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AGRICULTURAL REVIEW.

APRIL.

Agricultural Review:—Contents.—Meeting of the Board of Agriculture for Lower Canada.—Election of officers.—Petitions from several societies.—Agricultural library and collection of implements.—The Sherbrooke Provincial exhibition.—**Editorial.**—The obligations of the Board.—Agricultural colleges.—The importation of stock from the world's fair in July next.—Encouragement to the flax growers.—The annual report of transactions of the Agricultural Board and societies.—What should be done for the provincial exhibitions.—The Quebec Agricultural society.—Officers and directors of all the Agricultural societies of Lower Canada.—**Our Rambles.**—Our excursion in the counties of Laprairie, Beauharnois, Huntingdon, Chateauguy, Napierville, St. Johns, Iberville, Chambly and Vercheres.—More about importing stock from London.—A visit to the farm of Mr. A. St. Marie, Laprairie.—Rotation—Crops—Cattle—Suggestions.—**Calendar of Operations.**—Farm Buildings—Cattle—Clover—Drains—Farm accounts—Fences—Grain—Grass-land—Hired men—Horses—Ice-houses—Manure—Pasture—Plowing—Potatoes—Poultry—Seeds—vine—Orchard and nursery—Kitchens and fruit gardens—Flower garden and Lawn—Green and hot houses.—Grapery and orchard-house—Apiary in April.—Fat cattle shows.—Drainage—Dairy management.—Soulanges Agricultural Society.

Official Dep't.

BOARD OF AGRICULTURE FOR LOWER CANADA

Montreal, 12th March, 1862.

Present:—Hon. L. V. Sicotte, President; O. E. Casgrain, Vice-President; J. O. Taché, B. Pomroy, Hon. J. D. Tessier, Hon. P. I. O. Chauveau, Hon. P. U. Archambault, F. M. F. Ossaye, Professor of Agriculture at the Normal School, Jacques Cartier; Rev. Mr. Pilotte, Professor of Agriculture at St. Ann's College, Kamouraska.

The official advice of the Minister of Agriculture indicating the result of the election of the members of the Board for the year 1862, is read and order is given that it be entered in the register. The Board then proceed to the election of a President and Vice-President.

Moved by the Hon. J. U. Tessier, seconded by Mr. Taché, that Louis Victor Sicotte be re-elected President; carried.

Moved by Mr. Ossaye that Mr. Casgrain be re-elected Vice-President.

Mr. Taché proposes, and it is resolved, that Mr. Pomroy and the Rev. Mr. Pilotte, be named to examine the accounts of the treasurer, and report this day.

Several petitions from the Agricultural Societies of Joliette, Berthier, Champlain, and Charlevoix, No. 1, asking to be permitted to employ their funds to purchase clover and other seeds, to be distributed to its members. Granted.

A petition from the Agricultural Society of Jacques Cartier, praying for aid to purchase hemp and flax seed to be distributed among its members.

On motion of Mr. Ossaye, seconded by Mr. Pomroy, the Board grant a sum of \$100 to the above conclusion, and it is resolved that this Board pay a similar sum to the Agricultural School of St. Ann's College, and to the Agricultural Society of Sherbrooke, to be employed in cultivating textile plants, and in the encouragement of this culture, and that this Board, through their President, pray Government to give orders to place at the disposal of these two institutions, *flax-dressing machines*, if any be imported by Government.

A petition from the Agricultural Society of Kamouraska, praying that a sum not exceeding \$800 be placed at the disposal of the Board of Agriculture of Lower Canada, for the pur-

chase of a stallion of the breed called "*Percheron*" or *Ruce Normandie*, for the use of this Society, and in conformity with a resolution of the Board of Agriculture, bearing date 8th January, 1862.

Explanations are given by the Rev. Mr. Pilotte, and the petition is granted; the stallion to be purchased must be of the breed called "*Percheron*," two years old, and of brown-bay colour.

A letter from the Agricultural Society of Drummond, No. 1, offering its thanks to the Board for the offer of importing improved cattle, stating that this Society had always done so to the satisfaction of its members.

Information from the Agricultural Society of Pontiac, stating that it had laid by part of its funds to purchase improved cattle, in accordance with a circular of this Board, bearing date 8th January, 1862.

Moved by Mr. Casgrain, seconded by Mr. Tessier, that the \$250 which ought to have been paid to Mr. Dumais for the encouragement of the publication of the "*Gazette des Campagnes*," be paid to Mr. Proulx.

On the report of the President who informs the Board that he has considered the question of acquiring a permanent locality for this Board, it is resolved to suspend all negotiations relative to this subject, until the President shall have taken steps towards the Government to obtain the concession of some of the public property situated in the City of Montreal.

A report from the Committee named to examine the accounts of this Board is received and approved.

The Board adjourn till 3 o'clock this afternoon, and the same members are present.

Resolved on motion of Mr. Tessier, that Mr. Ossaye be authorised to rent chambers or a house for the offices and sittings of the Board.

On motion of Mr. Ossaye, it is resolved that seeing the state of illness of the Secretary of this Board, Dr. George S. Leclerc be named assistant Secretary, with a salary of _____ per annum, to be taken from that of the Secretary, that the books and cash be kept by the assistant Secretary, who until further orders will sign all the checks with the President, and that the bank be notified of this resolution.

On motion of Mr. Pomroy, it is resolved that the Secretary be instructed to correspond with the Member of Parliament for Sherbrooke, the Mayor of the city, and the President of the Agricultural Society of Sherbrooke, that they make known to the Board what sums of money they can place at their disposal to help it to defray the expenses of the Exhibition which will be held by the Agricultural Association of Lower Canada in October next.

Proposed by Mr. Gasgrain and resolved, that \$200 be employed and devoted to establish a museum or exhibition of improved agricultural implements, to be opened and kept by the Agricultural School of St. Ann's College, whose proprietors shall have the care and direction, but gratuitously, and that this sum be paid on the order and under the direction of the President.

The Board then adjourned.



THE last meeting of the Board of Agriculture for Lower Canada, as will be seen by the following remarks, were

fraught with questions of immense interest for the progress of agriculture; and never has the Board brought forward so many and such important topics. They have surpassed their usual measure of suggestions, and have opened up a new system of working, with a desire to devote the liberal awards of public money to the promotion of the greatest amount of possible good. Up to the present time our Provincial Shows have been rather an agricultural festival or rejoicing, than a meeting together of persons highly interested in the progress of the art and science of agriculture.

The amount of the awards based as they were on a principle of distribution, rather than upon the true reward of success obtained by intelligent care and culture, has done much to retard the progress of the wise and intelligent farmer in the adoption of a superior breed of animals, and a better and a more rational system of agriculture.

The statute law enjoins that the Board of Agriculture must import both animals and seed grain of a superior quality; establish also a museum and library where the farmer may find all sorts of agricultural implements for inspection, and adopt those best suited to his wants. But heretofore both the museum and library have been considered of secondary importance, compared with the usual annual exhibition, which has generally resulted in exposing to the public the defects of an agricultural organization, and the absence

of the true principles that ought to have been their guide, both in respect to the choice of breeds the best suited, and of the most useful implements.

It appears that the Board has at last resolved to face all difficulties, and at the same time has shown its sincere desire to fulfil all the important obligations that are required by the Provincial Statute, viz:

1. To take measures, with the approbation of the Minister of Agriculture, to procure and set in operation, a model, illustrative, or experimental farm, or farms, in their respective sections of the Province, and in connexion with any public school or college, and to manage and conduct the same.

2. To establish at Montreal an agricultural museum, and an agricultural and horticultural library.

3. To take measures to obtain from other countries, animals of a new or improved breed.

4. New varieties of grain, seeds, and vegetables.

5. And to test the quality, value, and usefulness of such animals, grain, seed, vegetables or other productions, implements or machines.

6. To publish in such manner and form as to secure the widest circulation among the agricultural societies and farmers generally, all such reports that the Board may adjudge suitable for publication.

In reference to the first suggestion, the Board has named a Committee to report at its next meeting in April, the best and most practical method to establish an agricultural School in Montreal.

The district of Quebec at the present time possesses such an establishment at Ste. Anne's, Kamouraska, and Montreal ought ere this have had such an establishment, and if our information is correct, we believe the projected one at Montreal will be attached to the farm belonging to the Montreal Seminary, which is at present occupied by Mr. Ossaye. Whatever may be the results, they indicate a desire on the part of our farmers to obtain practical and useful information. We have always held that the teaching of agriculture as a science must form the foundation of all agricultural progress in the advancement of Canada, and it is with no small pleasure we perceive the march of public opinion in the right direction on this important point.

The establishment at Montreal of a museum of improved agricultural implements, is intimately connected with the teaching of agriculture, and is more particularly called for by those farmers who have a desire to modify their present system of manual labour. Farmers from a distance will be pleased to find there an assortment of the most approved and useful implements of husbandry, and will at the same time be astonished at the inventions devoted to the manual part of agricultural labour, at the adoption of the means to a given end, and saving of a great amount of time and money. Manufacturers have for a long time complained, and justly, of the impossibility to answer the demands of the farmer, because they had no approved models.

Again, the formation of an agricultural library is another step which will in no small measure contribute to illustrate the use and design of the different forms and uses of these implements. The Board does not neither intend only to have a museum at Montreal, but has also voted a sufficient sum of money for a similar museum at St. Anne's, where the neighbouring counties can obtain a similar advantage to those in the district of Montreal.

The importation of animals has formed an important object of discussion by the Board, and this to the profit of the local and country societies, evinces the great interest shewn by the Board in this desirable movement. Up to the present time both individuals and societies adopted the ruinous practice of importing animals by agents, which caused a large

expenditure of their funds without any corresponding advantage. The Board have now decided to purchase any animal desired, the cost to be repaid in three years, so that the difficulty is now on the point of being surmounted, and will form one of the best means of improving the native breed of cattle.

The stallion will be with few exceptions of the Normand "Percheron" breed, which our readers may have had occasion to admire on the Armstrong battery. The engraving just given is a fair model of the breed.

Many county societies have already intimated their intention of devoting from \$600 to \$2,000 each, for this important purpose, and if the lower part of the Province is quite as sensible to the good results to be obtained, as the district of Montreal, we believe the



Stallion of the Normand "Percheron" breed.

following will be about the number of the different animals which will be imported.

Stallion Horses	30
Horned Cattle.....	30
Sheep.....	50
Swine	50

160

Societies who wish to profit by this offer of the Board, should at once hasten to send in their "resolutions," and at once collect the amount of their subscriptions, so as to obtain the Government allowance in the month of May next.

The next Provincial Exhibition which will be held at Sherbrooke in the month of September, will certainly offer the best collection of animals that has yet been shown in Canada,

and will be worthy of the admiration of the numerous visitors which will no doubt visit that locality.

The importation of improved stock was not the only point discussed at the late meeting, but the importation of flax and hemp seeds furnished also an important subject of consideration, and is worthy the attention and encouragement of farmers generally. Already the government has ordered 6 machines which have to arrive on board the Montreal ocean steamer "Norwegian." The distribution of those machines ought to be equal in the two Provinces, that is if our farmers will only cultivate these plants with the same zeal as are cultivated in Upper Canada; we shall again refer to the culture of flax and hemp. The Board of Agriculture so as to encourage the

cultivation of these productions, have voted \$390 to be distributed in the district of Montreal, the Eastern Townships, and the Lower Districts, in three equal parts, to be employed in the purchase and importation of hemp and flax seed, for the purpose of cultivation. This we have no hesitation in saying, is a movement in the right direction.

The formation of agricultural museums, the distribution of seed grain among the different county societies, and the establishment of experimental farms in connexion with agricultural schools, will soon enable the Board to realize their great value, and to make known to the public at large, by means of their official newspaper, the results to which they have given rise. Agriculture will then be enriched by the results thus obtained will be founded on scientific principles.

The Board has again here fulfilled its programme in giving facility to the circulation of our "*Journal and Review*" among the different county societies, in the best possible manner to ensure its circulation, and it only now remains for the Board to give to our rural population generally, an annual report of the progress realized by each society, and by those special institutions which are on the eve of being established.

It would be no doubt of great importance to the farmer if a Weekly Journal of Agriculture could be established, as it would form the medium of communication, and exchange of ideas in these important and useful studies which he is called upon to exercise. But it is the Board in its official reports that must enlighten the public as to the progress, considered as a whole. The Board of Agriculture of Upper Canada, and also the Boards of the greater parts of the United States, publish annually a detailed report of the obtained results, the progress realized, and those subjects specially remaining for future investigation. These annual reports are distributed among the most influential persons, whose interest is so essential to the well-being and prosperity of the object in view.

The Board seems here to have adopted a method which will tend to advance with rapid strides the required improvement, and we feel that no measure can so well secure the success of these efforts than the publication and distribution of their annual reports, founded on the new materials and on the new plans now brought forward. Otherwise ruin will follow rather than progress, and we shall retrograde to our old customs, under the pretext that we have endeavoured but in vain to accomplish the end in view, without having obtained any beneficial results. Notwithstanding that the results are the most satisfactory, if they are not published and proclaimed to all, the obstinate will still hold, and with some degree of reason, that the written facts should be at the disposition of all.

We insist upon this point, because we believe it to be one of the greatest importance to insure the desired success of the present attempt made by the Board of Agriculture.

The present movement of a Bank of "*Crédit foncier*," in favour of which numerous meet-

ings have been held in various parts of the Province, has not escaped the attention of the Board, and have called the attention of the government to the importance of the measure, as vital to the progress of our rural districts. Agricultural improvements cannot be carried on unless our farmers possess the means, or can procure money with easy conditions, and at long credit.

The press have joined us with one voice, and have forced its consideration on the government, who by adopting the measures thus proposed will confer a great boon on the country.

The project of the Hon. L. V. Sicotte is now before the House of Assembly, and also a project to amend the law in reference to agriculture, in substance such as was perused by the House of Assembly in its last session. The maturation of these important projects will engross the wisdom of our individual members, and will enable us to judge of their patriotism.

The Provincial Exhibition will be held in Sherbrooke in September next, and this has also arrested the attention of the Board. Mr. Pomroy, representing the Eastern Townships, has been charged with the power to adopt the necessary steps in reference to the county societies in that neighbourhood, with a view to request them to give over their funds for this year to the local committee, so as to secure a sufficient sum of money necessary for the purpose.

Up to the present time the Board alone has borne the expense of each of these Provincial Exhibitions, which has been the means of reducing its finances to that state that it was impossible to acquit those numerous and urgent duties imposed upon it by the law, for the advancement of agriculture. For the future this will not be the case. The different localities where the show is held will be obliged to contribute a large portion, and the Board will probably give but the premiums. The custom to put the whole of the expenses of the Provincial Show upon the Board, has resulted in ruinous consequences. In Upper Canada the exhibition is only held where they furnish free all the buildings necessary. The Board draws the price of entrance, and the stall fee of each animal, amounting to \$4 for each head of horned cattle, which furnishes a very considerable amount. This plan ought to be adopted in Lower Canada. We believe that a public dinner the second day, at which all the successful competitors should be present, would form an excellent means to bring about discussion upon many important topics, and would enable us all to work together for a common purpose. To insure a good attendance. \$1 should be retained off each first prize for the dinner, but it should be open to all who might wish to be present on the payment of a like sum, and we believe that 200 guests would be generally present.

Horse races at the same time would be the means also of getting together a greater number of persons, which would greatly increase the receipts. The publication of a catalogue of all the animals and articles exhibited,

with the list of the prizes awarded, should be sold the day of the show. This desirable innovation in Canada, would perpetuate the remembrance of the prizes gained by the successful competitors; it should contain the name of the place, the breed of the different animals, and the name of the different implement manufacturers, and of which, generally, the addresses are not sufficiently known.

The list of prizes to be offered has great need of important changes, which will be taken into consideration by the Board at its next meeting, which will be held during the present month, so that we shall be able to furnish the result in our next number for the information of our readers.

The proprietor begs to remind the secretaries of agricultural societies that he is prepared to execute with dispatch and on moderate terms, printing entrusted to him. Having laboured to make the "*Agricultural Journal*" worthy of the support of the societies, the proprietor feels that he is in a position to make this request. The most distant counties will find it advantageous to avail themselves of the moderate terms, expedition and taste, which the proprietor will give to printing entrusted to him.

We are always disposed to give our correspondents a fair discussion, and we hope that Mr. Matthew Davidson will at an early reply give such explanations as the occasion proves necessary. We will not venture to give an opinion on local complaints, on which we are not sufficiently informed to discuss. We receive from the Quebec Agricultural Society the following correspondence.

AGRICULTURAL SOCIETY OF THE COUNTY OF QUEBEC.

To the Editor of the *Lower Canada Agriculturist*.

DEAR SIR.—The correspondence signed "Matthew Davidson," published in the *Lower Canada Agriculturist*, having been taken in consideration by the members of the Agricultural Society of the county of Quebec, at their annual meeting held at Charlesbourg on Friday the 17th January last, I have been authorised by them to make the following answer:—

That in acknowledging the imperfections of all human institutions, this Society repudiates the censure contained in a letter signed, "Matthew Davidson, Ste. Foy Road, County of Quebec," in the January number of the *Lower Canada Agriculturist*.

That Matthew Davidson of Ste. Foy has long and persistently shewn hostility to the county of Quebec Agricultural Society, by refusing to become one of its members and otherwise calumniating the Society instead of joining heartily in the good cause, whereby alone the reforms he professes to have at heart might be carried out. That this society learn with satisfaction that the letter above referred to, received most unequivocal censure from more than one member of the City of Quebec Agricultural Society, at its last meeting on Tuesday last when Matthew Davidson was present.

Such letters being denounced as detrimental to the interest of agricultural Societies generally, and calculated to bring them into con-

tempt, and that the proper place in the first instance for suggestions or censure would be at the meeting of the society itself, where, if not attended to, the aid of the Press might be sought with advantage in which opinion this society heartily concurs.

The Editor of the *Morning Chronicle* of Quebec was present on the grounds of the last exhibition of this society, and his report in the *Morning Chronicle* of the 16th October last, is a good answer to the false statement of Matthew Davidson. There is an extract of his report, viz.:

"The Annual Exhibition of the Agricultural Society of the County of Quebec took place yesterday on the grounds of M. T. S. Hamel, at Ste. Foy. Several hundred people—almost exclusively the yeomanry of the County—took advantage of the fine weather and went to see it. The list of entries was considerable, and the show was on the whole not only successful but very satisfactory, especially to those who remember what the exhibitions in this district used to be a few years ago. For on almost every branch of agricultural industry, here and throughout this portion of the Province, are now stamped the signs of progress, and it is apparent to the close observer that we have entered altogether upon a new career. Yesterday there were some well bred, small boned pigs—some very good Ayrshire cattle—there were some southdowns among the sheep—the horses were very fine, especially those of that Norman breed which has been so well preserved here—the samples of wheat, oats, barley, timothy seed, &c., were very good—and, best sign of all, there was an excellent show of carrots, beets, white and yellow turnips, swedes, altringhams, and other root crop. We say this is the most cheering sign because wherever you see root crops grown, you are sure to find agriculture in an improving condition. Not only does a crop of roots prepare the soil for the cultivation of cereals, but it enables the farmer to keep his cattle in good condition out of doors a month longer than he can on frosted pastures, and provides good, cheap nourishment for them throughout the winter. We proposed simply to report, chiefly for the information of our Upper Canada readers, and, no doubt, to their gratification as well as our own, the progress we are making here."

By your inserting these remarks, you will receive the thanks of

JOS. LAURIN,
President of the Agricultural Society of the County of Quebec.

Lorette, 20th January, 1862.

THE GENESSEE FARMER.—The March number of this well known agricultural journal is received. As we have often said before, the *Farmer* is the cheapest and one of the very best agricultural and horticultural papers published. It costs only 50 cents a year, and we see from this number that the publisher offers some exceedingly liberal premiums to all who subscribe for the paper at this time. Specimen copies of the paper are sent free to all applicants. Address JOSEPH HARRIS, Rochester, N. Y.

AGRICULTURAL SOCIETIES, LOWER CANADA, 1862.

<i>Societies.</i>	<i>Organised at</i>	<i>Presidents.</i>	<i>Vice-Presidents.</i>	<i>Secretary-Treasurers.</i>	<i>Board of Directors.</i>
Argenteuil	St. André	Edward Jones Jr.	Thomas Jefferson.	H. Howard	R. Byers, Lachute, James Wilson, dito, Charles Wales, St. André, Alex. Gordon, dito, W. Ubricht, dito, T. Ouvens, Chatham, J. Hays dito.
Arthabaska	St. Christophe .....	.....	.....	.....	Has neglected to report.
Bégot	St. Rosalie	A. Dion	P. Larachelle	P. S. Gendron	C. Lafébrve, St. Hugues, F. N. Poitras, Ste Hélène, J. Gagnon, St. Dominique, A. Ouhmet, St. Pie, M. Desmarais, St. Libaire, C. Gauthier, H. Gendron, St. Théodore d'Acton.
Beauharnais	Beauharnais	J. Keitte	J. B. Scott	J. M. Browning.	David Banning, L. P. Coutlée, John Symons, C. Depceas, P. Lynch, C. Bayeven, Thomas Watson.
Beauce	St. Joseph	Hon. A. E. Duchesnay	Jos. O. C. Arcand	François S. A. Bélanger	J. P. Proux, et Louis Barbeau, Ths. J. Taschereau, et Charles Lacroix, et George Lessard.
Bellechasse	St. Michel	O. C. Fortier	E. Forgues	P. Forgues	Jean Lemieux, Augustin Audet Jean Languay, Jacques Lainesse, Charles Paquet, Finin Fournier, L. E. Turgeon.
Berthier	Berthier	L. M. Olivier	J. O. McBean	Chs. Emond	Raymond Maguan, Ed. Oct. Guthbert, Michel Grandpré, Xavier Desy, fils, Aubert Hamelin, P. Pielt, L. G. Lafontaine.
Bonaventure, No. 1	New Carlisle	Hon. Juge Winter	R. H. Montgomery	Chs. Kelly	J. R. Hamilton, J. G. LeBel, E. Martel, Eer, Nouv. Richmond, R. Pritchard Port Daniel, W. McPherson, W. McDonald, Haple : B. McGie.
Bonaventure, No. 2	Carleton .....	.....	.....	.....	Has neglected to report.
Brome	Brome .....	.....	.....	.....	Has neglected to report.
Charlevoix, No. 1	Malbaie	J. T. Reeve	C. Demeule	Ed. Tramblay	J. McLaren, T. Villeneuve, F. Harvey, F. Belleville, P. Harvey, A. Lemieux, F. Tremblay.
Charlevoix, No. 2	Bas St. Paul	D. Tremblay	T. Fortin	S. Boivin	J. Cimon, Ovide Simard, Boniface Cimon, O. Larondre, N. Simard, H. Simard, Vital Tremblay.
Chambly	St. Hubert	J. Yule	J. H. Leau	P. B. Benoit	Jacques Audet, jr. Toussant Sicotte, Antoine Rocheleau, L. St. Germain, Alfred Williams, A. Marcl, Luc Dubuc.
Champlain	Ste. Geneviève	A. J. Martineau	S. Rocheleau	Rob. Trudel	A. Massicotte, G. Gervais, F. X. St. Arnaud, A. R. Lafleche, L. Fugère, Pierre Nauld, Michel Trudel.
Chateauguay	Ormstown	R. Brodie	R. Jack	A. McEachern	S. Legault, Louis Coté Henri Legault, John Elliott, M. Orr, Wil. Woods, G. Elliott.
Chicoutimi	Chicoutimi	D. E. Price	L. Migrer	T. Z. Oloulier	F. Langlais, R. Maltais, Alex. Gagné, R. Bouchard, J. Maltais, Nazaire Boucher, Roger Bailly, fils d'Ambricse.
Compton	Eaton	J. H. Pope	N. M. Fling	N. M. Learnd	H. O. Whitehack, J. T. Davis, Jacob Gilson, R. Lindsay, J. F. Osgood, T. N. Hard, R. Lal.
Deux-Montagnes	St. Benoit	J. Bte. Daoust	W. Morrin	D. Masson	W. McGeock, F. X. Lanthier, J. Rodrigues, Ignace Rodrigues, Moise Labrasse, Robert Waker, J. Bte Clément.

AGRICULTURAL SOCIETIES, LOWER CANADA, 1862. (Continued.)

<i>Sociétés.</i>	<i>Organised at</i>	<i>Presidents.</i>	<i>Vice-Presidents.</i>	<i>Secretary-Treasurers.</i>	<i>Board of Directors.</i>
Dorchester.....	St. Anselme.....	J. Bte. Carrière..	F. Turgeon.....	F. Buteau.....	M. N. Z. Audet, F. Gosselin, Jos. Turgeon, F. Audet, T. Roy, F. Baillargon, Narcisse Gosselin.
Drummond, No. 1.....	Drummondville...	Hon. W. Sheppard..	E. Hemming.....	R. N. Watts.....	V. Cooke, J. Boisvert, W. Robins, Alex. Lespérance, J. Ralph, Patrick McCabe, Thomas Badham.
Drummond, No. 2.....	Durham.....	G. H. S. Browne...	J. Bothwell.....	James Bothwell..	B. Reed, J. Royston, J. Mairs, Wm. Barrill, G. Evans, A. Wilcocks, T. Atkinson.
Gaspé, No. 1.....	Percé.....	T. Savage.....	F. M. Gibaut.....	O. T. Connick...	J. M. Remon, James Lenfesty, M. Furlong, Jas. E. Tuzo, Capt. John Baker, J. Couture, Louis Couture.
Gaspé, No. 2.....	Gaspé Basin.....	.....	.....	.....	Has neglected to report.
Hochelega.....	Montréal.....	H. Brodie.....	F. Beaudry.....	J. Smith.....	D. Lochead, L. Laporte, W. Phillips, J. Lanouette, F. Girard, T. Irvine, F. Charrelier.
Huntingdon.....	Elgin.....	S. H. Shuyler.....	A. Henderson....	P. Macfarlane...	D. Macfarlane, J. White sen, A. Olivier, P. Gardner, A. McGregor, J. McDermid, N. Manning.
Iberville.....	St. Athanase....	Ged. Cartier.....	J. Ouimet.....	L. Hameel.....	E. Goyette, A. Comeau, J. L. Houle, J. Choquet, F. S. Poulin sen... P. Desroches, F. X. Prairie.
Jacques Cartier...	St. Laurent.....	L. Legault.....	W. Poir.....	A. M. LeCavalier..	A. Hislop, O. Desforges, G. N. Valois, B. Lefebvre, Geo. Smith, J. Robillard, J. B. Meloche.
Joliette.....	Industrie.....	L. Lavèque.....	G. Delanaudière..	E. Guilbault....	B. H. Léprohon, J. Demaris, J. Beausoleil, W. Massicotte, C. Guilbault, J. B. Renaud, H. Daly.
Kamouraska.....	St. Anne.....	Rev. Pilotte.....	P. Dessaint.....	E. Dumais.....	O. Martinéau, L. Miller, F. DeGuise, Dr. L. Tétu, J. B. Richard, J. B. Lévêque, H. Pelletier.
Laprairie.....	Laprairie.....	A. Moquin.....	J. Dunn.....	H. Lanctot.....	L. Brossseau, J. Adams, A. Barbeau, T. Rabidoux, F. X. Poupard, J. Beaudin, A. Ste Marie.
L'Assomption...	L'Assomption...	Ho. P. U. Archambault.....	W. Deschamps...	A. Archambault..	P. Archambault, B. Vinette, J. Brien, A. Héneau, L. Jannotte, J. B. Perrault, J. B. Lachapelle, F. Perrault.
Levis.....	St. Henri.....	P. Laguen.....	J. Morrin.....	F. M. Guay jr.,...	L. Coté, M. Cantin, C. Rouleau, A. Carrier, G. Fournier, J. Demers, T. Fraser.
L'Islet.....	St. Jean Port Joli..	A. Dionne.....	G. F. Fournier...	P. G. Verrault...	A. Lavoie, L. Caron, S. Drapeau, L. Bois, A. Mirille, T. Gagnon.
Lotbinière.....	St. Sylvestre.....	P. Stoken.....	E. Montgouery...	J. Park.....	J. Walker, G. Brown, T. Taylor, H. Mackie, J. Lefebvre, J. Work, J. Woodside jr.
Laval.....	St. Martin.....	P. Gravelle.....	F. Kimpton.....	D. Smallwood...	W. Nelson, M. Hotte, J. B. Dagenais, L. Belair, jun. E. Dubreuil, M. Labelle, G. Legris.
Maskinongé.....	Rivière-du-Loup...	J. Fortin.....	J. Carifé.....	G. E. Mayrand...	J. Voyard, G. Lessard, D. Gagnon, F. E. Doucet, Ed. Caron, A. Lesage, P. Bargeron.

AGRICULTURAL SOCIETIES, LOWER CANADA, 1862. (Continued.)

Societies.	Organisat nt	Presidents.	Vice-Presidents.	Secretary-Treasurers.	Board of Directors.
Megantic No. 1.	Inverness	D. McKinnon	W. Mont	D. McGillivray	W. Sowry, S. Slatter, D. Moffat, R. Cox, J. Mooney, Don. D. McKenzie, N. J. McKenzie.
Megantic No. 2.	Leeds	J. Ross	J. Hune	J. Hutchison	W. Fraser, T. Scallon, J. Cochran, J. Olivier, A. Dunn, W. Church, J. McLean.
Montmagny	Montmagny	L. H. Blais	J. O. Beaubien	Major N. Nadeau	L. Fortin, N. Bossé, L. C. Dupuis, G. Blais, P. Blais, P. Lavigne, J. O. Carboneau.
Montmorency	Château-Richer	C. Reaume	J. Guerin	O. Gravel	G. Bolduc, E. Giguère, A. Paré, O. Gagnon, A. Gravel, L. Bélanger, N. Mathieu.
Misquoi	Bedford	J. Hunter	A. M. Blinn	J. B. Abbot	J. A. Hogue, R. Buck, H. D. Moore, P. Cowan, W. C. Baker, P. C. Derrick.
Montcalm	Ste. Julienne	J. Dufresne	J. Melrose	A. H. de Caussin	B. Bertrand, G. Poirer, A. Beaudry, M. Dorval, S. Brault, N. Bordocheau, M. Kelly.
Montréal	Montréal	J. J. Lyman	J. Archbold	J. Thayer	P. Cooper, S. Wall, T. McAmuly, R. Spiggins, J. Davidson, T. Todd, J. Carroll.
Napierville	Napierville	P. A. Lefevre	P. D. Hebert	P. Benoit	W. Dunn, J. G. Lavolette, F. Barbeau fils, C. Lefevre, D. Samoizette, E. Boucher, A. Merrizzi.
Nicolet No. 1.	Bécancour	T. A. Lambert	L. E. Leblanc	J. Jutras	A. Leblanc, A. Brisson, E. Brassard, J. Pratte, A. LaBarre, A. Genest, N. Mouillet.
Nicolet No. 2.	Ste. Monique	J. Barbeau	B. Laplante	G. David	E. Beauchemin fils, L. Beaubien, P. Beauchemin, F. Mauseau, F. Boisclair, J. Trudel, F. Decôteau.
Ottawa No. 1.	Aylmer	R. Kenny	H. Parker	C. Symmes	J. B. Prentiss, C. Wright, J. Cassidy, W. Griney, R. Stewart, R. H. Kloch, J. J. Walker.
Ottawa No. 2.	Thurso	W. Abbot	J. Parker	A. Water	A. McNaughton, J. Larwell, W. Carson, J. McLachlan, Samuel Stevens, W. Dole, G. S. Hughes.
Pontiac	Clarendon	A. Smart	J. Duff	M. Judson	W. McDonnell, W. Clarke, T. Morrelle, A. Wilson, A. Stewart G. Graham, J. Wyman.
Port-Neuf	Capsanté	Hon J. E. Thibaudau	C. Arcaud	F. J. Rinfret	F. Hardy, F. Hamelin, L. Leclerc jr., F. X. Frenette, L. Dussault, R. Bernard, F. X. Larue.
Québec (Cité)	Québec	H. S. Anderson	Ls. Bilodeau	W. Moore	C. St. Michel, H. J. Scott, A. Robertson, J. Ashworth, J. B. Regnaud, J. Dinning, W. Crawford.
Québec (comité)	St. Roch	J. Laurin	Ls. Bilodeau	J. B. Déjage	J. Jobin, P. Pagot, T. May, F. Sansfacon, J. Plamondon, M. Zeullion, H. Moss.
Richelieu					Has neglected to report.
Richmond	Melbourne	W. H. Webb	John Greenshields	John Main	Charles Hall, Noah Lawrence, Thomas Wilson, Edward Scott, George Silver, Silas Baker, Abbott Frye.

AGRICULTURAL SOCIETIES, LOWER CANADA, 1862. (Continued.)

<i>Societies.</i>	<i>Organised at</i>	<i>Presidents.</i>	<i>Vice-Presidents.</i>	<i>Secretary-Treasurers.</i>	<i>Board of Directors.</i>
Rimouski	Rimouski	E. Groudin	Rev. M. Duguay	E. Pouliot	M. Bérubé, C. Barnier, O. Roy, Rev. Ladrrière, P. Ringuet, Rev. M. Nadeau, A. Langevin.
Rouville	St. Césaire	Major Campbell	Dr. Béique	J. R. St. Onge	C. E. Letestu, R. Daignou, E. Poulin, C. Noiseux, F. Robert, O. Crossfield, L. Gobeille.
Sheffield	Waterloo	J. W. Blackwood	J. Atcheson	G. H. Allen	J. R. Clarke, Col. B. Savage, C. Page, Z. Greenwood, A. Sanborn, S. Chantier, H. Macdon.
Sherbrooke	Sherbrooke	W. Felton	H. Beckett	Ch. Brooks	A. Storeus, A. D. Ball, D. H. Wenslow, H. A. Elkins, H. Moe, J. G. Robertson, A. Loomas.
Soulanges	Coteau Landing	D. A. Coutlée	D. McPherson	G. H. Dumesnil	C. Monpéit, J. Sauvé, M. Brennan, Jos. Dumesnil, F. Bériau, H. Hosmer, G. Benoit.
Stanstead	Stanstead	H. G. Pierce	J. Grisam	L. K. Benton	E. F. G. Badwell, B. F. Knight, J. Converse, E. Kilborn, S. Shatloff, F. L. Newton, J. Baldwin.
St. Hyacinthe	St. Hyacinthe	D. E. Morrison	F. X. Morin	Les. Taché	J. B. Michon, A. Chappedelaine, C. Péroquin, L. Chicoine, J. Bourgeois, P. Varry, J. B. Scott.
St. Jean	L'Acadie	I. Bissonnette	E. Booth	L. L. Roy	G. Lavallée, L. Dupont, A. Boissonneau, F. Roy, E. Lord, F. G. Marchand, M. Deneau.
St. Maurice	Yamachiche	L. L. L. Desaulniers	C. Lajoie	F. E. Mitot	S. Lajoie, P. Milot, J. Bellemare, A. Gauthier, A. Dufresne, J. Crête, G. Chainé.
Terrebonne	Terrebonne	A. Payment	M. Moody	Dr. Smallwood	J. Filiatrault, R. Filion, C. Cadet Jr., F. Forget, P. E. Marier, J. Hamilton, A. Miller.
Temiscouata	Isle Verte	J. B. Pouliot	L. A. Bertrand	L. A. Gauvreau	E. Mailloux, A. Diguemin, G. Gagnon, E. Dusette, O. Bélanger, L. Demeul, C. F. Dubé.
Trois-Rivières	Trois-Rivières	J. McDougall	O. Duval	G. Dufresne	O. Goin, H. Lacerte, E. Barnard, E. Aubry, A. Panneton, F. Betty.
Vaudreuil No. 1	Vaudreuil	R. Herwood	F. X. St. Denis	E. Lefavre	J. Bressier, C. Campault, B. Campault, M. St. Denis, A. Legier, C. Daoust, D. Manson.
Vaudreuil No. 2	Rigaud	D. McMillan	A. C. Cholet	E. N. Fournier	A. McLachlan, C. McGreavy, F. E. Cherrier, G. Lancaester, E. Lalonde, Is. Séguin.
Verchères No. 1	Varennes	L. H. Massue	C. Dansereau	J. N. A. Archambault	F. Geoffrin, P. Chicoine, A. Setrault, A. Brodeur, C. Beauchemin, F. Voligny, C. Ghabot.
Verchères No. 2 .....	.....	.....	.....	.....	Has negotiated to report.
Wolfe	Dudswell	Z. Evans	G. Goodenough	A. Lothrop	H. Kolfe, A. W. Hall, S. C. Bishop, J. Westman, J. E. Cote, A. Gavin, F. Dawson.
Yamaska	St-François du Lac	J. Wurtete	J. Duguay	Et. Boucher	J. M. Goté, P. Payan, F. X. Lahnie, M. Fortier, J. Lemaitre, G. Compton, J. B. Barbut.

OUR RAMBLES.



HAVING been deputed by the Hon. L.V. Sicotte, President of the Board of Agriculture, and Chairman of the Agricultural Department of Canada at the Exhibition of all Nations to be held at London in May next, to collect the best specimens of Agricultural productions raised in Lower Canada; we, for this purpose, proceeded to visit during the month of February the counties of Laprairie, Beauharnois, Chateauguay, Huntingdon, Iberville, St. Johns, Chambly and Verchères; and, wherever we went, we found the same general desire evinced, both by individuals and by the agricultural societies, to contribute to the forthcoming exhibition any of the agricultural and other products worthy of notice, and to show at the *World's Fair* the advancement and onward progress of our agriculture during the past 10 years. We have not neglected the occasion of our visit to converse with the principal farmers in each place, and we must confess that we have largely profited by their experience; and we intend to enrich the pages of our *Review* with their practical suggestions, and to devote as much space as we can spare each month for that purpose.

The progress of each county society has been carefully noted down, and we had more than once occasion to suggest what to us seemed better to advance the employment of the government aid for the still further progress of agriculture. In some counties we have shown the advantages offered by the Board of Agriculture relating to the importation of stock of all kinds chosen from those to be exhibited at the forthcoming exhibition at London; these advantages have not been generally understood by the circular addressed by the worthy President to the different county societies; it was not generally understood that the Board was ready to advance to the different societies the sum required for the purchase of stock, upon the condition

that it should be paid back to the Board in three annual and equal payments.

Thus, any society wishing to import any animal, say of the value of \$600 for instance, which might be delivered to the society in July next, \$200 would be retained off the government allowance for this year, and \$200 retained also off that of 1863 and 1864, and then the society would be discharged from the debt incurred to the Board.

And it is a fact well established in respect to entire horses, that the first instalment would be paid by the service of mares during the first year, and that, properly speaking, the society would only make one actual payment. The subsequent annual payments would be met by the amount received for the service of mares at a very moderate rate; and this is a matter of fact asserted by all those societies who have made a trial, and we will instance the county of Beauharnois society. Their entire horse "*Clyde*," imported lately by that society, served 90 mares the 1st year, furnishing the sum of \$360; and it is more than probable that during the present year the number will amount to 100, so that the 3rd year the animal will have earned its cost, which was \$1,000. We have endeavoured to impress these facts on the directors of county societies, and everywhere it was received with gladness, and a moment of reflection will show that these animals purchased through the Board of Agriculture will cost much less than those purchased by any other party. For, suppose for one moment, that a county agricultural society wishes to purchase a superior bred stallion, the first thing is to find out a responsible agent, who must visit different places for the purpose of obtaining an animal suited to the description forwarded to him. And then, once purchased, which may occupy some days, it must be forwarded by rail to the nearest port of embarkation, where it may wait some time for one of the Ocean Steamships to Montreal, upon what must be constructed a temporary stable; constructed so as to prevent the rolling of the vessel injuring in any way the animal during the voyage. The attendance of a good groom is also necessary, more especially at open sea, and the greatest care is wanted not to sacrifice the life of the animal. It was from this that the Hochelaga county society lost two entire horses of the aggregate value of \$2,800.

The Board of Agriculture by its gene-

rous offer saves a great part of the expense, for it is a well-known fact that, in England, when a foreigner wishes to purchase a superior animal, the proprietor asks a high price, especially when it is for exportation. Now at the Great Exhibition in London there will no doubt be a large gathering, and the proprietor would rather sacrifice something in the price than take back the animal to his farm, for there will doubtless be a large number of animals of all sorts for sale after the closing of the show. All these would be on the same ground, in a small comparative space, all sorts of races and breeds, and it will be easy to judge of their merits and the one best suited for the purpose without the expense of agents, and the running, may be for days, over England, before we could meet an animal to please. One thing is quite certain that the agent of the Board of Agriculture will be furnished with a pedigree of all the animals there exhibited. Thus the choice will be from among the many, and there will be the greatest security against imposition either as regards pedigree or breed.

From London to Liverpool, which is the port of embarkation, the trouble would be nothing compared with the difficulties to be surmounted when a horse is purchased in Normandy, and we are led to believe that the greatest number imported will be of the Percheron breed.

The French government are now actively employed in sending over the Percheron breed, and we are led to believe that for a moderate sum we can procure a fine specimen of a draught horse as strong as the *Clyde*. The Percheron trots with ease 8 miles an hour harnessed to a load; the omnibuses at Paris are all drawn by this breed of horses, and the French Artillery are mounted on the same breed.

We have had occasion to converse with the proprietors of the Montreal Ocean Steamships on the subject of transport of animals, and these gentlemen have assured us that they would do all in their power to insure the object; they would be disposed to put the whole of the forepart of the vessel at the disposition of the Board of Agriculture, and they would for that purpose decline to take third class passengers, so as to give a large space for the importation of stock; it is certain that a number of animals may be brought here for about half the usual price.

We have already advocated the importa-

tion of choice animals for crossing our own breeds, and we have witnessed its success during our late "*rambles*."

In many counties the societies have only distributed the funds among the local farmers, and this has been the case year after year, and we have often raised our voice against this sort of family compact. We need not here repeat our arguments, for wherever we have suggested the employment of the funds for any other purpose we have generally met with the entire approbation of the enlightened farmer; and we have often met conscientious and intelligent men whose only aim is the advancement of agriculture. But these men are often bound hand and foot in their actions, being opposed by a majority who have no reason, and are only guided by their own narrow notions and the following the old customs; happily this majority is day by day losing their strength and influence, and we predict a triumph at no distant day of progressive and improved agriculture. The small minority now stand up manfully for its legitimate rights.

The Board of Agriculture has by its generous offer tendered to put a termination to the apathy and indecision hitherto evinced. Many of the county societies are aware of the good that has already resulted by the annual exhibitions and prizes offered for competition, but feel that something more is required and necessary for keeping up a proper and progressive movement, and feel doubtful what new plan to adopt: some of those have seized with vigour the offer now made by the Board to obtain the best and choicest of animals and produce at a moderate rate.

In some places the societies have not only voted sums from their funds, but private individuals have not neglected the opportunity to obtain male animals of all kinds. These persons have, through the medium of the local society, given a sufficient guarantee of the cost, and the society intend importing them in their own name through the Board of Agriculture; in this manner these persons have 3 years to meet the demand of the purchase and costs of importation, and surely these facilities must give great advantage to the farmer and to the county at large.

Such are some general remarks which we gleaned in our recent *rambles*; and these suggestions we have given both to the individuals we have visited, and also to the directors of those agricultural societies that

we have consulted; the sympathy they have shown has given us a great encouragement in the arduous duties we have undertaken, but we know well their sympathy is not all: we want their co-operation, and they may rest assured that in us they will always find a champion of their wants and requirements.

VISIT TO THE FARM OF Mr. ADOLPHE
STE. MARIE.

In our preceding numbers we have given an account of the plan of culture adopted in the neighbourhood of Montreal, Quebec, and Rivière du Loup. We have now visited the county of Laprairie, 9 miles from Montreal, and visited the farm of Mr. Ste. Marie, whose constant attention has been directed towards the amelioration of the actual system of agriculture. Guided by the knowledge derived from the perusal of agricultural journals, the originality displayed by Mr. Ste. Marie is deserving of all praise. For he has succeeded in showing the best results of a good system of culture, and after having obtained a small farm which was nearly worn out, he succeeded in acquiring a double quantity of land, in raising three times the amount per arpent, and paying off at the same time the price of purchase by the profits obtained from the improved system he has adopted. At the present time he has in his possession 200 arpents, which he has divided into 100 arpents of meadow, 40 arpents of pasture, 10 arpents of green crops, and 50 arpents of grain crops; this rotation has for its base the cultivation of hay, and within a circle of 18 miles from Montreal this production will always bring good profits. We have already shown, in our previous numbers, what ought to influence us, where the price of the labour is high, and the facility afforded to send on to our large cities products, the bulk of which is difficult of transport, but which establishes a species of monopoly, in favour of farmers who live in the vicinity of the large cities. Grain of all kinds can be sent from a distance to market at a price comparatively low, while hay and straw by reason of their bulk and the difficulties of carting, during our long winters and in the bad roads of autumn and spring, cannot be sent to market with the same facility, by those persons who live at any distance, while those persons in the proximity can send it to market with ease. It would be absurd for them to endeavour to raise grain in competition with farmers at a distance who are obliged to

raise this species of produce owing to the great distance from market. Beyond this it is shown by experience that the production of grain crops increases in quantity in a ratio as we put more of our land under hay, especially when the whole of this fodder is converted into manure: for thus a farm, half of which is in hay and the other half in grain, will give twice the amount of seed than when the same farm has only one fourth in meadow and the other three fourths in grain, provided that the whole of the fodder is converted on the farm into manure and applied to it. It is an axiom in agriculture which ought to be known, that the amount of the products is according to the amount manured and not to the amount sown.

In the case where the hay is sold, instead of being consumed on the farm, the influence thereof is not so much felt, but as long as the extent of the hay crop is more than half the extent of the farm we are led to believe that the production of grain will be still in proportion to the amount of fodder, for it is well known that meadow is in a great measure one of those ameliorating conditions of the land, and that the remains of the hay crop is in itself equal to a spread of manure. Here again the production of grain crops will follow in a like proportion the extent of meadow which furnishes decomposed vegetable matter.

Mr. Ste. Marie has with this view put his farm under the following rotation:—

1st year green crops.	{	Potatoes,.....	6 arpents.
		Indian corn,....	2 "
		Mangel wurzel,.	1½ "
		Carrots,	½ "

Extent of green crops,.....	10 arpents.
2nd year, Barley with Timothy and Clover,.....	10 "
3rd year, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th years, meadow.....	100 "
14th year, Pease,.....	10 "
15th year, Barley,.....	10 "
16th year, Oats,.....	10 "

Total extent sown,..... 160 arpents.

Thus the whole extent under culture is 160 arpents, the other 40 arpents not sown is of an inferior quality, being composed of sand principally, and very uneven, which Mr. Ste. Marie proposes to level as soon as opportunity offers. Until then he has adopted the following system:

1st year, Peas, following pasture.
2nd year, Oats, with Timothy and Clover.
3rd, 4th, 5th, and 6th year, pasture.

This plan is very good, and is to be recommended until he undertakes to adopt the same system as the rest of his farm. We will now pass on to consider each year's rotation, commencing with the most important, viz. green crops, which are the base of all good system.

1st. *Green crops.*—The preparation of the soil is the same for all kinds of green crops; a ploughing of 7 inches deep in the fall, exposed to the action of frost, forming a deep furrow to receive the root crops; this ploughing is to be followed immediately by deepening the ditches and drains so as to well drain the land from the autumnal rain, for when it lies long upon the land it retards considerably the usual time of sowing, and neutralizes in a great measure the effects of the frost. In the spring the ploughing is well harrowed, in such a manner as to pulverize the earth deeply; it is then cross-ploughed and again harrowed and rolled, so as completely to affect the soil to the depth of 7 inches. Mr. Ste. Marie then forms his trenches, or drills, by means of the common plough, and puts into them manure, 25 loads to the arpent, and upon the manure is placed the seed potatoes, covered over by the plough. But for Indian corn it is sown after the drill or trench is filled up; we think the same plan might be followed with advantage as in the planting of the potatoes; we have witnessed this plan followed in Switzerland with success. Mangel wurzel and carrots are sown as the Indian corn, by means of a small sower made by Mr. Ste. Marie, and which has given him great satisfaction in its use.

The first weeding, and also the second, is with the plough and this is followed by hand weeding between the plants; the yield of potatoes generally has been 150 minots to the arpent, exclusive of those which have suffered from rot; the Indian corn has yielded an average of 40 minots per arpent; mangel wurzel and carrots have given about 800 minots per arpent; all those root crops with the exception of potatoes are consumed by the cattle on the farm.

2nd. *Grain sown in spring upon autumn ploughing.*—Barley is the best grain for the second year of rotation; it is mixed with 2 lbs. of clover seed and $\frac{1}{2}$ minot timothy seed per arpent; the yield is about 35 minots average years per arpent.

3rd. *Meadow.*—The first year the yield is 250 bundles the arpent, which increases a little during the first four years, but after that somewhat decreases; during this time Mr. Ste. Marie gives his meadow a good harrowing, so as to destroy the moss and other weeds which are found on meadows occasionally. To give a greater vigour to this product manure is spread over it, and during the 10 years the average yield has been 250 bundles the arpent.

14th. *Pease.*—These are sown after meadow, yielding about 20 minots per arpent, and prepare the soil for barley which follows.

15th. *Barley.*—The yield of barley is about the same after pease as after mangel wurzel which tends to establish the fact, that the 10 years of hay crop has taken nothing from the soil in point of its fertility.

16th. *Oats.*—This grain crop finishes the rotation on account of the little nutriment required from the soil; its yield after barley is generally good.

Such is the system of rotation followed by Mr. Ste. Marie, but he has beyond this a special object of culture, which it would seem of consequence to acquire having up to the present time but few imitators.

It is the culture of onions upon a large scale. Mr. Ste. Marie at first was afraid that it would be to his disadvantage to make public his method of culture, but after having taken into consideration the amount of onions imported from the United States, he consented to place before the public the secret of his experience, and when our readers have adopted the method we propose to lay before them, the amount consumed will exceed the production, and the consequence will be that it will not in any way diminish the market price.

Raising of onions.—And, here, as with all such roots it is necessary before any thing else, that the soil should be deeply ploughed, and free from weeds, so as to secure a good yield; the soil should also be well drained. Potatoes which have been planted through two successive years and which have been well manured, are the best preparation for the onion. Directly after the last harvest of potatoes, the soil is well harrowed, so as to level it perfectly from the potato ridges, and manured with 60 loads to the arpent; in fact the more manure that is used, the better will be the yield. This manure should be allowed to stand in a heap from the spring, and to

ferment so as to destroy all vestiges of weeds and other matter, for much will depend upon the cleanliness of the soil.

After a first deep soil ploughing (at least 7 inches deep) Mr. Ste. Marie harrows and rolls it several times so as to pulverize the soil completely.

A second ploughing of this, already well-pulverized soil, exposes new matter to the pulverizing effects of the frost. This work is generally finished early in the autumn, and so drained that the rain cannot lodge upon the land thus prepared. In the spring, as early as March sometimes, the land is found well prepared and divided into 10 feet ridges. A line is used, the length of each ridge, and with a three-toothed rake, having a distance of 13 inches apart, three drills are thus opened up 13 inches apart, by following the line quite straight, so that by this method the whole ridge is opened into drills; following this is the sower to which we have already alluded, and which distributes the grain, 4 lbs. to the arpent; a woman follows the sower and covers up the drill with a hand-rake. In one day Mr. Ste. Marie sows two arpents, but this of course is not all the work required; the weeding is done by means of the hoe; the first hoeing is done when the plants are 2 inches high and the distance between each plant is made 4 inches, the 2nd and 3rd weeding is done three weeks one after the other, the whole costs about \$5 per arpent, or 20 days of boys about 14 years old. It is well to employ 6 or 8 at a time so as to do the weeding at the proper time.

They are taken up at the commencement of September, and allowed to dry on the ground for 4 or 5 days; the tops are in then cut off, they are housed either the attic or on the barn floor to complete the drying; for this purpose the place must be dry and well ventilated; in three weeks they are put into barrels for the market; the average yield is 300 bushels to the arpent, and it is not difficult to increase this yield to double.

The price of onions is \$2 for a three-bushel barrel, giving \$200 per arpent; besides this the small onions which are taken up during the weeding are sent to market in their green state and meet a ready sale.

It is readily seen that the culture of the onions are very profitable and merits an especial attention; the preparation of the soil is somewhat difficult so that Mr. Ste.

Marie sows over again the same spot for three consecutive years, manuring it every two years with 60 loads to the arpent, but it is not possible to continue the cultivation for a longer period, on account of the small worms which destroy the young plant. It is also well to follow for two years the onions by planting potatoes, after which time the onions can be again planted with success upon the same spot.

Mr. Ste. Marie owing to the amount of capital required for the purchase of part of his farm, has not been able to do much to improve his stock; he is now occupied with the best means of raising mangolds before obtaining a choice breed of animals, and in this we believe he does well, for it is a mistaken notion to think that one can improve his stock unless the amount of fodder does not furnish a rich and appropriate food, and this sufficient in quantity for the winter. These root crops ought to be the base of all animal nourishment, without which the best breeds of animals will degenerate and lose those special qualities which they at first possessed, for all food will be scanty which is not composed of root crops. Already the cross-breeds of Mr. Ste. Marie are progressing under the present system of cultivation which he has adopted, and we believe he wishes to acquire a still better kind, as he increases the amount and kind of food necessary for them.

We shall now terminate our account of Mr. Ste. Marie. While we must bear testimony to his success, we must also thank him for the improvements he has shown to the farmers in the county of Laprairie generally. We have already stated that Mr. Ste. Marie is a new example of those found in each parish and in each county, whose intelligence, aided by the reading and study of agricultural works, has formed the base of a system of agriculture, peculiarly fitted to the locality, and which is not far from perfection. This movement does them honor; and at the same time it is the means of increasing the productions, showing to others the necessity of imitation. We hope that their success will rouse an emulation among others, and that all will tend to attain the perfection of agriculture, the sure source of our prosperity.

If we were permitted to make a suggestion to Mr. Ste. Marie, it would be, that he should finish his rotation with the same seed, but with a different succession; thus

after meadow, we would advise oats followed by pease and then barley: oats grow well after meadow, pease prevents the growth of weeds. which oats and barley does not prevent: thus barley will be sown on soil free from weeds after pease, which would not be the case otherwise.

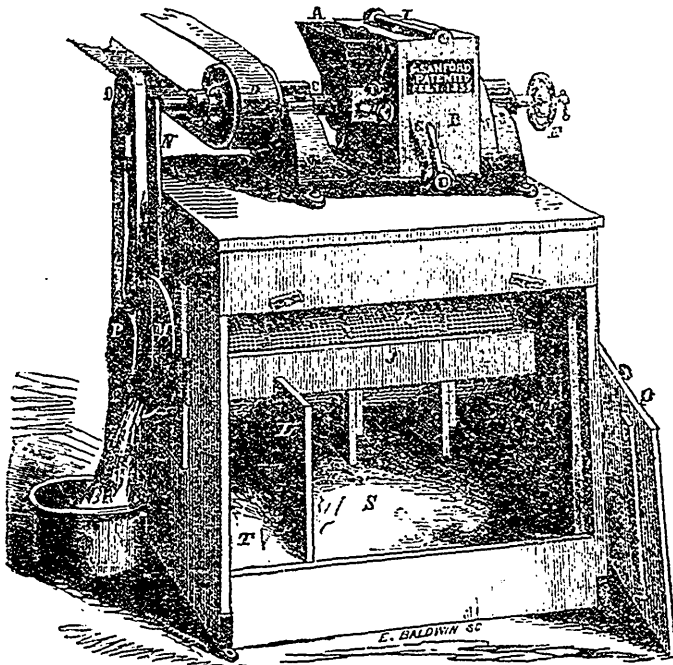
We would also recommend upon the meadow the employment of *ley ashes* which are sold here for 12 cents a load, while at Quebec farmers pay 50 cents a load: upon the marly soil of Laprairie, *ley ashes*, we think, are peculiarly recommended.

Generally we would also recommend after pease which follows pasture a sowing of buckwheat to be covered green.

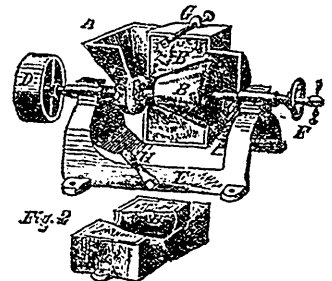
We have remarked in the barn yard of Mr. Ste. Marie hay given to the cattle spread upon the snow; we have no hesitation in saying that the same quantity put into the manger would be consumed with a greater avidity and with less loss. In our next number we shall continue our account of those farms we have visited.

AGRICULTURAL IMPLEMENTS.

We give this day a description of the excelsior plantation Corn Mill of French Burrstone, manufactured by Bennet brothers 42 and 44 Greene street, N.Y., which has given to this day general satisfaction—We received from these gentlemen the following note: This unique and valuable invention, has, during, the past year,



Bennet & Brothers' Mill with Bolt, New York.



earned a very high reputation. It is in use on the plantations of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas. It has been introduced into Mexico, South America, Australia, Spain, and the Islands of Cuba and Puerto Rico.

They are becoming widely known in California, being extensively used by owners of large estates. The *advantages* which this Mill possesses, for plantation purposes, ought to commend it to every planter; it will last a life-time; is very compact; perfectly simple; may be kept in order by a novice; heats the meal less than the Flat Stone or Iron Mill, and can be run by Horse, Water or Steam Power.

Corn Meal.—Our Small Mill, running at 700 revolutions per minute, will grind from 6 to 8 bushels Corn Meal the hour, and with the Gin or Sweep Power, at 350 revolutions, from 3 to 4 bushels the hour.

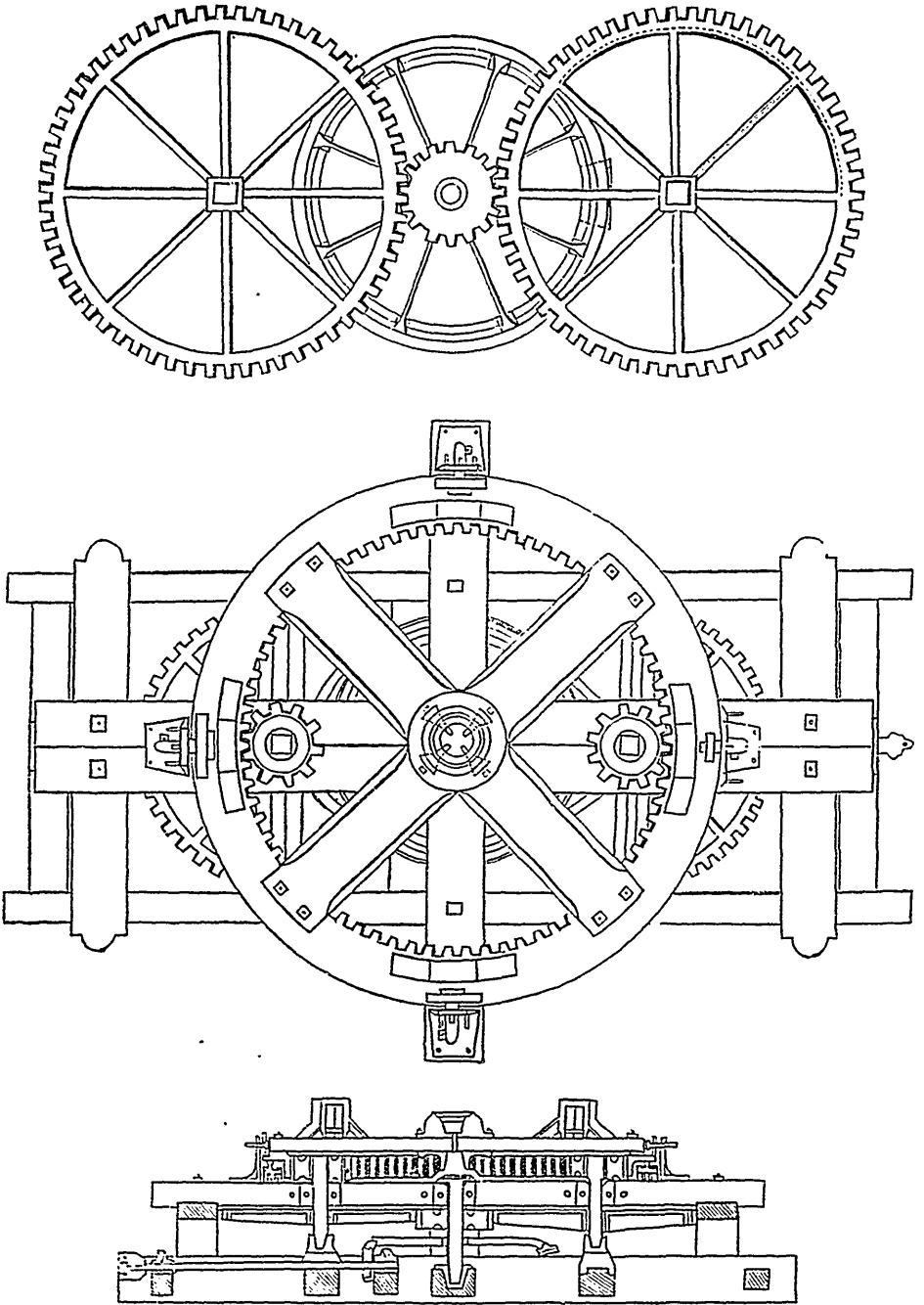
Two horses with Sanford's Anti-friction Gin Power, driving the Excelsior Mill, will grind from 4 to 6 bushels meal the hour.

Feed.—A. Mill that will grind 6 bushels Corn Meal the hour, will grind from 12 to 15 of Feed, be it of Corn, Corn and Oats, or Corn, Oats and Rye. As a Feed Mill we challenge comparison with any in use, both as to *quantity* and *quality* of the work.

The above cuts, and the following description, are thought to be all that is necessary by

way of explanation and illustration, to enable any one to form a correct idea of our "Excelsior Mill."

A, is the hopper in which the material to be ground is placed. *B*, a Conical French Burr Stone, immovably secured upon the shaft—see



the open Mill above. *BB*, the concave stones in two solid pieces, encased in iron, are placed over the cone, fitting it perfectly; these are

the grinding or milling surfaces. *F*, the adjusting screw by which the grinding cone is forced towards the shell to make the mill grind

finer or coarser as may be desired. *D*, a pulley upon the end of the shaft to which the grinding cone *B*, is attached, and by which it is operated. *K*, is a bolt into which the ground material is passed to separate the ground product into the various grades required—the middlings falling into the bin *T*, and the fine flour into the bin *S*, while the bran is passed out of the end of the bolt into a receptacle placed to receive it. The bolt is stationary, but brushes are operated on the inside, to drive the flour through, by a belt passed over the pulley *O* on the main shaft, and over the pulley *P* on the bolt shaft.

We claim no superiority for this bolt over the ordinary one in use in this country; it is the English plan of bolting flour, and as it is *very compact* is better adapted to Farmers and Planter's use than the American bolt; the flour made by it is of the best quality. It is made of wire cloth. We can give no opinion as to its durability, when used constantly for *milling purposes*.

The ordinary bolt we can furnish at short notice, when parties prefer it.

The American Institute.—At the late Fair, awarded the *Large Silver Medal* to our Mill; and the judges—one a miller of twenty years experience with Flat Stone Mills, and the other, one of our largest flour merchants, pronounced the "Excelsior" the best Mill on exhibition.

Middlings.—We would call the attention of persons interested in large milling establishments, to the advantages this Mill possesses over the Flat Stone, for grinding middlings.

Offal.—Two of our "Excelsiors" are running in one of the large mills at Richmond, V., grinding offal.

Quartz.—Persons wishing Mills for grinding quartz will find it to their interest to examine this before purchasing. Iron Mills are not at all adapted to grinding this hard substance, as they will not last over 48 hours: and yet hundreds have been sold for this purpose—the purchasers finding, when too late, that they had bought a worthless article.

The "New Quarry French Burr Stone" which we use for our Quartz Mill, is the hardest substance yet discovered, and the only thing that will last in grinding hard quartz! We are sending many to California, and have never heard the first complaint of their not working well. Persons who wish to see them operate, can do so, by calling on the undersigned. They require less power than other Mills, in fact any good horse power, with two horses, will drive them to advantage.

Our Mill is also considered superior to all others for grinding *Spices, Coffee, Plaster of Paris, Whiting, Soap Stone, Saleratus, Cream of Tartar, Charcoal, etc., etc.*

Every Mill is tried, and numbered before it is sent away; a registrar is kept of the quantity done by each, and they are all *guaranteed* to give satisfaction.

The No. 1 Plantation and Farm Mill is 39 inches long, 18 wide, and 18 high, weighs 300 lbs. The box containing the bolt is three feet square.

Persons ordering Mills should state the kind

of work they wish them to perform, and if more than one kind, *which will be the principal grain ground*. It is also very important that we should know the kind of power to be employed in driving them, that we may send a Mill perfectly adapted to the power and work.

We give also two engravings representing Mr. James Stewart's Horse-Power, from Hamilton, Canada-West.

CALENDAR OF OPERATIONS FOR APRIL.

[A glance over a table like the following will generally call to mind some piece of work that would otherwise be forgotten or neglected.]

FARMS.—Sunshine and the south wind struggle with the frosts and gales of Winter, and Spring asserts this month her right to rule. The thousand trickling rills, starting under the snow banks and gathering fresh strength and many drops from every softening sod, make hill-side and meadow musical with their liquid voices, giving man notice that water and frost have quit their hold upon the soil, and calling him to his labours. On warm well drained land work cannot commence too soon after the frost and water are fairly out of the soil, but heavy soil is often injured by working while it is wet.

Buildings.—Make provision for the increase of the herd and flock, and attend to inside repairs, painting, etc. Delay outside painting until next month. Heavy rains accompanied by wind will injure a coat of fresh paint.

Cattle.—Some succulent food is very important to the health of all kinds of stock. Feed a few roots, mangels or rutabagas daily. Separate cows near calving from the others, giving them wide roomy stalls or boxes. Keep watch to render assistance if necessary. Working oxen must be well fed and not allowed to overwork at first.

Cellars.—Clean out decayed vegetables, superfluous sand, or lumber. Whitewash with a simple lime wash, to make them lighter, sweeter, and more healthy. Keep barrels, tubs, etc., where they will not dry or decay.

Clover.—May be sowed at any time during the month—best when the ground is frost-cracked on a still morning, or else upon new fallen snow, as the seed may then be seen and it can be more easily sowed.

Drains.—Should be examined as soon as the frost is out of the ground to see that there are no obstructions. Wet spots in drained land indicate stoppages in drains, which can seldom be repaired before the season is dryer. A perfect system of surface drains is essential, at least where underdrains are not laid, and it is more important to have them clear now than at any other season. If possible get in some new drains where needed; it will make the land 3 to 6 weeks earlier.

Farm Accounts.—No work done on the farm pays better than that done in planning and laying out the farm for the future, and in keeping full accounts.

Fences.—Re-set posts and walls heaved by the frost; and mend fences before your neighbours turn out their cattle; but do not think of turning your own stock out to grass for two

months yet. Happy is he who has a good fence, but happier he who can do away with one.

Grain—Examine that stored in bins. Keep from dampness, mold, insects, and rats and mice.

Grass Lands—Pull out bushes and briars by the roots, remove stones, and roll heaved land as soon as the ground will bear the teams. Top dress before rolling with ashes, Chili salt-petre or guano, where desirable.

Hired Men—Lose no time in hiring good men for the summer's work; the opinion prevails that labour will be scarce and wages high, but we doubt it. Don't have a shiftless, lazy, or unprincipled man on the farm at any price. Where several hands are employed, give each his own work, every team its own driver, and let the most skilful be employed in his appropriate department.

Horses—Groom thoroughly; feed carrots (4 qts. a day) to make them shed their coats well and get them in good condition for spring work. Be particularly careful to guard against colds taken by exposure, when unblanketed, and against galls and sores.

Ice-Houses should be closed up, the ice well covered with straw, ventilation provided in the top of the house. As poor ice is better than none it may not be too late to secure some, if still needed to fill up.

Manure—Manure-making may now progress rapidly. The compost heaps will need working over, manure for the field carted out, and all kinds of litter and scrapings of yards, ditches, sinks, hen-houses, etc., may be composted with muck or earth. Barn-yard leachings, urine and castor pomace quicken inert compost heaps.

Pasture lands may receive the same treatment as grass lands, in kind if not in degree, and on old pastures bonedust, superphosphate, or leached or unleached ashes may be applied with good effect.

Plowing is work never to be done in a hurry or on heavy land when the water is not out of it, and never to be slighted. Manure should never be buried deep at this season, unless the land is to be plowed and manured a second time. Deepening the soil by plowing is best effected in the autumn, but may be done in the spring in connection with subsequent surface manuring.

Potatoes—Early planting is advisable, and the last of the month is not too early for some localities. It is much pleasanter to sell potatoes for \$1.50 per bushel than 50 cents or less.

Poultry—Give free range in the orchards and fields, feeding grain with corn and cabbages. They will then not eat buds, but find multitudes of insects. Set hens in places where they may be conveniently taken care of and out of the reach of rats.

Seeds—Secure a supply early, and test samples in pots or boxes of earth before sowing or purchasing largely.

Sheep—A successful shepherd is ever watchful, tender, and careful.

Swine—Keep a little charcoal and ashes in the corner of the sty, and a handful of flour of sulphur in the swill is a good thing at this

season; feed raw roots to breeding sows, but not in quantities enough to produce scouring, and give besides a nutritious diet.

Tools, etc.—We scarcely need repeat the injunction, to look well to tools, harness and wheel vehicles of all kinds, and have everything ready for use.

ORCHARD and NURSERY.—Begin work as soon as the ground is open, protecting trees from freezing after they are removed from the ground. Whoever sets out trees should not bring his trees from the nursery before his ground is ready to receive them, and nursery-men always favour their own interests when they aid their customers, even if it seems to be to their immediate disadvantage. Remove crippled or decayed trees in young orchards. On every farm new places can be found for choice fruit trees. A few dollars in trees will be a paying investment in a brief time.

Apple Trees.—Scrape off all moss and bark lice, and wash with lye. Leave pruning of large limbs until summer, but take off suckers and dead wood. Replace poor sorts by grafting with choice varieties. Graft young stocks near the roots, which may be done in the house.

Cions—Cut early in the month, if not already done. Keep covered in sand until wanted for use.

Drainage greatly improves land for fruit growing, and in the nursery this is often the only time to drain conveniently. Use rather large tile.

Evergreen Trees—Leave transplanting until May, except perhaps Norway Spruce and Arbor Vites, which can be removed with balls of earth adhering.

Grafting—Begin with stone fruits before the buds swell but after the sap starts; cut grafts and insert as soon as possible. Leave apples and pears until next month.

Insects—The parent of the canker worm ascends the trunks of trees during warm days this month. Many may be destroyed by surrounding the trunks with paper covered with tar mixed with oil enough to keep it soft, and often renewed. Remove scale from the trunks and main limbs, and look for caterpillar eggs near the ends of twigs.

Manure—Apply lime or ashes worked in, in a circle around the trunk as far as the shade falls at mid-day, also top-dress the soil with compost or dung.

Pear Trees—Let there be plenty of choice standards which are so valuable for both fruit and shade around the dwelling. A few dwarfs may occupy a place in the garden. Procure seedling stocks early.

Pruning—Pear and other fruit trees, except apples, may be pruned this month. Prune apple trees with the *knife only*; prune grape vines now, or wait till May.

Stone Fruits—Cherries, Peaches, Plums, etc. Let the homestead be well supplied; good fruit makes any place attractive and adds value.

Seeds of fruit or forest trees kept over winter should be planted as soon as the ground is mellow and warm. Sow evergreen seeds and those of mountain ash on the north side of an open fence or otherwise in half shade.

Transplanting—Preserve the roots uninjured as much as possible; pare smoothly the ends of those broken. Re-set them as soon as may be after taking up; straighten out the small roots; set at the depth of natural growth in good mold, above soil enriched with compost of leaves or muck, ashes, and a small part stable manure.

KITCHEN AND FRUIT GARDEN.—Nothing can be done in the open ground until the soil is dry and mellow. Then get out fine manure and spread and spade it in with a spading fork. Now-a-days nobody should use a spade except for digging poles or such like work. As soon as the ground is fairly open, work must commence in earnest. The liability to be obliged to replant seeds killed by cold or wet weather, should discourage no one from committing the seeds early to the soil.

Artichokes—Seldom cultivated in this country. Fork in a dressing of manure, being careful not to injure the crowns. Salt and wood ashes are useful. Make new beds.

Asparagus—As soon as danger from frost is past, fork in the manure spread over it last fall, and give a liberal dressing of salt. Make new beds, using 1 or 2-year old plants, which are much better than old roots.

Cabbage and Cauliflower—Sow early in hot-beds, or boxes. Give constant heat and little air at first, afterwards expose much, to harden for transplanting.

Carrots—Sow in open ground, well manured.

Cold Frames—Prepare the plants for removal by continued exposure as the weather grows warmer, but protect from frost. Cabbage, lettuce, celery, etc., may be sowed in the cold frames to advantage at any time after the weather becomes settled.

Cucumbers—Start on bits of sod, and put a few seeds among the earliest lettuce and radish plants in the hot-bed, so that when they are pulled, cucumbers may have the soil and finally overrun the frame.

Draining will benefit any garden where water will stand in post holes 6 hours after heavy rains.

Fruit Trees—Dwarf pears are the only fruit trees we advise to plant in vegetable gardens. These will grow well, but are apt to be troubled by insects, hence prune and wash such thoroughly.

Grapes—Uncover vines when the weather is settled, and there is no danger from frost. Fork manure into borders, the earlier the better after they are dry.

Hot-beds for family gardens are best made from the middle to last of the month. Have a good bottom heat and then give abundant air.

Kohl Rabi—Sow with, and treat like cabbage and cauliflower.

Lettuce—Sow early in hot-beds and cold-frames; thin, or prick out to four inches or more apart, according to variety, and stir the soil about them to induce heading.

Manure for the garden should be fine and rich compost. Nothing comes amiss if it be only well rotted. A free use of muck, sods or other vegetable mold is very desirable. Liquid manure, made by using the urine from the cattle stalls or the leachings from the dung

heap very much diluted, and judiciously applied at evening, will astonishingly increase the products of a garden.

Onions—Sow black seed early when the ground is warm, not before. Top onions, or potato onions, for early use may be set in hot-beds, cold-frames, or in the open ground—the earlier the better. Black seed sowed in September affords little bulbs for this purpose much cheaper than top onions which are generally used.

Peas—Sow Daniel O'Rourke and Champion of England when the ground is warm, scalding the seed.

Peppers—Sow in hot-bed where lettuce is pulled.

Radishes—Sow in hot-beds devoted exclusively to them, and keep the tops as cool as possible.

Rhubarb—Transplant as soon as the ground is prepared three feet each way.

Sea Kale—Force early with hot manure, covering the crowns with pots or boxes.

Small Fruits—Currants and Gooseberries, prune and set cuttings, if not done in September. Raspberries, do not lift or tie to stakes before settled weather.

Strawberries—Rake off the beds, fork in fine compost with unleached ashes.

Spinach—Uncover protected beds, loosen the soil, water with liquid manure; sow new beds in warm rich soil.

Turnips—Sow a few as directed for radishes, and in the open ground.

FLOWER GARDEN AND LAWN.—Wait until the ground is settled warm before exposing tender plants, by removing their winter protection, and before sowing seed. Many of the perennial flowering plants may be divided and re-set, by which an earlier and more perfect bloom will be obtained. Among these are the pæony, dicentra, chrysanthemum, sweet william, hollyhock, bee-larkspur, phlox, etc.

Flowering shrubs, especially the early blooming sorts, may also be transplanted as soon as the severity of winter is past and there is no danger of the ground freezing up again. The disturbance of their rootlets, and the openness of the soil about newly planted trees, or shrubs, render them susceptible to injury from hard freezing.

Cuttings of hardy shrubs, etc., such as altheas, spiræas, weigelias, forsythias, loniceras, and the like, may be taken off early in the month before the buds swell. Keep in boxes of earth or sand in the cellar until planting.

Bulb beds which had a coating of manure, leaves, or straw given them for a winter protection, may be partially or wholly uncovered toward the latter part of the month; whatever covering they have during March should be light and strawy.

Pruning of roses and other flowering shrubs and climbing plants may be done at once. Each plant should be cut back with reference to its flowering habit. By strongly heading back those shrubs which only yield flowers upon the terminal branches or on the old wood, as the magnolia, spiræa, etc., the bloom is nearly destroyed. Roses, especially remon-tants (or "semi-occasional" bloomers) may be

cut back severely, and a finer autumn bloom is the result.

Box Edgings—May be re-set as soon as the soil is in a condition to work. Spread each plant out somewhat fan-shaped, clip off the tops even, and prune the root very close, setting in trench by a line, in sand to secure quick rooting, and pack the earth about the plants with a mallet or pounder.

Grass borders, and turfing generally, may be laid or repaired very early in the season better than later. Let the soil below be mellow, and pack seeds so closely and firmly that there shall be no crevices.

Manure may be purchased at this season rather more favourably, considering everything, than at any other time. Manure evenly applied upon the land, whether leached or unleached ashes, nitrates, guano, or ammoniacal water, will each and all produce good results, and the present is the best time to manure shrubby and ornamental trees of all kinds for which coarser manures may be used.

Hot-Beds made for starting cuttings and for sowing seeds are indispensable on a large place. Green cuttings, or those of soft wooded plants, need considerable bottom heat, and to be kept cool at top until they strike root. Avoid excess of moisture, and give good ventilation, gradually hardening them until they are planted out.

GREEN AND HOT-HOUSES.—The green-houses and conservatories should now be very attractive, although some of the more showy plants will have gone out of bloom. Everything should be kept neat, with no rubbish, plant trimmings, dead leaves, moss-covered pots or boxes, left upon the floor or shelves, or dust suffered to collect upon the leaves. The rooms should be aired frequently when the weather is suitable, avoiding a chilling draft directly upon the plants.

Heat must be regulated according to the object in view. If the house is merely a receptacle of plants designed to be kept from the frost, and which are to bloom in the open borders, then a moderate fire heat, with the thermometer from 40° to 45°, is sufficient. With a collection intended for present flowering, or for inducing a rapid growth to use when the out-door planting season arrives, a summer temperature of 65° to 75° is needed; and for orchards and other tropical plants, as also for propagating purposes, the houses or rooms may have a temperature of 90° in the sunshine, which must be allowed to fall off naturally at night.

Acacias, heaths, azaleas, and epacris, should be shaded from the direct rays of the sun.

Annuals—Sow in pots as occasion offers, for turning out into the borders in May.

Bedding Plants—Push forward those started last month, pinching in and regulating their shape.

Cacti—Water those showing flower.

Camelias—Those which have done flowering, examine for red spider; wash foliage, syringe, and prune.

Carnations—Make cuttings; set out the old plants for layers; never keep plants more than one winter.

Fuchsias, Chrysanthemums, etc., may be now propagated by cuttings from the new wood. Re-pot and prune established plants.

Geraniums, pelargoniums, Chinese primroses, cinerarias in or near bloom, keep near the glass, turning frequently.

Insects—Destroy by washing and tobacco fumes.

Pansies are best kept in cold-frames, and should be aired and kept back by not admitting the light and heat.

Parlor Plants require even more care than those of the Hot-House. It is an excellent plan to set the pots in larger ones of the same material or of tin, and cover the earth with moss to retain moisture. They will also require frequent turning, especially if growing near the window, to keep them in an erect position. See that the drainage is good and only enough water given to keep the plants in a healthy state; the surface soil may have a dry appearance when there is sufficient moisture at the root. Be sure that there is abundant water always evaporating in the room or in connection with the fire.

Roses—Established cuttings and plants for early out-door blooming, need re-potting.

Water is required in proportion to the growth of plants. As most plants are now pushing out vigorously, syringe the walls and foliage of plants, and wet the floors to induce a moist atmosphere from evaporation. It will also tend to keep insects in check. The water should not be of a much lower temperature than the atmosphere of the house.

GRAPEERY AND ORCHARD-HOUSE.—Cold grape-tries should be thoroughly whitewashed, mixing flour of sulphur with the wash; the vines may be lifted as the weather moderates, air given on fine days, and the borders watered with liquid manure. Do not tie up to rafters until all the buds have pushed equally, and keep the house moist when buds are breaking. In more advanced houses, give abundant air, especially where there is bloom; syringe often; thin out superfluous branches.

Orchard Houses—Give trees in pots and tubs liquid manure in moderate quantities, syringe walls and floors often, and give air freely on mild days. Thin out the fruit. Trees rooted in the ground require manuring and watering quite freely.



APIARY IN APRIL.—The bees will begin to fly pretty freely this month, and in many places to collect pollen. In some sections but little is to be obtained until quite late, yet the weather is often warm enough for extensive breed-

ing in good stocks, if pollen is abundant. The utility of flour as a substitute for pollen is pretty well established. It is difficult, sometimes, to get them to take it, especially when offered after a little is obtained from the flowers, but when given early, and a taste for it acquired, they will use large quantities. If it were of no use whatever after being taken into the hive, I still think it would pay, by keeping the bees employed while they might be getting into mischief by quarrelling with, or robbing some of the weaker colonies of the yard, and destroying large numbers. To feed the flour, make a floor several feet square, the size proportioned to the number of stocks. Put it in some warm place within a few rods of the apiary. The unbolted wheat flour is best, but not essential, any kind of flour will probably do; buckwheat, I am informed, has been used extensively. If it has been bolted, mix it with saw-dust, chaff, oats, straw finely cut, or any liquid substance to prevent its adhering too readily to their bodies. Begin by scattering some on the ground or in the grass near the floor; they will usually find it in a few hours. Keep them busy by feeding every fair day. Perhaps a little caution is necessary not to feed too much. Although I have never been able to find any left in the combs at the end of the season, or to discover any bad effect from giving too much, yet I apprehend their combs might be filled with it to the exclusion of brood. It would probably be safe to give what would average two or three pounds to the hive.

If warm weather should make the bees in the house uneasy, the room should be cooled, and the bees quieted, by putting snow or ice on the floor, until a fine day occurs for putting them out. For removing them, choose a clear warm day. When practicable let each hive occupy its old stand. Set out a dozen, and two hours later, as many more. Put the first as far apart as possible, and fill up the vacant stands as others are afterwards brought out; they will mix together less in the confusion of their first issuing, and a less number be lost by entering the wrong hive on returning. Any stock having lost its queen during winter, will be likely to show it near evening of the first day they fly out freely, but running about in apparent confusion. A queenless colony now should be united with some feeble stock, unless the queenless one is much superior in numbers, and in other respects will make the best stock; in which case, *that* should receive the bees from the other. The combs and honey of a queenless hive, if all right, may be set away for a new swarm, taking care to smoke with brimstone once or twice to destroy the worms as they hatch out. If the colony that contains the queen is the one removed, there will be some broods in the combs necessary to be taken out before putting away. Be careful and not save for a new swarm any combs containing foul brood. Ascertain the strength of each stock by thorough examination some cool morning. Contract the entrance of the weak ones, till only a single bee can pass at once. Watch for robbing bees on the first warm days—it requires close observation to detect it at first. Ascertain which are destitute of stores,

and feed as they require it, taking care not to expose any honey where other bees may get to it.

FAT CATTLE SHOWS.

Thanks to the change which the turnip crop introduced in our agriculture, we now fatten cattle all the year round. In olden time, men lived on salted meat during winter and spring; grazing in the pasture and the meadow was the only meat manufacture known; and in autumn time a great salting down of fatted meat, enough to last till summer time came round again, took place. No doubt, some of the fattened beeves were kept on by hook or crook till Christmas time; and if any man was resolute to have fresh meat all through the season, the hay crop was at hand to help him; but, as a general rule, fresh meat was the food of summer and of autumn, and salt meat the food of winter and spring. Store cattle starved on straw till grass came round again.

The introduction of the turnip crop, and more recently of the mangel crop—the use of various oil-cakes (the refuse of oil-bearing seeds), and the consumption of grain—the application of machinery to grind and crush and cut pulp, and mix and cook this food—have changed all that; and if there be any difference, probably more meat is now made in winter than in summer. It is made at greater cost, because summer made “beef” feeds and grows and tends itself, while that which grows in winter has to be fed by hand, and cleaned and kept warm artificially—because also that which is made in summer time is made when a summer’s sun ensures a minimum of waste in the process, while of that which grows in winter, a larger quantity must go as fuel in the lungs to maintain the temperature of the animal. The advantages, however, exceed the disadvantages, and the cost of winter feeding, when done with judgement, is repaid. The manure derived from it at that season is less liable to waste, and thus becomes more directly available for the growth of corn; and if animals are fed according to their condition, the meat, without considering the manure, need not of itself incur a loss. But whatever may be the experience of the winter grazer, it is the fact that since the introduction of fallow crops, and the disappearance of the bare fallow, as much meat is made in winter as in summer. The difficulty now is not to find food from November till March, or even April, on our arable lands, so much as to provide a summer’s store as long as is required. And though Italian ray-grass, when well manured, and vetches and cabbages do, to a great extent, meet that difficulty, yet it still, to some extent exists, and the feeding stock has to be reduced before the summer comes, lest the months should be more than the maintenance for them.

While, therefore, all the year round fat meat is at hand for the supply of the market, yet the main harvest time of the meat manufacturer on arable land is in the winter. And the good cheer which we expect about Christmas time falls in well with the ability of the farmer to supply it.

Just before Christmas time, accordingly, we

have our fat cattle shows. At provincial meetings all over the country, but especially in Birmingham and London, exhibitions of the ripest and most shapely specimens of cattle, sheep, and swine are shown in competition for the liberal prizes afforded by prize associations. Those who would see our characteristic breeds (themselves and their differences the offspring of circumstances), with those differences fully developed, and each breed perfectly illustrated, will find them in all at our great cattle show—where age and size, and ripeness for the butcher, and form and colour together, prove the relative precocity, quality and merits generally of Herefords, Devons, short-horns, and long-wools, Downs and Shropshires, of Berks-shires, Suffolks, and Yorkshires, and other less important English, Scotch, and Irish varieties of cattle, sheep, and swine.

They have been bred up to a wonderful precocity and aptitude to fatten—they have been fed up to a wonderful thickness and weight of flesh, and they now come to be judged and sold. We do not pursue them farther, or discuss questions of cookery, the last process of manufacture of food for man. But may for a while confine to discuss the means at our disposal for judging the animal when ripe and ready for the butcher. The judges at the show give their award according to the age of the animal—according to the symmetry of its form and thickness and quality of its flesh. The age ought to influence them; for of two animals equally good to all appearance, the younger is certainly the more meritorious, as having attained its condition in the shorter time. The symmetrical proportions of the animal ought to influence them; the outlines should be straight, as seen from the side, a long rectangle in side elevation; the form generally should approach the cylinder—a circle everywhere through ribs and loin section. It is thus that we ensure that the meat shall be thickest where it is best.

Thick meat over ribs, and loin, and round—where it is worth 1d and 2d a lb. more than it is elsewhere—is certainly desirable; and the rules which have long guided judgment of symmetry do in the main tend to the encouragement of the growth of meat where it is best. Lastly there is the question of quality. Now this is not an undisputed point. Mr. Carr, of Settle, has during the past summer written at much length and with great ability on the relative merits of the Booth and Bates' strains of blood in the short horn breed. He is an advocate of Cooth's superiority, and he has to meet with the well-known fact that Bates' animals possess wonderful "quality," as it is called. That is they handle with extreme softness, and a little bit of skin can be taken easily between a finger and thumb; whereas Booth's animals have greater firmness of touch, and cannot be laid hold of so easily by mere finger and thumb. He argues that this quality, which may be all very well as a guide in store beasts to their feeding qualities, is no guide at all to the butcher's judgement of how they will "die," as it is called.

In the case of well fattened animals, such as are exhibited among the breeding classes (!) at our great animal shows of breeding stock, a

firm touch, not a loose one, should be the judge's guide. Even here, however, a distinction must be drawn between a firm, elastic pressure to the touch, and a hard-hided density, which will not yield at all. And so, where age and symmetry are equal, the award is given to the animal possessing finest quality, so far as that can be determined by a certain combination of firmness and elasticity with which the hand is met when pressed upon the thick meat over the rib and back of a well fattened beast. In this way, then, are the decisions at our fat cattle shows arrived at. In this way did the magnificent ox of Mr. Taylor, of Sewerby Cottage, Bridlington, receive the first prize of its class, and the gold medal as the best ox in the yard, at Birmingham; and in this way did Mr. McOombie's fat Galloway cow take from even it the distinction there of being the best animal in the yard. The last decision rests, however, upon considerations which have varying weight with different judges. For though age and weight, and symmetry and quality determine the award, yet different men attach different degrees of importance to them relatively to one another; and so, though travelling by one common road to their decisions they arrive at different results. And the comparison of this ox or cow may be adduced as a case in point, for they have come together under different eyes at the Smithfield Club Cattle show just over, and though no prize is there given to the best animal in the yard, yet the Galloway is beaten among the cow classes at Baker-street by a short horn cow which was also at Birmingham, but which was not spoken of there as deserving the high distinction awarded to its rival.

DRAINAGE.

The dreadful visitations of the Almighty—the famine of '46 and after years—the unfavourable nature of the late season for the growth and ripening of corn and drying fuel, are surely for a good purpose. The former was a dire calamity. It was not without its benefits—it called into activity the benevolent mind, and made the people the difference of feeling for the destitute in those who were guided by the principles and the Word of God in those who made capital of his name, but to whom it was a *vox et preterea nihil*. It caused many who were in a false position—farmers holding land which they had neither knowledge, industry, nor the necessary capital to work—to be removed, and take the lowest room; and many are now far better off as labourers under good employers, and experience a comfort they never did before. Many nominal proprietors of estates who, steeped to the lips in debts and incumbrances—who were like the flying-fish, with enemies whichever way they turned—striving to keep up an external appearance, without the ability—adding daily to debts and difficulties—have with their families been obliged to adopt a different line of life; to exert mind and body to some more profitable investment than hunters and hogs and guns; have emigrated to our colonies; some have brought home considerable wealth; others are valuable colonists, and are

rising to wealth and station; and the lands are in the hands of men possessed of capital, will and skill, and they are showing what Irish land is capable of producing. The present visitation will cause people's minds to be directed to what will give increased employment and increase the produce of the country. Among these, draining the land takes the first place; for without it all other labour and manure applied to land is only a striving to wash the blackmoor white, and is money thrown away; but by drainage the worst and most unprofitable, useless land can be made the best. I had much experience of its benefit during the famine of '46, and following years; and 138 statute acres in my parish and vicinity, which never gave food for man and little for animal, are now, and have been ever since, as productive of grasses, corn and root crops as any in the country. The first crop of Italian ray-grass I ever saw was grown on one field which heretofore had been a swamp. The farmer told me that when he was a lad his principal business was to stay on the boundary, to keep the cattle out of it lest they should be lost in it. Another field, which was totally useless before being drained, the second year after produced a crop of wheat which sold from £17 10s. per statute acre. Drains were made at 33 feet distance, 3½ feet deep, all running into a main drain 4 feet deep. The first were filled to ten inches or a foot high with stones broken small; the last with dry walls at each side, built up to a treble deal, which was the height and breadth of the drain; covered with a flat stone, then sodded as the parallel drains, and filled. The prices given were 3½d. the statute perch for the parallel drains; 4d. to 6d. for the main drain. For putting in stone, cutting sods, sodding, and filling, 1d., a perch. A good-sized one-horse cart load of small stones was sufficient for every two perches of drain. The building of the side walls of the main drain was day work by which the labourers earned less, and was much more expensive to my fund. The labourers earned from 1s. to 2s. 6d. a day according to their ability and skill, and also according to the quality of the land. In some cases, where there was much difficulty—rock crossing the line of drain, or a very different subsoil—they were allowed accordingly; but this occurred very seldom. Pickaxes were provided for them, and at first they were kept in repair; but this had to be given up, they ran up such bills. Each man was provided with a pair of wooden-soled-shoes, which were imperious to wet. The men were all paid in food. It was bought by tons, and they got it in retail, at the wholesale price. They had an advantage in not having to resort to their retail shops. At first they were paid once a day, and soon twice a week was found sufficient. Their work was measured by an inspector, and on his ticket they were paid. The price of stone varied according to the distance of carriage. there are 160 perches in an acre; and as every perch of drain dried a perch at each side, the distance of the drain from each other being 33 feet, or 2 perches, there were, consequently, 80 perches of drain in one acre; and as a horse load of stone sufficed for 2 perches, 40 loads

were sufficient. Before putting the men to work, the drains were all marked by a plough; the main drain first and at the lowest part of the field, 16½ feet from the fence; then by applying a square, the first parallel drain was marked, 16½ feet also from the fence, and going to within 33 feet of the top of the field. At 33 feet from the first drain, the next was marked with the plough, and so on, to the extent of the field all 33 feet distance from each other, touching the main drain, and 33 feet from the fence at highest part of the field. A drain was marked 16½ feet from the upper fence, and this was sunk 4 feet, and the upper portion of the drains were sunk at each side so as to carry off the water from it; and if much water, the centre drain, was also of like depth as far as required. When all were distinctly marked with the plough the entire breadth of the top of each drain (2 feet) was ploughed up; and it would save expense if the sods were moved as ploughed, and as much of the earth moved with the plough as it could reach. Frames were provided and given; one would suffice for 10 men; they were 4 inches at bottom, 2 feet at top, and 3½ feet high in the centre, and the drain was to be made so that this frame would pass into it freely. By having the drain 4 inches at bottom and gradually tapering it took less stones. The passage left at the top of the field was a way for the carts to draw the stones, which would be done as soon as the drains were marked, so as to have them ready to put into the drain as soon as finished: then to sod over the stones, the sods lapping as slates on a roof, and the earth thrown in. When this is not done speedily, the sides often fall in and there is then increased expense in clearing the drain, which can be avoided by following this direction. If the land is ploughed and subsoiled, the ploughing should be at right angles to the drains, the field limed with 30 barrels to the statute acre; there will be a certainty of a good oat crop; or if in addition to lime it is also fairly manured with farm-yard manure, and from 3 to 4 cwt guano, or phospho-Peruvian guano, better, there will be a good root crop, which should be greatly benefited if the land was dressed, according the directions in the *Farmers' Gazette* with salt. 1 ton to an Irish acre, divided into two dressings, one to be given at the time of sowing, and one previous to last hoeing. The expense of the draining would be 3½d. a perch.

For cutting 80 perches at 3½d.	£1 3 4
For laying the stones, sodding and filling, 1d. a perch.	0 6 8
Extra expense for building the dry wall of the main drain, which most probably, as well as the sinking the upper and part of the drains, would be covered by 10s.	0 10 0

£2 0 0

So that £2 would suffice for all the manual labour. The expense of providing and drawing stones depends so much on local circumstances, that it is impossible to say what they would cost; but whether stones or tiles, it cannot be much for making a useless, unproductive field a fertile land capable of producing the finest crops. I found all the men I employ-

ed at such work were, and are still, grateful and thankful; and though now 13 years since, it is not a week since one of the men was referring with pleasing recollection to that work. While the people in the poorhouse were dying like rotten sheep, and cart loads of dead taken out, but one, (and he came to me a sickly man) died, out of 120 men, and several women and boys employed for an entire season, or of 90 men, besides women and boys, a second year, and of less numbers the following years, as the usual employment began again. Employment of this kind is far better than donatives to idle people, or lending money to farmers great or small, which was done largely, with much benefit unquestionably, to many at the time; but it kept them in a false position, and when the loan was required back, there was much ingratitude, and often a very bad spirit shown, and the most of the money lost. When money can now be had from the Board of Works, I know no greater charity, no more beautiful mode of employment for the people than appropriating it to this purpose; at the same time I give this warning, in no case to allow the farmer of the land to superintend the work; he has no idea of the necessary exactness of deep size of drain, quantity of stone; and the slovenly "well enough" system will mar the work. I allowed a few to superintend the drains in their own land, and when opening them I found them defective in depth, insufficiency of stone, and in one case the drains, after being cut, were filled in without stone. In this, as in every other case, "Well done is twice done." Wherever there is a wet land there can be no want of employment, and now, when money can so readily be provided, none need want. "Where there's a will there's a way. The system once decided on, and a resolve to allow of no deviation, there is little trouble no overseer required; I never had one, but a man of integrity to measure the length and ascertain the depth and breadth, by inserting the frame in different parts once a week, to certify for the work done by each man.

Your's, &c.,

WILLIAM B. TOWNSEND.

DAIRY MANAGEMENT.

The first essential is a proper dairy or milk house; and when we consider the abominable manner in which milk is frequently kept in dwelling-houses, even in sleeping apartments in barns where there is no protection against dust from the thatched roof and cobwebbed walls, we cannot feel surprised that there is so much good milk annually wasted in making atrociously bad butter. The milk-house should be sufficiently roomy, and fitted up so that it can be easily kept clean, and perfectly dry. For this purpose polished stone is the best material; and the immense quantities of marble which are found in many parts of Ireland could be turned to great advantage in this way, whilst at the same time, shelving of that nature would not be too expensive. Caithness pavement, being hard, dry, and susceptible of a high degree of polish, which is given to it before the stones are shipped, forms also very superior pavement and shelving, and is obtain-

able at moderate cost. Ventilation is likewise a necessary point in a dairy, and it must be so arranged that the milk room shall be cool in summer, and yet kept at a sufficiently high temperature during winter, which should never be below 50° F. The average temperature of Mr. Horsfall's dairy is 52° to 56°; and he is now recognised as a standard authority on many points of dairy management.

Earthenware dishes are much better adapted than wooden ones for holding milk, because the latter require much more labour in keeping them clean, and some dairymaids are apt to be negligent on this point. Cleanliness,—extreme cleanliness in fact,—is all-important in dairy management; for the least mustiness in the milk vessels will taint the milk, and injure the butter. The churns must be thoroughly scalded after each churning, and kept clean; sweet and dry.

Butter is made either solely from cream or from the whole milk; that is, the cream is not separated from the milk, in the latter as in the former case, but both are kept and churned together. There is a difference of opinion as to which mode produces most butter. We would remind those who are not accustomed to the latter method that they must not attempt to churn the *whole milk* while it remains sweet, otherwise their labour will be lost, for it will yield no butter; the whole milk must be kept until it has become sour, when if all other points are equally attended to, as good butter will be produced as from cream alone.

Supposing the cows to be all milked—and this must be thoroughly done, for the last milk which can be drawn from the udder is the richest—then the milk is poured through a milk sieve into the dishes, so as not to be more than two inches in depth; at the same time, 4 to 6 inches is more common. Cream will not rise when there is a considerable depth of milk placed in the dish, and some people do not allow it to exceed one inch. It also rises sooner in warm weather than in cold, and for this reason it must be skimmed sooner when the weather is warmer than usual. In ordinary cases the cream should be skimmed about 20 to 24 hours after the milk has been put into the dish; in warm weather taking it off somewhat sooner, and allowing it to remain a little longer in cold weather. As the cream is skimmed, it is put into an earthenware jar, the top of which is covered with a piece of muslin, in order to prevent flies or dust from getting into the cream, whilst it admits air. As additions of cream are made to that in the jar, the whole should be thoroughly stirred and intermixed together, and the contents should not be allowed to remain longer than three or four days without being churned.

When the whole milk is churned, it is strained, as milked, into milk dishes or coolers; but a greater quantity is done when the cream is to be taken off. In the North of Ireland, where churning the whole milk is a prevalent practice, the milk is strained into a jar or "crock;" successive milkings being added until the jar is full, but avoiding putting in new milk just before churning; that is, suppose the churning takes place in the course of the forenoon, the

morning's milk is not added to the contents of the crock which are to be churned, but put into a fresh crock, and becomes the beginning of another gathering. This system, however, is not so good as keeping each milking by itself, so that the warm and cold milk is not mixed together. The frequency of the churning will partly depend on the weather, but the whole milk ought not to be allowed to remain longer than three days in ordinary cases, or, perhaps, four, without being churned; and, in warm weather, it may be churned in two days from the time the first of it was taken from the cows.

In large and even moderate sized dairies the churns are driven by power, which is preferable to manual labour. Hot water is often added to milk or cream, to bring it up to the proper temperature for churning—say, 52 or 53 degrees; but this is not a good practice, and where an increase in the temperature is necessary, it is better to acquire it by putting the churn containing the milk or cream into a tub filled with a sufficient quantity of water, to bring the contents to a proper state. During the process of churning, the temperature will rise to 56 or 58 degrees; but it is requisite that attention be paid, so that it may not rise much higher than that point, otherwise the butter will be injured. When whole milk is churned, it will stand however, a higher temperature than cream. Rapid churning is not desirable, and over churning is equally bad; but the best medium will be found when it takes an hour and a quarter of steady churning, in ordinary weather, to produce butter.

There is a difference of opinion as to the best mode of handling butter after it is taken from the churn. Some put it into a small, flat tub, and wash the butter-milk out of it by kneading it among clear, cold spring water, the milky water being occasionally poured off, and fresh supplies added, until it ceases to become tinged with milk; others knead and beat it in a clean cloth which absorbs the buttermilk and is frequently wrung dry until the buttermilk is entirely taken away; whilst a third set of butter makers say that it ought to be worked by means of a wooden skimming dish, and that to work it in any degree by the hand, is to spoil it from the heat and perspiration, which is said to render the butter waxy. Mr. Ballantine's method, as detailed in the prize report in the *Transactions of the Highland Society* was to extract the milk by working it with the cool hand, but the butter itself was not washed or worked in water. Mr. Dillon Croker, who paid great attention to the management of butter, recommended that, after finishing the churning, the milk should be drawn off by a plug from the bottom of the churn and replaced by a quantity of pure spring water. A few turns of the wheel is then given and the water run off; this is to be repeated until the water appears as clean as when it is put into the churn, showing that the milk has been all extracted. A strong pickle well strained, is now put on the butter, and several turns of the paddles given so that every part will feel the effect, which finishes the operation. If the weather should prove warm, it will be ad-

visable, he considered, to let the butter lie in the churn for a few hours, which will render it firmer than it was when the washing was finished.

The salting process should commence directly after the buttermilk has been all extracted from the butter, and the quantity of salt must be regulated by the purpose for which the butter is intended. When it is to be sold merely powdered, a quarter of an ounce of salt will be sufficient for a pound of butter. For ordinary keeping purposes, or the London market, it may be cured with half an ounce of salt to the pound of butter, and many add a quarter of an ounce of yellow sugar, and one-eighth of an ounce of powdered nitre. For export to the colonies, or long keeping, more salt is necessary, and as much as one ounce of salt with a proportionate quantity of sugar, and the foregoing quantity of nitre, will be required. Nitre and sugar are both omitted by many, but these ingredients assist in flavouring and preserving the butter.

The salt used must be of the purest description, free from the salts of lime and magnesia which exist in ordinary sea salt. Prof. Johnston recommended the purification of common salt for dairy purposes "by pouring two quarts of boiling water upon one stone or two of salt; stirring the whole well about, now and then, for a couple of hours, and afterwards straining it through a clean cloth. The water which runs through is a saturated solution of salt, and contains all the impurities, but may be used for common culinary purposes, or may be mixed with the food of cattle. The salt which remains in the cloth is free from the soluble salts of lime and magnesia, and may be hung up in the cloth till it is dry enough to be used for mixing with the butter, or with cheese. The salt must be rendered as fine as possible, which may be done by crushing it with a rolling pin, and the nitre and sugar well mixed with the salt, when these ingredients are used along with it. In salting, the butter is spread out thin in the tub, and the salt, &c., carefully sprinkled over it, and worked in with "the heel of the hand," until the whole is uniformly and thoroughly intermixed. Some only work in half the salt at first, and then lay the butter aside until next day, when the remainder is added, after pouring off any brine which has come off the butter. A great deal of Irish butter is spoiled by over salting.

When the salting process is completed, the butter is packed into "crockers"—earthenware jars—or into small casks. The former answers well enough when the butter is intended for home use, but when it is to be sent by rail or steamboat it should be packed in firkins. These are made of ash or oak, and previous to being filled with butter, they must be first filled with boiling water which will be allowed to remain in them for 20 or 24 hours; they are then well rinsed in clean cold water, and filled with strong hot pickle which may remain in them until they are required for use. The firkins are weighed before the butter is put in, and half a pound being allowed for an additional soakage that may take place, the weight of the firkin is branded upon it. A little fine salt is then sprinkled

in the bottom, and the butter packed tightly with a wooden rammer, or with the knuckles, and the greatest attention must be paid to this operation, so that there shall not be any vacant point left, how small, would soon spoil the butter. If the firkin or jar is not filled at one churning, the butter must be covered with pickle, or some salt is sprinkled over it, and a clean cloth pressed close upon it, to keep out the air, until the next churning is ready, when the pickle is poured off, or the salt carefully removed with a spoon, and the smooth surface is roughened or raised into furrows, for the purpose of allowing the last packed butter to become perfectly united to the first, without any appearance of seam, which would be the case were this precaution to be neglected. When firkin or jar is filled a little salt is strewn on the surface, and a piece of linen, dipped in strong salt and water, is spread equally over the top, when the cask may be headed, and is then ready for market, to which it should be sent with as little delay as possible. Butter which has been improperly packed, or otherwise affected by the air; becomes rancid; but this may be cured by heating it in water into which from 12 to 15 drops of chloride of lime to the pound of butter have been added. After working it well, leave it lying in the water, for two hours and then wash it in pure cold water, when it will be found to have become sweetened.

Cheese.—There is considerable diversity in the manufacture of this article; so much so, that not only is there a marked distinction between the cheese produced in different districts, but it frequently happens that such is also the case on adjoining farms in the same district. In the latter case no doubt, whilst the distinctions may rise from natural causes, such as the nature of the pasture, and of the breed to which the cows belong; still it is well known that much of the character of the cheese arises from the manner in which the milk has been previously treated, and in the case of skim milk cheese, from the proportion of cream which has been allowed to remain on the milk. Some "goodwives are notorious for keeping what is called "a good churning-dish; that is, they are very particular in removing every particle of cream from the milk, for the purpose of making butter, and the cheese made from the milk is therefore, of a peculiarly leathery texture. It was an article of this kind which elicited a rather pithy criticism from a half-witted fellow who got a living by running errands about Dunblane, in Scotland. On one occasion he was sent to a farm-house where the "creaming-dish" was very rigorously used, and being set down to a repast composed of bread, butter, and partly of cheese, he was observed to spread the butter pretty thickly over the cheese, muttering all the while quite loud enough to be heard by the bye-standers, "Deil be in their fingers that ever parted ye."

But it appears to be the case that for some unknown reason cheese cannot be successfully made in some parts of the country, and we have found some marked instances of this in Ireland, both on the sown grasses of a five-shift course and on the old pastures of the

Golden Vale, and that too where it has been tried by persons who had been all their lives acquainted with the process of manufacture as practised in Cheshire Ayrshire. At the same time, we found excellent cheese made on other farms at no great distance, but certainly where the soil and pasture were somewhat different, showing that there is nothing in the climate at least, as some allege to prevent cheese making being carried on in Ireland. It has never gained a footing in Ireland, however.

When skimmed milk is set aside for cheese making, it must be scalded, *but not boiled*, in order to prevent it from turning sour, which would spoil the cheese. In making sweet milk cheese—that is, when the milk is used without being deprived of the cream—the morning's milk is mixed with that of the preceding evening supposing there is a sufficient quantity of milk to allow a whole cheese to be made every day—the cream which has gathered on the evening's milk being mixed with the entire quantity, the temperature of the whole being raised to a certain degree by heating a sufficient quantity of milk in a pan set in boiling water, and then pouring this warmed milk into the rest. The temperature to which the milk is raised ranges from 75° to 80°, and even 90°, a higher temperature being requisite in cold than in warm weather. The milk at this stage is all in one tub, and it is at this point, that the "rennet" is added. This is prepared for calves stomachs, which have been salted a year before they are used. These can generally be procured from shopkeepers in the dairy districts; and where cheese is the sole object of manufacture, two, "bags," or "vels," as they are sometimes termed, are necessary for the milk of each cow during the season. In some cheese districts, stale rennet is used; in others as in Cheshire, it is prepared only the day previous to being put into the milk. The Cheshire system is to cut two bits two or three square inches off the veils or bagskins, and those bits are "put into half a pint of warm water, the day before use, along with a teaspoonfull of salt this infusion suffices for 50 or 60 gallons of milk" (Morton). In Gloucestershire, where stale rennet is used, 6 vells are but to every two gallons of brine, and in large dairies a 30 to 40 gallon cask is prepared at once. The infusion is considered to improve with age, that is, if it is not further diluted by the addition of more brine. Stale rennet is also used Ayrshire in the manufacture of Dunlop cheese, and that which is made according to the Cheddar system, a tablespoonful of the rennet being added to every 20 gallons of milk. It is at this stage also that annato is added for the purpose of colouring the cheese—a practice which, we think, ought to be given up; for it is only a mere fancy, and does not improve the quality of the cheese in any degree.

The time requisite for coagulation varies according to the temperature of the milk when the rennet is put into it. Where the temperature ranges from 75° to 80° the curd will usually take an hour to form; but where the temperature is from 85° to 90°, it may only require half the time or even less. Too rapid coagulation is not desirable.

PROFITS OF KEEPING FOWLS.

A correspondent of the "Boston Cultivator" says: Being rather skeptical about keeping fowls as a matter of profit, I was determined to make a trial. Accordingly I commenced the 1st December, 1860, with ten hens and a rooster, and kept an exact account of the food given them and the income. At the close of the year I find the account to stand as follows:—

146 dozen of eggs, average 15½ cents per dozen	\$22 39
10 chickens sold	3 12
10 " on hand, 25 cents each	2 50
Total	\$28 01
Grain and potatoes fed to them	8 21

Balance in favour of fowls . . . \$19 80

My hens were kept during the cold season in the basement story of a shop, which opened to the south, and the side fitted with windows. They were thus kept comfortable, and laid best through the coldest weather—laying during the months of January and February about 26 dozen of eggs.

I do not give this trial thinking it anything remarkable, but only to show that by proper treatment fowls may be a source of profit.

SOULANGES AGRICULTURAL SOCIETY.

To the President and Directors of the Agricultural Society of the County of Soulanges.

GENTLEMEN,—Allow me to congratulate you on the success of last year's operations, and in making a few observations and suggestions on the past and future, I trust you will not think that I am actuated by any motive but a sincere desire to see our society prosper and become useful to our county and country.

That agriculture and industrial enterprise of all kinds, being now freed from the baneful domination of the Feudal Tenure, have not sprung from under that load with the rapidity and vigour that was anticipated, is owing to many counteracting causes, unconnected with the salutary influences of that measure. A few of the most prominent I shall take leave to comment upon.

First, was and is the great indebtedness of the farmers. To liquidate these debts a forced and ruinous system of over-cropping is resorted to, which, of necessity, causes a rapid deterioration in the quality and productiveness of their lands. Then, the alteration of the usury laws, let loose a horde of money lenders; many trading on their own capital, others with money borrowed from the Trust and Loan Company at eight per cent, to be re-lent at fifteen, twenty and even twenty-five per cent. Of course no farming operations can ever cover these rates, and many of these Shylocks will, at the end of their term, find that they are in possession of more land than money. Of course, it must come to the hammer, and this result, though a cause of much distress and suffering, will ultimately improve the country. The negligent and unthrifty will be replaced by energy and capital free from a grinding interest and accumulated debt. Then, I expect, we shall have a better system of cropping, and

more attention will be paid to the quality of the stock raised, and a more careful husbanding of the manure made on the farm. This latter object must be the foundation of all good farming. Show me a man who is careful of his manure heaps, and you need not look into his barn to see the result.

With regard to the improvement of stock, I would suggest the following alterations in the by-laws of the society, in respect to stallions and bulls. That these should be shown on the 1st of May for inspection, and the prizes awarded, but not paid until the show in the following October, and proof given that the animal has been kept for the purpose intended. The proviso is now the same, but who will keep a horse or bull from October to the next season for the sake of the six or eight dollars, and so the present by-law has become a nullity. Each one sells his beast when he gets a chance, and the premium is thrown away.

In respect of horned cattle, we have made one effort in the purchase of a thorough bred Ayrshire bull, but we parted with him too soon. You all saw what an improvement there was in the young stock shown last autumn, but this will not continue if we have not a pure fountain to draw from, for it is a well known fact that a good breed, not to say pure stock, will run down much faster than you can improve it. The only way to prevent this falling back is continued crossing the grades with pure blood. It is not enough to get a good looking bull from here and there, if the object is to obtain thorough bred stock; you must have pure blood to cross grades with. See a very good article on this subject in the *Lower Canada Agriculturist* for January 1st, 1862. Would it not now be well to form two classes, one for native stock and another for grades? These were shown together, and the biggest took the prize without reference to form or blood.

Again the sheep were a disgrace to any country. Something should certainly be done to start an improvement in this class. Perhaps some of the harder breeds would be preferable to the Leicestershire. I see in other counties they generally have a junior class for ploughing. This is a very good arrangement and would be of great service here, where there is so much room for improvement.

Can nothing be done for the improvement of our winter roads? The farmers now loose from six pence to a shilling per bushel on grain from not being able to take their grain to market. They cannot drive into Montreal with trains, and they cannot use double sleighs in the country, as the roads are too narrow. I think a small tax on all winter vehicles having the horse straight before them would correct the evil. And now, in conclusion, let me add that if some counties surpass us in some things, we excel most in one respect, viz. we have no distinction of class or origin. No question is asked of who or what are you, but is the article produced the best? if so, you have the premium whether Saun or Gaul.

I have the honour to be, Gentlemen,

Your most obedient servant,

H. ROBSUCK.

