have moulded them are plainly seen. You are at once attracted by their very short legs, so unlike the Lincolns produced upon similar lands. On examination you find that like all short-legged animals the body is larger than you supposed. It is a peculiar body, being very good on top and really good nowhere else. Fortunately the best meat is on the top. The back is long and straight and of good width. The loin is very good, and yet the sides are flat, and the fore quarter has not the depth that is so desirable, while the hind quarter is deficient in the ham. There is a decided coarseness of bone. The feet are very large. The wool is long and coarse, and is chiefly used in worsted and carpet manufactures. The fleece weighs about ten pounds. (2) The flesh is considered to stand before any other long wool breed in closeness of texture and good flavor. They attain a live weight of nearly 300 pounds.

Owing to the roughness of the spring weather, the lambs are not dropped till quite late, as no shelter is usually provided for either old or young. They are rarely sent to the butcher until two years old or over. Quicker development would be very desirable. It is said that there has already been considerable improvement in this respect brought about by introducing Leicester blood. I was told that the pure Leicesters could not stand the climate, having been repeatedly tried unsuccessfully. When snow covers the ground in winter, the Romney Marsh sheep paw it away to find their provender beneath it. Hay or grain is rarely fed.

I do not know whether any of these sheep have ever been brought to America, but I believe that in many places they might be profitable, and would enable land owners to engage in sheep husbandry who are now debarred from it. (3) Against the maxim, "high lands for sheep," we here have a breed specially suited to lowlands. With other breeds we dread the foot rot if they run in damp pastures, but here is a breed whose great coarse feet, like those of a yearling bull, tread marshy ground with comparative impunity. With other breeds we dread the fluke where fields are wet; with this, the liver is so tough and strong that not many fall victims to the pest. Most other English breeds are brought to their great excellence by high feeding upon cultivated crops; this one, like the black-face upon the mountains of Scotland, feeds upon

grass alone. It would therefore seem that this breed might find a place in this country upon river-bottom farms, or upon extensive sea-side and marsh bordered tracts where others cannot be kept.

While considering this subject, I am reminded how extended a sphere of usefulness has been given to this domestic animal by the Creator. I have seen sheep grazing in great numbers in the former bed of the Haarlem sea in Holland, thirty feet below the ocean's level, and I have also seen them in multitudes away up on the Alps in Switzerland, higher than all other animals in the care of man, feeding upon the close grass that springs into verdure near where the line of perpetual snow retreats for a few short weeks in summer. In the heart of Equatorial Africa, travellers tell us the native chief roasts a sheep for his grandest feast, and in Iceland, within the Arctic circle, the sheep is the most valued of all domestic animals. No other animal but the dog is found wherever man is found. Surely the three ought to be friends and mutually helpful. Not only has this meek creature been richly endowed with the ability to benefit mankind, but so universally are its qualities known that, when they are used to impart a teaching in holy scripture, the illustration conveys its meaning to nearly every race upon the earth.

JAMES WOOD

St. Kisco, N. Y.

The Romney Marsh sheep, commonly called "Kents," owe their improvement to Mr. Gourd, A. D. 1785, who crossed them with Lincolns. In July and August, they supply London with an immense quantity of good mutton—the only long woolled mutton fit to eat; the saddles are very good. The land is so rich, that it will fatten from 5 to 8 sheep per acre. Wethers 20 months old have weighed 200 lbs the 4 quarters.

A. R. J. F.

Securing the Hay Crop.

EDS. COUNTRY GENTLEMAN—In managing the hay-harvest an estimate should be made before-hand as to the time required to secure the crop, beginning soon enough to have the last cutting done when the grass is yet green—not much later than the blossoming period. The latest cutting of timothy should be used for horse feed, the early for milch cows and young stock, which should be cut early, thus favoring two cuttings, the two far exceeding the one crop in weight and still more in quality, the albuminoids and other available nutritive properties being then in greatest abundance. When the grass approaches maturity these are less available. By early cutting, from three to four tons may be realized on good ground, and more with increased enrichment.

The American farmer is fortunate in having a dry climate to secure his hay, so that there is no excuse for any loss. Even in wet seasons, with the use of the hay-cap, there is no necessity for any damage to the hay which, thus protected, may be saved in cock for weeks if necessary. Secure the cloth ready for use and take into the field with the rake, and undertake only as much hay as can be well handled and covered. This is the course in a rainy season. In a drought there is little difficulty in making hay. The cut grass only needs to be well wilted and then thrown into cocks—small cocks best—where in a few days it will be cured. Clover cut in its green state when heading may be treated in this way with perfect safety by using the hay-cap in threatening weather. It will come out in a few days, or for that matter, weeks fresh, fragrant and nutritious, relished by stock and will afford more milk than timothy, if not any other hay. All stock except working horses will thrive upon it. But any grass cut green and well cured will make good winter feed.

NUTRITIVE VALUE OF ROOTS.

EDS. COUNTRY GENTLEMAN—I have no doubt of the high value of the nutritive matters found in 100 pounds of roots;

(1) Poor Pip, in "Great Expectations," lived on the "Mashes."

A. R. J. F.

(2) Washed on the live sheep, of course.

A. R. J. F.

(3) Quite right. If long wools must be had, there is no hardier sheep going than these.

A. R. J. F.

but it is accompanied with so much water (often over ninety per cent), and is grown under such costly processes by high priced labor on cheap land, as to prove a too costly source. In proof of their value our anti-scientific H. Stewart quotes German chemical tables, *minus the water!* That they have any value to invigorate the system and maintain healthy digestion I deny, because practical trials with a view to this problem fail to discover the fact. Sir J. B. Lawes (a root feeder) and others in England find that it requires, in round numbers, 12 pounds of dry matter for one pound of growth. I find in careful and long continued trials, with daily weighed rations and analyzed rations, in cold New-Hampshire, that I get a pound of growth without roots on less dry matter of food. This is indirect evidence; yet of interest to some. I will give one set of the many sets of figures I have:

ROOTS FOR STEERS.

Lot 1, two steers, 2,350 lbs.; mangels and coarse food.
Lot 2, two steers, 2,598 lbs.; no mangels.

Food for both lots, clover hay, stover and corn meal.

Weight of lot 1, Feb. 16 (49 days), 2,463 lbs. Weight of lot 2, Feb. 16 (49 days), 2,694 lbs. Lot one ate 60 lbs. mangels daily, 147 lbs. meal, 1,334 lbs. stover, and 1,472 lbs. hay for the 49 days. Lot 2 ate 147 lbs. meal, 1,600 lbs. stover, and 1,715 lbs. hay. Lot 1 gained 113 lbs. Lot 2 gained 98 lbs.

Second period, change of food, lot 1 on food of lot 2, and lot 2 on food of lot 1. Lot 1 gained in 49 days, without mangels, 125 lbs. Lot 2 gained in 49 days, with mangels, 198 lbs. Lot 1 ate 147 lbs. meal, 1,552 lbs. stover, and 1,577 lbs. clover and English hay. Lot 2, 147 lbs. meal, 60 lbs. mangels daily, 1,592 lbs. stover, 1,705 lbs. clover and English hay.

Excess of gain of mangel-fed steers for 98 days, 78 lbs.; value, at 4½c., \$3.51. Excess of food eaten by non-mangel-fed steers, 236 lbs. stover and 115 lbs. hay for 93 days. The value of this excess of food, added to value of excess of gain of mangel-fed steers, and divided by bushels of mangels eaten, gives value of mangels per bushel, which is 5 1-5c., or \$1.73 per ton.

Whether mangels at that value can be better raised than other foods, is for each farmer to decide for himself. I do not deem it in my interest to raise them. It will be noticed that mangel-fed steers ate the most food, and as it is only food of excess over food of support that gives any gain, the mangel-fed steers had a very great advantage, and the figures given represent more than their true food value. But again, where fodder is very high, say hay \$20 per ton and upwards, mangels would appear to better advantage, and might be afforded. Such area covers but a small part of the country.

Again (and I ask the attention of dairymen to the fact), I find that turnips, mangels and carrots do not behave the same with steers as with cows. With each of them I have made elaborate trials for milk and butter, weighing milk, butter, food and cows—What more would Mr. Stewart have me do to give me welcome to his practical fold? I find a mangel-fed requires every time more milk for a pound of butter than a non-mangel-fed cow; and that their value is reduced to a cipher for a butter cow. I find carrots better for the cow than for the steer, and the best of roots for butter. I have before me a mass of facts, personal and from foreign sources, that corroborate the relative values I have given. In Mr. Stewart's work on sheep, he gives turnips, by quotation, a value per 100 pounds, of 12 pounds of clover. This, with hay at \$12, gives a value per bushel of 60 pounds of 4.3 cents, or \$1.44 per ton.

I am aware that the question is a broad one, and touches the development of a nation's system of agriculture. I have

pondered over it all, and the commercial view (the farmer's view) that we can do better with other crops at present. And in support, I will say that not one farmer in ten who has tried roots continues their use, and a hundred years of urgent advice to grow roots have failed to see the relative arou in root tillage increase; rather it wanes.

If I were breeding cattle for fancy prices, and grew them regardless of cost, I should use some roots. Such breeders do use them, and are the loudest in their praise. Again, I am bound to say, in the interest of truth, that in five years' trials I fed roots to fall calves in winter rations, four against four, and that I found a better value here than anywhere else, and a value that I believe will justify their use in moderate quantities. In this respect I speak from impression retained from figures then recorded. I have not revised them since. If I were making fine butter I should feel warranted in using carrots. (1)

J. W. SANBORN.

AMERICAN SHEEP HUSBANDRY—VII.

EWES WITHOUT MILK—CARE OF LAMBS.

Eds. Country Gentleman—I have had my share of bad luck in trying to raise lambs, and have learned from a great deal of experience that care beforehand, and preventives, are the best means to get rid of trouble and loss. To insure success, the ewe should be fed as near right as possible, to have blood free from fever, and udders filled with milk, but not to the extent of being caked. The ewe should be in a good, thrifty condition, which is better than being fat. The food which would make ewes fat before lambing, would also cause the secretion of too much milk, which would create inflammation, soreness and excitability. All of these are disturbing conditions, and more or less the means of loss.

By a misprint, I was made to say, in article VI, that a mistake was made in feeding so much clover. It should have been corn. Since writing this fact, I have talked with a number of other sheep men, and they agree with me that corn is the worst possible grain to give to ewes before and after lambing. If a ewe has but little milk, the secretion may be increased by feeding a mash of wheat middlings. (2) Some sheep will not eat it after being scalded. To such it may be fed in the form of slop, with a pinch of salt, or if they do not like it in this form, moisten it enough to prevent the dust from being drawn into the nostrils, and mix oats with it, and from a gill to a half gill of linseed oil meal. A tablespoonful of clear linseed meal is all a sheep should have, and this will take the place of the linseed cake meal. I have found nothing more annoying than to have lambs born and the mothers short of milk; hence I give the hot ration, with clover hay. A few apples or carrots will also help to make milk.

When there is no milk, then resort must be had to a cow to support the lamb. If possible, the first milk taken into the stomach of the lamb should be from some ewe, to start its functions in a natural manner. I have in some instances allowed a lamb, thus deprived of its mother's milk, to suck a ewe which had not yeaned, and in other cases robbed another lamb of a part of its portion, so that there might be a natural action of the lamb's stomach. When clear cow's milk is given to a newly-born lamb, the chances are that it will die. They do not seem to be able to digest it, and colic is the result. The milk of a new milch (3) cow is best. At first the cow's milk

(1) In other words, the whole practical experience of England, Ireland, and Scotland, for one hundred years, is perfectly worthless!

A. R. J. F.

(2) Oatmeal mash, with a dash of linseed, much preferable.

A. R. J. F.

(3) Meaning, probably, newly calved cow. The *beislyn* acts as a mild purgative.

A. R. J. F.

should be diluted one-third with warm water. After a few days, the lamb will be able to digest the whole milk, and it may be given from a bottle, with a rubber nipple over the mouth. This is a better way for the lamb to take it than by drinking, as it secretes more saliva in sucking the nipple than by drinking. The difficulty with young lambs is in getting the bowels started. The first excrement is hard and waxy. It seems to require the first milk of the mother to expel this, and when this is not given to the lamb, it is not discharged, and of course no action of the stomach and bowels takes place. Such a condition is speedy death. There is no trouble about the new-born lambs taking food, but the trouble is to get the stomach and bowels to act without the purgative milk which nature has stored up for them in the mother's udder. Molasses has been used, mixed with the cow's milk, but I never had any success with it. I have tried syringing the bowels with molasses and water, and starch and water, with exceptional success. Until some physic is found adapted to take the place of the first milk, the mortality among lambs will be very great. Ordinary purgatives, like castor oil and linseed oil, are too severe, and produce gripes or colic, which is almost sure to be fatal in such delicate animals as lambs.

I would take the milk from a ewe or ewes which had plenty, and make their lambs go short, before resorting to cow's milk entirely. (1) When there is a start on ewe's milk, cow's milk may be added as supplementary food without so much risk. I have often taken them to the cow, and added to a short supply from the ewe by letting the lamb suck the cow, by squeezing the teat gently above its mouth. One season, a whole cow's milking was used in this way, the lambs following me in a drove for the extra food, as the ewes did not furnish all they wanted.

A lamb will live on very little milk, if it is kept in a warm place, and has a warm blanket on it. By the time it is two weeks old, it will begin to pick clover leaves, and when three weeks old, it will lick a little meal or eat oats with its mother. When a ewe loses her lamb, I always put her in a close pen or box and use her for a wet nurse to help out the lambs which are short, and if the lamb's own mother happens to be feeble, or to have but little milk, I make her the adoptive mother and let her rear the lamb. A twin lamb can often be reared in a much better way by causing some ewe to adopt it which may have lost her own. (2)

To make a ewe own her own or another's lamb, she should be tied up in one corner of a small pen, or a box big enough to hold her and the lamb. She may be tied about the neck with a small cord, so she can lie down, but not long enough to allow her to hurt the lamb. By holding her a few times to let the lamb suck, she will soon become accustomed to it, and the lamb will be able to help itself. When first turned out, she should be put by herself, with only the lamb for company, and she will take to it. To keep the ewe quiet, she may be hobbled, and this will prevent her getting away from the lamb. When a ewe is thus confined, she must be fed and watered carefully, or she will dry up in her milk and get sick. A sick ewe makes a sick lamb. A lamb will learn to eat when the food given to its mother is scattered thinly along the trough, so that it takes a considerable time to gather it up. It will do the sheep more good also fed in this way. A little lamb will take to ground oats before it will to almost any other meal, and nothing is better for it.

A sheep establishment should be made convenient for the care of the ewes and lambs. There should be a number of

small compartments on the sunny side of the building, and, in the absence of such, large boxes may be placed along the side, in which to confine a ewe and a lamb. Two or three slats nailed across the corner will hold the hay, which never should be put under foot, as a sheep will not eat, unless starved to it, fodder it has trodden upon. The grain box should be taken out as soon as the grain is eaten, or it will become tainted and dirty, and the sheep will not eat out of it. It is folly to try to force sheep to eat out of a foul dish, or to drink dirty or bad-smelling water. They will almost die first, and this strain and deprivation to a ewe with a lamb will make a poor growth, if not a shrinkage. A chilled lamb must be made warm as soon as possible, and kept warm. The feeding of oil-meal will do much to keep the bowels of the lambs in good order, and this is why, if for no other reason, it should always be fed to suckling ewes. It is always better to put a ewe, before the lamb is born, in a comfortable place, than to run the risks of chilling and congestion, which are quite likely to follow. This is certainly not a good beginning for so delicate a creature as a lamb. In the absence of milk, or where there is a lack, thin oatmeal gruel, with an egg mixed with it, would be as nutritious as anything, and as easily digested. For a very young lamb, a little starch might be added to the milk.

F. D CURTIS.

Kirby Homestead, N. Y.

PRUNING ROSE BUSHES.

RECENTLY planted Rose bushes may be pruned at once. They will not be very rapid in commencing growth, and it is best when they do begin that the wood formed should be permanent. We usually shorten the branches to within four or five eyes from the bottom of each. Plants put in last year, or in former seasons, should be pruned according to their habit. Shy-growing varieties should never be hard pruned, as there is a possibility of crippling them, but robust growers are benefited by a rather severe pruning. Early pruning is a great mistake, as it induces the lower buds to start into growth prematurely, and they frequently suffer for it in being overtaken by frost. Plants which have formed a number of small growths and a few very strong long ones should have the small ones closely cut in, and the strong shoots relied on for a supply of bloom. About six inches of growth, at the most, is sufficient. What we have noted might be described as the hortsper system of pruning, but it is not the only mode of dealing successfully with Roses. — VICK'S MAGAZINE for June.

PEGGING DOWN ROSE BUSHES.

When dwarf bushes form growths in autumn, from five to eight feet in length, it seems a pity to cut them all off at pruning time in spring, and where there are many plants grown we would strongly advise that a number of these growths be left uncut, and peg them down. They will not, if very strong, bend down to touch the ground, as some may think of trying to root them; but this is not the object, the principle being to bend them over and peg them about a foot or so from the ground, allowing them to remain full length, and every bud along the stem will soon send up a shoot, and these pegged down stems will bloom very profusely. For profuse blooming no plan will equal this, and it is rather surprising that pegging is not oftener practiced. Any one wishing to possess a mass of Roses, growing and blooming in semiwild confusion, could not do better than peg down the shoots over some beds. — VICK'S MAGAZINE for June.

(1) Dilute with water.

A. R. J. F.

(2) I presume that, even in the U. S., no one would dream of "cosetting" a lamb, if a ewe could be found who had none.

A. R. J. F.

JUNE ROSES.

A gleam of red in the garden,
A breath of balm on the breeze,
And lo! all the sweet June Roses
Are opening under the trees,
And I think, of all summer's flowers,
None are so sweet as these.

There comes to me with the fragrance
Out of the heart of the Rose,
A memory, tender with sorrow,
Of one who no sorrow knows,
Who brought to my life such sweetness
As the June gains from the Rose.

She gave me her love's rare flower;
O, never a blossom that blows
Is sweet as the heart of my darling,
That she gave me with a Rose.
Darling, the blossom has faded,
But your love no fading knows.

I bend o'er the beautiful blossoms
That nod o'er the garden wall,
And my heart is astir in my bosom,
As if it heard her call.
Where are you, oh, my darling,
Sweetest June Rose of all?

Oh, my love, like a summer blossom,
You died, as these Roses will;
Died, but the heart you gave me
I hold in my keeping still;
I shall keep it forever and ever,
Mine through all good and ill.

Blossom, oh, Roses of June-time,
Turn your red hearts to the sun,
You were born to blossom and wither
When summer seems just begun:
So died the hopes of life's summer,
Like the Roses, one by one.

But I fancy each faded blossom
Will some day blossom again,
And hopes that died with the Roses,
Like the hopes of so many men,
Will come back in the June of Heaven,
And then, oh, my darling, then!

—EBEN E. REXFORD, in VICK'S MAGAZINE for June.

A ROSE HEDGE.

I have lately planted a hedge which I believe to be entirely new and very promising. It is of young plants of *Rosa rugosa*. This Rose, which is quick growing, has very close strong thorns, and if a hedge of it is carefully made at the bottom, I should doubt if even rabbits could get through it. I used seedling plants, but where the Rose thrives it makes many suckers, and it would save time to use these. This Japanese Rose flowers well, even when closely cut in, and the early foliage stands frost.—G. F. W., in VICK'S MAGAZINE for June.

THE PEPPER ROOT.

This interesting plant may be easily transplanted, and if set in a rich border among shrubs, it will afford a supply of pretty flowers at a season when they would be very desirable. Five species of *Dentaria* are described by GRAY as found in the northern part of this country, but he makes the significant remark that "all these species, except the first, (*D. diphylla*),

run together." Some good observers who have carefully noted this plant are of the opinion that all the five species are really but one, their peculiarities being dependent upon the conditions under which they exist.

It is a great delight, and, if one is not acquainted with them, a surprise, to find these flowers in spring soon after the advent of mild weather, and while trees and shrubs are yet leafless. Those who have never hunted the wild flowers of early spring have missed a pure and peaceful pleasure that is one of the charms of rural life.

"It is very strange that our pulses thrill
At the sight of a voiceless thing,
And our hearts yearn so with tenderness
In the beautiful time of spring."

—VICK'S MAGAZINE for June.

The Industrial Fair at Toronto.

The Industrial Exhibition Association, of Toronto, have their advertisement in another column, announcing their great fair, to be held at Toronto from the 7th to the 19th September next. The prize list, which contains the fullest information and amount of premiums offered, is now ready, and any one can procure copies by dropping a post card to Mr. Hill, the manager and secretary, at Toronto. The list has been thoroughly revised since the last exhibition, and among many important additions which have been made is a full set of prizes for Holstein cattle.

The premiums offered in the live-stock and poultry departments especially, are the largest offered at any exhibition in the Dominion, and consequently a prize obtained at the Industrial Fair is worth sending a long distance to obtain. Our stock breeders and owners would do well to procure copies of the prize list.

Our Quebec farmers would be amply repaid by a visit to the Toronto Fair. The arts department of this exhibition is a wonder in itself, and will well repay a journey to Toronto by the admirers of the arts and sciences:

NON-OFFICIAL PART.

KNOW THYSELF, by reading the "SCIENCE OF LIFE," the best medical work ever published, for young and middle-aged men.

Nervous Debilitated Men

You are allowed a *free trial of thirty days* of the use of Dr. Dye's Celebrated Voltaic Belt with Electric Suspensory Appliances, for the speedy relief and permanent cure of Nervous Debility, loss of Vitality and Manhood, and all kindred troubles. Also, for many other diseases. Complete restoration to health, vigor and manhood guaranteed. No risk is incurred. Illustrated pamphlet, with full information, terms, &c., mailed free by addressing Voltaic Belt Co., Marshall, Mich.

The only Practical Swing Stanchion Invented, and the only one that is connected together at the top when open. C. D. BROOKS, PROP'R, Addison, Steuben County, N. Y. Manufactured and for sale by FENNEL & ANTHES, General Agents, Berlin, (Ont.) Canada. A Liberal Discount to the Trade.

TO BREEDERS AND AGRICULTURAL SOCIETIES.

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A few choice head of Thorough-bred Ayrshires, male and female, from the undersigned's celebrated stock, so much appreciated for its well known milking properties, and which, as such, obtained twice, the 1st prize at the Ottawa Dominion Exhibition, also the 1st prize for the best herd at Hochelaga County Exhibition for 1884. For particulars apply to JAMES DRUMMOND, Petite Côte, Montréal.