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The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 2, Montreal, June, 1856.

POSTAGE FREE.

Price 2s 6d per annum, in advance.

The Farmer's Journal.

Board of Agriculture, Lower Canada.

MONTREAL, Tuesday, May 13, 1856.

By direction of the President, due notice was given to the Members of the Board to meet at their Rooms in this city, this day at 11 o'clock, A.M., but there not being a quorum present, an adjournment took place to the day following, to meet at 10 o'clock, A. M.

Wednesday, 14th May, 1856.

The Board met this day at 10 o'clock, A.M.—Present:—

A. Pinsonneault, R. N. Watts, E. J. De Blois, and James Thomson, Esqrs., also J. W. Dawson, Esq., Principal of McGill College, and Professor of Agriculture in that Institution.

Mr. Thomson, Vice-President, having taken the Chair, the Secretary submitted a letter from the Secretary of the Bureau of Agriculture, Toronto—stating the re-election of the four Members of the Board who retired by rotation—namely, Messrs. Pinsonneault, Taché, Thomson, and Dumoulin. Also, a letter from the Secretary of McGill College, Montreal, stating that the Principal of that College had been appointed Professor of Agriculture in that Institution. The Secretary represented that on receiving this intimation, he had addressed a letter to Professor Dawson, inviting him to the meeting of the Board this day in that capacity.

It was proposed by Mr. Watts, seconded by Mr. Thomson,

That E. J. De Blois, Esq., be elected President of the Board, but that gentleman having declined the appointment,

It was proposed by Mr. De Blois, seconded by Mr. Pinsonneault,

That R. N. Watts, Esq., be elected President of the Board for the present year—Carried.

Proposed by Mr. Watts, seconded by Mr. Pinsonneault,

That E. J. De Blois be elected Vice-President for the present year—Carried.

It was then Resolved—That the Board learns with regret the cause of the absence of Major Campbell, from this Meeting, and sympathises sincerely with him in his affliction. It begs to convey its thanks for his zealous and able conduct as President of the Board for the last three years. The Secretary was instructed to send a copy of this Resolution to Major Campbell.

The Secretary placed before the Board a full statement of the accounts for the past year—and Messrs. Pinsonneault, Thomson, and Yule, were appointed a Committee to examine them, and report to the next meeting of the Board.

The Secretary submitted a copy of the Contract entered into with Messrs. McDougall for erecting the fences and necessary buildings for the Provincial Exhibition at Three Rivers, to take place next September.

Several applications for Sectional Agricultural Societies, were made to the Board for their sanction.

The following were the decisions on the same:

1. From south end of the County of Drummond—not granted. It appears from the opposition made by the original Society for Drummond, that it is not advisable to grant a second Society for the current year.

2. From the County of Missisquoi—not granted. Notice having been given to the County of Missisquoi Agricultural Societies, when it should have been given to the County of Rouville Agricultural Societies—the Parishes of St. Thomas and St. George forming part of the Agricultural Division of the County of Rouville.

3. From the County of Saguenay two applications. First from Malbaie—sanctioned—to be Society No. 2 in that County. Second from Baie St. Paul—sanctioned—to be Society No. 3 in that County.

4. From the County of Stanstead—not granted. Mr. Bullock to be informed that the protest against the formation of Society No. 2, is so numerous and respectfully signed by inhabitants of Stanstead and Hatley, that the Board do not feel themselves justified in sanctioning its formation.

5. From the County of Dorchester, application for a third Agricultural Society in that County—sanctioned.

6. From the County of Shefford, application for a third Agricultural Society—not granted,—the applicants not having complied with the regulations of the Board. The proposed amendments to the law, now before the Legislature, if passed, will meet the case for next year.

7. From Three Rivers, County of St. Maurice, application for a third Agricultural Society in that County—sanctioned.

8. From Agricultural Society, No. 2, in the County of Leinster, to have two parishes added to their limits—not granted. The notice required by the Resolution of the Board not having been given to Society No. 1, the prayer of the application cannot be granted.

9. Communications from Agricultural Society, No. 2, County of Two Mountains. The Board have instructed the Secretary to say, that the Board has this day been organized according to law, and that the communication of the 27th of December last, has been laid before them. Upon inquiry, the Board find that the question to which it refers, was decided by the former Board, on the 7th of November last, and that the decision was communicated to the Society, which decision the present Board cannot now revise. This conclusion is the more readily arrived at, as the new law, now before the Legislature, provides for a separate society for each new electoral county.

10. Application from County of Champlain to sanction a public Granary—granted for the current year.

11. Application from County of Beauharnois Agricultural Society, No. 2, to be organized as the Society for the new County of Chateauguay—not granted, as the new division of Counties is only for representation and municipal purposes, not for agricultural.

12. Communication from F. H. Charest, Model Farm, Nicolet. The Board cannot at present recommend the establishment of a Model Farm.

13. Communication from Mr. Charneck, Hamilton, on the subject of Draining. Mr. Charneck to be informed that the Board will be happy to consider any proposed Law that may be laid before it for the purpose, by the Board of Agriculture of Upper Canada.

14. Application from Sherbrooke respecting slating tools missing by the "Sherbrooke Slate Company," and setting forth that they were lost at the late Exhibition held at that place. The Board have made every inquiry, and regret to say they can hear nothing about them.

15. Application from the County of Berthier Agricultural Society, to be allowed to establish a Public Granary. Granted for the current year.

16. Application from the County of Richelieu Agricultural Society No. 2, to be

allowed to buy gypsum instead of seeds. Granted for the current year.

17. Application from Mr. Ossaye to be paid £12 10s for seeds and implements for the Model Farm at La Tortue. Mr. Ossaye to be informed that the Board cannot entertain the application.

18. Application from the Secretary, Wm. Evans to be paid his travelling expenses to the Agricultural Exhibition at Boston last October. Granted.

19. Communications from Agricultural Societies No. 2 and 3, in the County of Ottawa, complaining that the limits of their operations prevented them from obtaining a due proportion of the Government allowance to the County. The Board on referring to the Census of 1851, is of opinion that the distribution of money has been made in accordance with the number of the population, and that no change can be made for the present.

20. Application from the County of Chambly Agricultural Society No. 2, to be allowed to have a Public Granary. Granted for the current year.

21. Application from Mr. J. C. Spence for £5 for services at the Provincial Exhibition at Sherbrooke last year. Mr. Spence having sent in an account at the time, was paid the amount in full and signed a receipt. No supplementary account can now be entertained by the Board.

22. Communication from the Principal of McGill College in reference to its Agricultural Department, and asking for aid in procuring books and apparatus, and in offering prizes and scholarships. The Board direct that Professor Dawson be informed that the state of the funds at the disposal of the Board does not enable it to offer any assistance; at the same time the objects in view are so very desirable that it is prepared to promise that a sum of fifty pounds currency, be appropriated for these purposes, should any surplus remain in the hands of the Board, after it has settled all claims to which it may be liable, arising from the ensuing Provincial Exhibition at Three Rivers.

Resolved—In the opinion of the Board it is highly desirable that as the guardians of the interests of the agriculturists in Lower Canada, they should be consulted on all changes in the Laws relating to agriculture which may be proposed to the Legislature from time to time. It was therefore resolved that the Minister of Agriculture be

especially requested for the future to communicate all contemplated changes for the opinion of the Board of Agriculture, in sufficient time to enable them to assemble and consider the same.

It having been suggested by the President that some of the members of the Board might attend such of the County Shows as may be held at places in the vicinity of their respective residences, during the ensuing autumn, it was resolved that the President communicate with the dissenting members of the Board for the purpose of carrying out that suggestion.

The business submitted to the Board being all disposed of, the meeting separated.

By Order of the Board.

WM. EVANS, *Secy. Treas.*

Board of Agriculture.

Montreal, May 16th, 1856.

Root Crops.

(*Second Article.*)

In our last we referred to the varieties of root crops, the manures appropriate to them and the manner and time of sowing. But supposing the ground tilled and manured, the seed sown and above ground, and safe from the depredations of the fly, the next question is—how can the farmer find time for the subsequent culture? It is useless to attempt root culture without a sufficient amount of tillage to keep the ground free from weeds, and without careful attention to thinning. These operations too must be attended to in a busy time, and may interfere with haying. Let us consider then, first, the time for cleaning and thinning.

It is time for cleaning and thinning when the plants are about three inches high, but it may be a little earlier or later according to the amount of weeds and the thickness of the plants; and by skilful planning the time may usually be so chosen as not to interfere with the hay crop. This will be all the easier if the farmer has sown his turnips somewhat early, and has his hay land in such condition as not to be burnt up early in the summer. Further, the tendency of rotation and root culture is to the production of heavier hay on a smaller surface, and consequently to reducing the time occupied in summer with the hay crop.

The next process is the ploughing. This may be effected speedily with a common light plough, passing it along the drills about two inches from the plants, and throwing the

soil into the space between the drills. Some persons at once commence thinning after this ploughing, but it is better after a few days to run a cultivator or horse-hoe between the drills, to stir up the soil and to some extent restore it to its place. Others use the horse-hoe alone without any previous ploughing, and this serves the purpose quite well where there are few weeds.

This operation being finished, every procurable hand must be employed in *singling* or *thinning*, a process very speedily performed by skilful workers with proper tools. The proper implement is a thin steel hoe, with a light straight handle, 3 to 4 feet long. In the Scottish method, in which the thinning is performed at one operation, the hoe used is 7 inches wide, but where the thinning is performed at two operations it should be only 4 to 5 inches wide. Hoes are very cheap, so do not put clumsy tools into the hands of thinners.

In thinning the worker should stand with one foot on each side of the drill next to the one to be thinned, and the plants to be removed are either *pushed* or drawn out of the drill, (the former is usually considered the better way), leaving single plants at say 10 inches apart, or at 5 inches if the thinning is to be finished at another time. Thinning turnips is light work, but it requires much skill and care to leave the plants single and yet uninjured. In Scotland and England women are preferred as turnip singlers, and in America, where the turnip crop is at all extensively cultivated, much of the work is done by children, who, however, are seldom sufficiently careful. Where children or young people are employed, premiums should be given to them for the best work. In England it is estimated that one experienced singler can thin half an acre of turnips in a day of ten hours.

The thinning being finished, the horse-hoe is sent through the drills, and when the singling is completed at once, another hoeing is given. When the plants are only half thinned at first, the second thinning answers to this, and should be carefully done, so as to leave the plants quite regular, and with their roots sufficiently covered. Finally the horse-hoe is again used, or the drills are slightly earthed up with the plough. The whole work is thus reduced to three or four ploughings or horse-hoings, and two hand-hoings, and the time occupied by these last need not, even for an inexperienced worker,

be estimated at more than three days per acre.

We close this article with the following instructive extracts from Peters and Stephens:—

Hoeing and Cleaning.—This is the most important part of turnip culture, for manure as heavily as you please, if this is neglected, or carelessly or imperfectly done, you will not have a good crop; a few days' delay, carelessness, or inattention now, will make a difference of hundreds of bushels per acre. There is no crop on your farm which can so ill bear delay at this time as your turnips, and unless you can afford to throw away the labour you have expended, and to forego the benefit of a good supply of turnips for your stock, do this *when it should be done, and do it well*. If you are short handed, let every man, woman, and child, who can lift a hoe, or pull a weed, go to work in earnest, and the job will soon be accomplished; and, what is more, your children will become expert at turnip culture, on which all successful farming in this Island will, before long, depend: and remember that a good turnip hoer never takes his eye from the ground until called to dinner; recollect this yourself and impress it on the children, and there will be no stopping to talk, nor ceasing work to gaze at every passer by, by which so much time is often lost. The method I have found best in hoeing, is this: as soon as the leaves are between two and three inches long, run a plough between the drills, taking away the earth on each side to within about two inches of the plants, this will make a little ridgelet between each drill, and cover up all the weeds; and if the horse hoe is run about a week afterwards, they will be found quite rotten and form a good manure for the land; (some use the horse hoe only, but if there is much yar and weeds, the plough makes the best work.) Then set to work with the hand hoes, and thin the plants five inches apart: do not be afraid of stripping the roots of the plants, as the more they are exposed the better; when the plants are a good size, and the leaves begin to touch each other, a second hoeing must be given, cutting out every other plant; this will leave them ten inches asunder, taking away at the same time any weeds that are between them. This second hoeing is very quickly done. If the land is very weedy, the horse hoe should be run between the drills, once before the second hoeing, and once after, and this will complete the work.

The distance between the rows of turnips has been fixed, conventionally no doubt, at twenty-seven inches, which is a very convenient distance for drilling up the land in the first place, with the common or double mould board plough, for dunging it with the ordinary tilt cart, and for working the implements employed in turnip culture, such as the sowing drills, and the succeeding scufflers and

drill harrows. The distances between the plants should be about twelve inches for the Swedes, and nine inches for yellow turnips and globes, and to insure regular and proper distances, the *singling* of the crop with the hoe should be regarded as one of the most important operations which claims your attention. For example, 5 lb. turnips at 9 inches asunder give a crop of 57 tons 12 cwt.; whereas the same weight of turnip, eleven inches apart give only a little more than forty-seven tons. Now how easy is it for careless people to thin out the plants to eleven instead of nine inches, and yet by so doing no less than 10½ tons of turnips are sacrificed.

We may add before leaving this part of the subject, that watering the turnip crop with liquid manure, not only remarkably aids the growth, but is a great safeguard against the depredations of insects.

CORRESPONDENCE.

FOR THE FARMER'S JOURNAL.

Agricultural Communications and Agricultural Education.

HEMINGFORD, March 30, 1856.

SIR,—Having seen a wish expressed in your columns, that you could meet with more correspondents amongst the Agricultural portion of the inhabitants of the Province,—I take this opportunity of addressing a few remarks to you. The reason that I conceive you have so much difficulty in obtaining communications is from the fact that farmers in general are not a literary class of men, being composed for the most part of persons who have emigrated to this country with limited capital, and who are only now just beginning to enjoy the benefits resulting from years of continuous labour and hardship, and from their having been used all their lives to incessant toil, they are little accustomed to even reading works of a professional nature, still less of writing upon professional subjects. Now, my object in addressing you upon the present occasion, is to point out the benefit which would result to the rising generation from a more general diffusion of the theory and practice of agriculture. It does seem extraordinary to me that of so widely practised and of so all important a profession as farming, so little should be generally known of its theory and principles, embracing as they do so much of chemistry, mechanics, and many other subjects which of themselves require years of study to become masters of; and that no steps are taken to provide any information whatever on a subject which affects alike the interest of every member of the community. Now, I think that something might be done to improve matters, if a library of well selected works were attached to each Agricultural Society throughout the Province, and further information might be pro-

pagated by the institution of courses of lectures through the different Townships which might be delivered by competent persons, under the direction and supervision of the Board of Agriculture, and receiving a recompense from Government grants. I do not think that at the present time the country is in a fit state for the erection of agricultural colleges or schools, as labour is so valuable that farmers would be unable to spare their sons away from home for a sufficient time to prove really useful to them. But as the government is now exhibiting every laudable desire to encourage education in general. I think that some portion of their funds might be very usefully laid out in promoting this special branch, either by the means I have pointed out or by establishing classes for that purpose in different schools throughout each district. That the ignorance on these matters is a crying evil, there is no doubt, and if some initiatory steps are only taken, the best and easiest system of carrying out education in this branch on a wider basis, would then be discovered. The only difficulty I see, is getting any person to move in the matter, for, if once undertaken, I am certain that the people would gladly avail themselves of any means readily brought within their reach, and wonder that they had got along as they have done so long blundering in the dark.

I have the honour to remain your obedient servant,

FRANCIS DRUMMOND FULFORD.
W. Evans, Esq.

To the Proprietor of the Farmer's Journal, Montreal.

MY DEAR SIR,—I beg to hand you inclosed, an excellent letter, addressed to me by Francis Drummond Fulford, Esq., of Hemmingford, supposing, I presume, that I was connected with the *Farmer's Journal*.—May I hope you will be pleased to give it insertion in your valuable paper.

I perfectly concur with Mr. Fulford, as to the cause of the difficulty of obtaining communications from agriculturists for your Journal,—I experienced the same difficulty for many years, while I had the management of the *Agricultural Journal*. Mr. Fulford's suggestion in regard to Agricultural Education, and Agricultural Lectures, is entitled to favourable consideration, but I fear, it will not receive the attention it deserves. I have frequently endeavoured to attract attention to the same subject, but with little success. It is very commendable in Mr. Fulford, taking so much interest in our agriculture, and to write such a letter as the enclosed. I hope this example may act as an encouragement to other educated, and respectable young men, to give their views on the same subject. It would be a great advantage to agriculture, if it was to become a favorite occupation here, as it is in Britain.

Very truly yours,
Wm. Evans.
Montreal, April, 1856.

There is no doubt much truth in the reasons adduced above by our Correspondent for the paucity of agricultural communications. We trust, however, that our readers will bear in mind that in such matters we attach far more value to sound practical facts than to merely literary merit. We would also remind them that the winter evenings of Canada afford to the farmer much time for mental improvement, as well as for making known to others the results of his experience.

All enlightened agriculturists must agree with our Correspondent in desiring better provision for education in the theory and practice of farming. We are aware, however, that much difference of view exists as to the means by which this can be obtained. For our own part, we hold that, not one only, but many means must be employed. The country may not yet be prepared for the establishment of proper Agricultural Colleges and Schools in connection with Model Farms. We cannot doubt however, that even now the Legislature would act wisely in providing for at least one such institution in Lower Canada. Under skillful management it would form a centre and nucleus for all other efforts. In the mean time, we may at least have the following agencies—(1) Our Universities and Colleges might establish classes in agriculture, offering their advantages on easy terms to young farmers during the winter months, and if they require aid for this purpose, the Board of Agriculture might assist either by giving bounties or scholarships to the most successful pupil, or by providing the necessary apparatus, &c. (2) Agricultural chemistry should be taught to the pupil-teachers in our contemplated Normal Schools. They might then, with the aid of text books which may be readily obtained, teach this subject in their schools or open evening classes. (3) These agencies could scarcely fail to produce some young men qualified to become itinerant lecturers under the Board of Agriculture. Provided with a portable apparatus, they might in the winter months pass from settlement to settlement, bringing before the mental vision of young and old the new lights which modern science has cast on the most ancient of arts. (4) Under the auspices of such men, and of other educated agriculturists, meetings for discussion might be organised in connection with the Local Societies; and Farmers' Clubs and Libraries

might be established. (Lastly) Lectures and discussions in such meetings might be published in our Journal, for the encouragement of others and the diffusion of new facts in agriculture. Such agencies, acting and re-acting on each other, will constitute a combined effort in the direction of improved agriculture that must speedily be felt throughout the Province. Let any of our higher institutions of learning institute in the next winter a school of scientific agriculture, let the subject be thoroughly taught in the Normal Schools which we hope will be in operation before the close of this year, and let the Board of Agriculture devote a small sum to aid in such efforts in any way that circumstances may render expedient, and the point of the wedge will be entered.

Onions and Squashes.

We cannot say that we have much experience in cultivating onions or squashes on the large scale; but the success chronicled in the following extract from the *Massachusetts Ploughman*, shows that under the care of our New England neighbours, these vegetables, form no small source of profit. The manure used was sea-weed, but well rotted manure or compost with a dressing of guano, would almost exactly represent this.

Mr. Brown had eight acres of land in onions: the largest lot containing about three and a half acres. This is in the underdrained field exhibited in the Transactions of the Society for 1854. A portion of this lot, (viz, that part which before under-draining, was covered with stagnant water much of the year,) say from one-fourth to one-half an acre, has now upon it the greatest yield of onions, beyond all controversy, ever raised in the county of Essex. Mr. B.'s estimate I believe was 1000 bushels to the acre for this spot. I cannot estimate it at less than that, and indeed find I had marked on my memorandum as high as 1200 to the acre for the spot referred to; and in my present estimate of 1000 bushels I am fully sustained by several gentlemen, Trustees of the Society, who visited and examined this field just before the onions were pulled. They were then lying upon the ground and perhaps seen to better advantage. This amazing yield, it is true, is confined to a comparatively small spot; but if the whole eight acres shall be found to have less than 5000 bushels of marketable onions, I shall be disappointed. The average would be 625 bushels, and as that amount has not unfrequently been reached in the county, I cannot believe it too high. The manure was chiefly the decomposed kelp before mentioned, ploughed in with a small quantity of

compost manure. Mr. B.'s usual quantity of the kelp is 8 to 10 cords to the acre, but in 1854 he put on 12 cords per acre, and undoubtedly that extra amount is felt in this year's crop although some fields have suffered by the drought.

A lesson is to be learned from the fact, that upon one side of the under-drained field, for perhaps thirty rods, the last year's crop was *turnips*—and there the onion top is yet somewhat green; but where the onion follows a *carrot* crop, it is nearly as ripe as when following onions themselves. The onion rows in this and all other lots, are fourteen inches apart.

Other fields in onions presented crops every way equal to the one above described, with the exception of the quarter or half acre particularly described. One of these fields, now partly in grass, was taken out of the pasture in 1836.

Mr. Brown has five acres in squashes. One measured acre has this year produced ten wagon loads, of one ton each. The squashes are now all stored in lofts well ventilated, lying two deep, and they afford a sight worth any man's ride of a dozen miles to Marblehead to see. Of the five acres in squashes, two are of the pure Marrow. These weighed thirteen tons, and they are a splendid exhibition of this delicious vegetable. Of another squash, however, resembling the Marrow, but regarded by Mr. Brown as inferior to it, being a mixture of the Marrow and Indian squash, he has produced 13½ tons from one acre! It can be afforded for two-thirds, or perhaps half the price of the Marrow. On inquiry, it appears that the destructive yellow bug, so dreaded everywhere, and which is usually destroyed by killing, troubles Mr. B. but little. He uses lime. A cask or more is slacked in the usual way, only as dry as possible, and while it is hot is sown broadcast, in a favorable wind, over the vines.

Fish Manure and Animal Refuse.

All animal remains furnish very rich manures, and are especially valuable when mixed with a large quantity of earth or mould, through which their fertilizing properties become diffused, and in which, by their action on the air and on the materials of the mould itself, they develop new materials for enriching the soil. The following article from the *Transactions of the Highland and Agricultural Society*, may give some useful hints on this subject.

Although the importance of all sorts of animal matter as a manure has long been familiar, and has been frequently insisted on both by science and practice, the immense quantity of such refuse has hitherto become very partially available. The main difficulty which has stood in the way of their profitable application has been the want of a good process by which they can be converted in-

to a portable form. The enormous quantities of fish-refuse annually produced in Newfoundland, and even on some parts of our own coasts, has been frequently pointed out as a source from which agriculture might derive valuable assistance. Considerable interest was excited some time since by the proposal of various methods by which the desirable object of rendering fish offal portable might be attained, and very important results were anticipated from them. As yet these anticipations have not been fulfilled, material difficulties having been encountered in carrying most of the processes into operation on the large scale, some of the plans proposed having proved too expensive in practice, while others are so obviously impractical that no one has been found willing to invest capital in carrying them out. The error in most cases has lain in the employment of expensive machinery, which the conditions under which such a manufacture must be carried out may be said to preclude. It is probable that the quantity of fish offal to be obtained at any one spot will not generally be very large, and will be collected at one period of the year, so that the machinery would require to be sufficient to work up with rapidity the whole of the offal produced, and would lie idle during the rest of the year. It is in some such way that most of the plans have hitherto failed; but I have recently analysed a sample made by a patent process, which is said to be simple and inexpensive; and should the manufacture yield on the large scale a material of uniform quality, and equal to that I have examined, it will undoubtedly prove a very important addition to the list of ammoniacal manures.

The manure was in the form of a yellowish powder, in grains about the size of fine oatmeal, remarkably uniform in appearance, very dry, and almost devoid of smell. Its composition was:—

| | |
|--|--------|
| Water, | 8.00 |
| Fatty matters, | 7.20 |
| Nitrogenous organic matters, | 71.46 |
| Phosphate of lime, | 8.70 |
| Alkaline salts, | 3.80 |
| Silica, | 0.84 |
| | 100.00 |
| Nitrogen, | 11.25 |
| Equal to ammonia, | 13.65 |
| Phosphoric acid in the alkaline salts equal to 1.41 phosphate of lime, | 0.65 |

This analysis recalls to mind that of a flesh manure manufactured by Messrs Turnbull & Company of Glasgow, an analysis of which appears in the *Transactions of the Society* (New Series, vol. v., p. 203.)

There can be no doubt, that if fish manure, of equally good quality, can be produced, a large demand for it will soon be created. It is, in fact, a very valuable manure, and its price may be estimated very readily, according to the mode employed for Peruvian guano, by taking the commercial value of each of its important manurial

constituents as derived from other sources. The values usually adopted by chemists have been at the rate of 3d per lb. for phosphates, and 6d per lb. for ammonia; or, expressed in tons, £6 for the former, and £36 per ton for the latter. Upon this plan, and taking all the phosphates under one category, we estimate the value of 100 tons of the fish manure as follows:—

13.68 of ammonia at £56, £766
10.11 of phosphate of lime, at £6, 60

Value of 100 tons, £826
or almost exactly £8 5s per ton; and this will probably be its average value. At the present time, however, owing to the high price of bones and ammonia, its value would considerably exceed this. Sulphate of ammonia is now selling at £16 per ton, and at this price ammonia is worth £64, and phosphate of lime can scarcely be reckoned under £10 per ton, bones at present selling as high as £6 or even £6 10s. If these data be taken for calculation, the value of fish manure comes to be:—

13.68 of ammonia at £64, £875
10.11 of phosphate of lime at £10, 100

Value of 100 tons, £975
or £9 15s per ton.

In connection with this subject, it may be well to observe, that there are many sources of animal matter which must, at the present moment, be entirely wasted, although they might, with a little management, be turned to good account. Of these perhaps the most prominent is the blood and other offal of slaughter-houses in our small towns and villages. In the larger towns the blood is collected, although not very carefully, and finds its way to certain classes of manufactories in which it is employed; but in country places it is for the most part allowed to escape. It would be a matter of some interest to ascertain the annual value of the blood and offal thus lost, which is undoubtedly very large, and a great part of which might easily be saved by a very small expenditure of care. Such, however, is the carelessness of the workmen employed in slaughter-houses, that I have been informed, that even in the large towns it is with difficulty that they can be persuaded to save the blood, although its price is really considerable. Fresh blood contains nitrogen equal to about 3 per cent. of ammonia, and is worth about 2d per gallon, or nearly £2 per ton; and any farmer living near a small town might advantageously contract to take the whole of the blood at this price.

There are many other sources of animal matters which will at once occur to our readers as available for manures. Of these we may particularize the refuse of glue and oil-boiling works, which yield annually a considerable quantity of nitrogenous offal; and the two analyses of seal and glue refuse which follow will show that, even when they are prepared without much care, they may become useful manures:—

| | | |
|-----------------|--------------|--------------|
| | Seal Refuse. | Glue Refuse, |
| Ash, | 36.81 | 53.18 |
| Organic matter, | 41.85 | 38.00 |
| Water, | 21.34 | 8.22 |
| | 100 00 | 100.00 |
| Ammonia, | 2.24 | 2.00 |

The large quantity of ash in these cases is due to the admixture of earthy matters for the purpose of drying up and rendering portable the animal matter; and though this has not been done in the most suitable manner, the value of the manure is about five times as great as that of good farmyard manure.

Receipts and Good Things.

A "farmer's wife" sent the following good things to the *Rural New Yorker*, from which journal we copy them:—

Crackers.—Three quarts flour, 1 cup of butter, 1 pint water, 1 tablespoon salt. Pound until the dough snaps.

Another.—One pint of cold water, 1 teacup of lard, a little salt, 2 teaspoons of soda (or saleratus)—dissolved in a little vinegar; work in flour with your hands until quite hard; bake in a quick oven.

Doughnuts.—Take 7 coffee cups of bread dough when light, mix into one and a half cups of melted lard, with one of sugar, and a teaspoonful of saleratus; when it has again become light, roll it out, cut into what shape you please, and boil in hot lard. To succeed well, the dough should be mixed with milk.

A very Nice Fruit Cake.—One pound sugar, half a pound of butter, 4 eggs, 1 teacup of sweet milk, $3\frac{1}{2}$ cups of flour, 1 teaspoon of saleratus, nutmeg, cinnamon and cloves—as many raisins as you can afford.

Cup Cake.—Five cups of sifted flour, 2½ cups of white sugar, 6 eggs, 1 cup of butter, 1 of sour cream, 1 teaspoon of soda, nutmeg. If sweet milk is used instead of sour cream, put in two teaspoons of cream of tartar.

Hard Gingerbread.—Two cups of molasses, 1 of buttermilk, 8 tablespoons of melted lard or butter, 4 teaspoons of saleratus, 6 of ginger, a little salt, flour enough to roll (not very hard.)

Cinnamon Cakes.—One cup of sugar, 1 of molasses, 1 of butter, 1 tablespoon of ginger, 1 of cinnamon, 1 of saleratus, dissolved in half a cup water—flour enough to roll; to be rolled very thin and cut in round cakes.

Cookies.—Two cups of butter, 2½ of sugar, 4 eggs, half a teaspoonful of saleratus, caraway seed, flour enough to roll—made very thin.

Cream Cookies.—Two eggs, 2 cups of sugar, half a cup of butter, half a cup of sour cream, 1 teaspoon of saleratus, caraway seed, 2 teaspoons cream of tartar—flour enough to roll.

These recipes I have used for some time, and find none better. If persons who try

them do not succeed, they must blame themselves alone, if they have good material.

Pruning Apple Trees.

Now, don't, kind reader turn up your nose, because your theory differs from mine. What does the doctor do when he amputates a leg! O, he dresses it carefully as possible. Very well. So do I dress a limb of a tree after it is sawed off, and common sense requires it as much in one case as in the other. But I find it pleasant, as well as convenient, on a leisure day to go out and trim off the shoots and dead branches, and when a warm day comes in spring; I go all over the orchard with a ball of grafting wax, or some shellac dissolved in alcohol, and cover every wound. If you are not willing to do this, then don't prune till the leaves are set, or, which is, perhaps better, till September or October, which with me is a very busy season. I see where I have practised pruning and dressing in years past, as I have described, that the bark is lively, and the healing process is going on all around the wound, a point of the greatest importance. My theory on this subject, is to take care and dress your wounds, make them when you will.—*Cor. N. E. Farmer.*

Plant your Potatoes Early.

Let those who are not yet satisfied that this is a good rule, plant a few rows or a small patch as soon as the soil is dry enough to work well, and the balance of the land intended for this crop either all at once a few weeks afterwards, or in portions at intervals of a week or so between each planting. Of each planting let a square rod or some other area or measure be taken, and let the result at harvest-time, both as to quantity and quality, be carefully noted. The result, we are confident, will prove interesting and instructive, not only to those who try the experiment, but also to many who, like ourselves, would be glad to have a report of the experiments and the results given to the public through this paper.

Until such experiments are made, and the results made publicly known, those who endeavor to conform their practice to be best ascertained facts, or best established rules, will plant early. Experiments have already been made in sufficient number and with sufficient accuracy, to make it almost a settled matter that potatoes planted as soon as the soil is mellow and dry, will yield a more abundant and sounder crop than the same kind of potatoes on the same or similar soil, when planted 10, 20, or 30 days later. The most satisfactory of such experiments which have been reported to the public are those of Mr. H. H. Eastman, of Marshall, Oneida, Co., N. Y., a summary of whose various experiments in potato culture may be found in the vols. of *The Country Gentleman*, and *The Cultivator* for 1855. For the sake of those who have not these vols. at

hand, we may say that to test the question of early, medium, and late planting, one plot was planted, in 1852, on the 18th of May, another on the 23d of May, and another on June 8th, and these plots yielded respectively at the rate of 142, 131, and 100 bushels per acre. The experiment was again tried in 1853, and resulted as before in favor of early planting. While those planted May 9th yielded 104 bushels, those planted May 30th gave but 70 bushels, and those planted as late as June 18th gave only 45 bushels per acre.

Previously to the invasion of the rot, potatoes were generally planted in June; but the old rule must now be laid aside, and the new one at the head of this article substituted in its place, in order to secure the best crops.—*Country Gentleman.*

GOOD AND ILL TREATMENT OF HENS.

—Hens, we find, are like soils and some other things with which the farmer has to do,—they treat him very much as he treats them. If he treat them in a liberal and generous manner, they make him quite liberal and generous returns. If he neglect them, or provide for them but sparingly, the returns they make will be correspondingly scanty.

All this one may be aware of, may readily assent to, and yet may practice as if repeated experiences had never confirmed its truth. We have long been firmly persuaded of the truth of the proposition with which we began, viz., that hens will furnish eggs very nearly in the same measure that they are furnished with food, lime, &c. &c.; but this truth never made the deep impression which it did when some facts giving evidence and illustration of it were brought under more immediate observation. The hired man at one place was working and conversing with the hired man on another farm, when one of them happened to mention something in regard to the nine eggs which he had every day. The other said that at the house where he lived they had scarcely had an egg all winter.

This great difference in two neighboring flocks having attracted our attention we made some inquiries as to the modes of management, and in the difference in that respect we found a complete explanation of the difference between half of a whole flock laying every day through the winter, and another flock of the same breeds furnishing hardly a single layer. In almost every particular in the management of these two neighboring flocks there was a very marked contrast. For example, while the one had only a small space in the upper part of a pretty open stable into which both wind and snow could find their way quite freely, the other flock had their roosting place in a warm, well sheltered barn-cellar which was open to the south, and closed on all the other sides. And while the one was thus much better defended against the winds and cold of wintry nights than the other, there was as great a

contrast in their opportunities for comfort during the *day*. While the one had nowhere to scratch or exercise during the long months while the earth was covered with snow, save the top of the manure heap, or the inside of the stable while the cattle were out of it during the day, the other flock had abundance of room and chance to scratch and exercise in lots of lime and gravel and leached ashes with which the floor of the open cellar was kept well supplied. Then, again, while the one never had a drop of drink of any kind, the other had water, and milk with pieces of buckwheat cakes, potatoes, and other fragments from the table staked in it, every day. And, as to food, while the one had only a small portion of corn once a day, the other had a great variety, and that regularly twice a day. To provide the fowls of the latter flock with lime so essential to the formation of shells, they were supplied with a shovelful every day from a large box of lime, sand and gravel, which had been provided for this purpose, before winter, and also with eggshells pounded and mixed with other fragments from the table. The reason why eggs were scarce in the one case and plenty in the other, was obvious enough when these items in treatment were made known.—*Country Gentleman*.

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VALUE OF URINE.—An experiment which goes far towards demonstrating the great value and efficacy of urine when used manurally, was published not long since in an English paper. We present it in the author's own words:—

A box of fine white sand was exposed to a heat sufficiently intense to dissipate its moisture and destroy every particle of organized matter it contained. It was then placed in a dry situation, and some seeds of the Egyptian wheat being planted in it, the whole mass was saturated with urine in a state of incipient putridity. The result of the experiment was that the wheat vegetated—grew rapidly through the season, and in autumn, rather before the maturation of the same grain in the open fields, produced a remarkable yield of fine and well developed grain. The application of the liquid was made weekly during the season."

Such facts have an important significance, and should be recorded and carefully pondered by the agriculturist.

Windham, Me., April, 1856.

[In our last we gave a method for saving and applying urine and other liquid manures. The above experiment is an excellent evidence of their efficiency in the growth of wheat. Let any farmer who is sowing wheat on land not likely to yield a large crop, try the method on a large scale, by weekly, or as often as convenient, going over every *alternate* ridge with a watering cart and liquid manure. We shall be glad

in autumn to have a statement of the yield of two neighbouring ridges; and we think we can venture an assurance that the experiment will be found to pay.]

—:—
THICK AND THIN SEEDING OATS.—Last year about the close of April, I sowed 12½ acres to oats. Eight acres had been planted to corn the year previous, and one-half of it manured with stable manure, which was plowed under in the fall. Of the remainder, 2 acres were after oats, and 2½ clover sod, broken up just before sowing. The whole was plowed from nine to ten inches deep with a Michigan double plow, and in good though not extra order.

The oats I sowed broadcast at the rate of 2½ bushels per acre. We harvested 740 bushels by measure, and I doubt very much if a larger yield would have been the result had less seed been sown. The straw was large and the oats on the sward, which was the richest part of the land, lay flat on the ground. For the field, which is the poorest on the farm, I think the crop an extra good one. Your correspondent "B," from less than 2 bushels harvested about 40 per acre—we, from 2½, nearly 60. His experiment does not prove the theory of thin seeding true; nor does mine disprove it. There are two sides to the question.—*Rural New Yorker*.

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Meteorology.

The philosophic minded Bacon has said that it is the province of man to interpret nature. There is certainly no more worthy study for the reflective mind than to trace the laws which guide the ever-varying changes of the atmosphere. To the agriculturist, these are peculiarly interesting, as it is upon climatic conditions, no less than those of the soil, that the success of any cultivation is dependent. With an extended knowledge of the climate conditions of any district, it is doubtless possible to so select varieties of any of our cultivated plants, as to extend the region which is at present deemed its profitable limit of cultivation. A better acquaintance with the character of the climate would prevent most of those mistakes which are daily committed by agriculturists, who, familiar with the system of cultivation of one district, and believing it equally applicable to others, make the experiment, and find themselves disappointed. Hence failure followed by loss, which, when persevered in, almost invariably leads to an irrecoverable sinking of the tenant's capital. If the climatic laws were better understood, the peculiar system of cultivation pursued in a district—doubtless the result of the experience of many, and the gatherings, as it were, of success out of numerous failures—could be explained, and suggestions made for the further development or improvement of the systems. The knowledge thus obtained

could be rendered available in introducing improved systems of culture to any district. Climatic causes operate with equal, if not greater power, upon animal life. That remarkably correct observer of Nature's phenomena, Shakespere, makes frequent reference to this.

To understand the language, and to interpret truthfully the physical combinations which produce wind and rain, vapour and cloud, heat and cold, it is necessary to collect fact after fact, and, as it were, letter after letter, to form syllables, and by this gradual process, acquire that elementary information, which will enable us to read the volume which is spread before us. But to attain to success, a certain uniformity must be observed, and the collecting of data must be undertaken in a methodical and well arranged plan. Not only must uniformity be observed in the noting, but the instruments employed must be similar in construction, placed under the same circumstances, and, as far as possible, without any disturbing causes.

In the *Journal d'Agriculture Pratique*, Paris, there are published monthly the meteorological observations made over the various parts of France, which seem to embrace a wide area. The system which is there followed, appears to us very complete, and with a slight change might be advantageously adopted by observers in this country. It would facilitate observations, were printed schedules upon this plan issued. The first column contains the date of the month, the second the changes of the moon, and for each class of observations, there are separate tables, each being provided with the same two introductory columns. The fall of rain is intimated by decimal centimètres. The sunlight is marked by dots; these, when bright, show uninterrupted sunlight; one-half obscure represents partial sunlight; and dark, total obscuration. Thunder storms are added to these columns—a circular figure, with two diagonal lines, representing storms. The direction of the wind is indicated by letters, corresponding to the initial letters of the direction. The thermometer is marked by the two extremes. At the end of these tables are given notes containing any remarkable phenomenon which has been observed, and the editor adds one or two tables, showing the extremes of temperature, and some other points deducible from the returns. Those interested in the subject, can examine these tables as published in the French Journal, and if the Association is to take steps to carry out a system of observation over the whole of Scotland, some such method as has been indicated above, might be resolved on. In the meantime, we would recommend to agriculturists to take more interest in the successful prosecution of meteorological observations than has hitherto been bestowed on this department of natural philosophy.—*North British Agriculturist*.

TO DESTROY BARK LICE.

Take strong lye, and put in it as much salt as will dissolve, and wash the bark of the trees with it by means of a brush or swab. It will kill the lice, and they will soon rub off. The best time to apply it is in the spring before the buds start, as it will kill the young leaves. It will answer any time, if kept from the leaves.

[Another way is to scrape the bark, then wash with lime, and dig in around the roots a quantity of well rotted manure, to give a vigorous growth. We have found this treatment capable of reviving trees apparently nearly dead from the spread of the bark lice.]

NEW ENGLAND FARMERS' WIVES.

Perhaps the following lesson may not be useless in Canada:—

Thrifty beings they are, and in their anxiety to do their whole duty by hard-working husbands, with a self-denial too little appreciated even by its objects, they wear their lives away in endless and pitiless drudgery. Pride is nearly as much concerned in the matter, as affection. The pride of the housekeeper—which in this overflowing land loves to provide an actually wasteful profusion of substantial and “good things” for a family of children and farm-assistants. And the pride of bearing on one pair of shoulders the burden of two or three, and at the same time, of doing everything a little better than anybody else *could* do it. This is the peculiar pride of an American, whether man or woman—to *do*, keep doing, and do *well*. Under its pressure many a Yankee mother, amidst the rugged hills of her native land, many a country house-wife in the fertile districts of the middle States, the wife of many a sickly pioneer in the western country, has consumed her best years, bearing all things and complaining never. There is something noble in the self-sacrifice. We would not discourage economy nor deprecate labour. But let the mother of a family remember the duties she owes herself and her children, as well as the tasks expected at her hands. Let the husband be careful to lighten and alleviate them, Let him not compel her to find the straw, as well as fill to full tale of brick.

Agriculture in Lower Canada.

If any proof was required to convince us that Lower Canada was capable of producing excellent wheat, barley, oats, peas, beans, timothy seed, &c., the Exhibition of these grains on the 25th of March, in the Bonsecours Market, at the instance of the County of Montreal Agricultural Society, would demonstrate the fact in the most satisfactory manner. The samples, which, I believe, consisted of about 20 bushels each, were numerous, and I may confidently say, there never has been a better show of these grains

in this country, than upon that occasion. There was no wheat exhibited except spring three months' wheat, of the variety Fife and Black Sea, all of which were of very superior quality, clean and unmixed. Of course, spring wheat could not be expected to compete in appearance with choice samples of fall wheat; but with this exception, I have no hesitation in stating that the grain of every description exhibited on the occasion alluded to, would compete favorably, and, I have no doubt, successfully, with any samples of the same varieties that could be produced in Canada West, or in the United States. I have had opportunities of seeing exhibitions of grain in both countries, and, as I have stated, with the exception of fall wheat, I have no doubt Lower Canada can compete successfully with any part of North America in the production of any other grain, and also in hay, and every variety of root crops. I admired particularly the samples exhibited, for their perfect cleanness, and appearance of being unmixed. The Montreal Agricultural Society are entitled to the thanks of the agriculturists for this judicious move, and I hope they will have an annual exhibition. The premiums paid were very liberal, and amounted to about £45. The greater part of the grain was the production of the Island of Montreal, though the first prize wheat was from the Isle Jesus. I allude to this exhibition of grain as an encouragement to agriculturists to introduce improvements in their system of husbandry, where it may be required, as it must be in every instance where there is not favourable and remunerating results obtained from farming. We may be assured, if we take the trouble to enquire, that the excellent samples of grain exhibited at Montreal on the 25th of March, was not produced by chance, but that in every instance, good samples resulted from skillful and judicious cultivation and management; and any farmer who desires to produce similar samples of good grain, will be certain to succeed, provided he adopts the same skillful and judicious cultivation and management of his land. These are evident facts that cannot be controverted. The successful agriculturist has the same climate, and generally no better soil than the most unsuccessful agriculturist, and, therefore, the very different results obtained by each from their land and labour, results solely from the cultivation and management of the soil. Farmers need not expect to excuse their want of success, by complaining of insufficient capital, &c. I have known many persons here, who, with scarcely any capital to commence with, have succeeded in making themselves very comfortable, if not independent, and altogether by their skill, industry, and good management in agriculture. Any excuses for bad management in the practice of agriculture should not be admissible, while better management is possible. It is quite absurd for a farmer, when he witnesses the successful practice of another farmer, to suppose that he could not

adopt the same practice. The feeling that should animate and predominate with every agriculturist ought to be a desire to equal, if not excel, those farmers who practice a judicious and successful system amongst them. I cannot understand why any farmer should rest contented with raising only one-third or one-half the produce, which he sees another farmer can raise with the same climate, and on soil that is not naturally better than his own. If I see my neighbour's land well drained, well ploughed, sufficiently manured, good crops growing upon it, free from all weeds, live stock of fair quality, provided with sufficient pasture—while my own land is not well drained, is not ploughed in the best manner, has not an adequate and regular supply of manure judiciously applied, my crops not very abundant or clean of weeds, my live stock not of good quality, or sufficient pasturage, surely I cannot be at any loss to account for the different results obtained by my neighbour and myself. Hence it would appear, that there is not in reality any excuse that our system of agriculture is not generally better than it is. I am sorry to be obliged to admit, that what we should understand as good farming, is the exception, and not the rule in Lower Canada; nevertheless, there are sufficient specimens or examples of good farming in every district, to show what it is, for our instruction, and this removes all ground for excuse for continuing a defective system of husbandry, because we can see before us continually, the practice, and the results obtained from good husbandry to encourage us to follow the example. It may probably surprise farmers, when I tell them, that the productions which are obtained from the most defective system of husbandry, and the least expenditure of labour and capital, costs the farmer more per bushel, than the production which results from the most perfect system of agriculture, and the ample but necessary, and judicious expenditure of capital and labour, practised in Canada. The farmer who is able to raise a produce of 30 bushels of wheat per acre, and of other crops in the same proportion, can do this at less expense per bushel, than it will cost the farmer per bushel, that will only raise 8 or 10 bushels of wheat per acre, and of other crops in proportion. If we compare the average produce obtained per acre by one of our best farmers, with the average per acre obtained by the great bulk of Canadian agriculturists, who practice a defective system, we shall be able to form some estimate of the great advantage of a good system, and the very great loss to the country generally, which results from a defective system of agriculture. I would be the last who would recommend a large and extravagant expenditure of labour and capital in agriculture, because I know that beyond a certain limit it would not be expedient or profitable to do so. In fact, capital should only be applied as far as its employment *lowers the cost* of agricultural production. This is the grand

secret of all improvement, and where the cost of production is not actually diminished in proportion to the expenditure, I would not consider it an improvement in agriculture. The skilful agriculturalist, who employs capital or labour judiciously in the cultivation of land, is sure to diminish the cost of production, or as I before observed, he will raise a quantity of produce from his land and labour that will not cost him near so much in proportion to quantity, as it will cost the farmer, in proportion to quantity, who raises the least produce. In the present circumstances of Canada, if we desire to maintain the credit of the country, and the high character we have attained, the improvement of agriculture is no longer a matter of choice or fancy, but a matter of comparative necessity. All the great things that have been done for us, and the fine things that have been said of us, will be of little avail, if we do not help ourselves, by making a good use of what has been done for the encouragement of agriculture, and thus proving that we are not unworthy of the high character we have attained with the world. We should endeavour to come up to the full standard of perfection in our system of agriculture, when we have abundant examples of a system that is very near perfection. I think I am perfectly justified in stating, that upon a well managed agricultural establishment, of which there are a great many to be seen in the British Isles, if not in Canada, the practical art of agriculture, in every department, including the management of land, the live stock, and the implements employed, are as well understood, and brought to as great perfection, as is the produce of any other art or manufacture practised in Britain. The improvements in agriculture are decidedly good, both as regards the increase of quantity, and the improvement of quality,—and this is more than can be said in relation to all other arts and manufactures. There is no manufacture practised by man that can compare with an agricultural manufactory that is well conducted, in the excellence and perfection of its productions. There is no deceit or deception in a fine animal, or in the productions of a well managed field or garden. I have never seen any of the products of manufacture brought to so great perfection, and so free from deterioration, as the products obtained from a perfect system of agriculture,—where the animals of every variety are of perfect form, and adaptation for their several uses,—and the products of the field, of the finest quality, without any deteriorating mixture. We cannot bring our oxen to the size of elephants, nor would it be advisable if we could do so,—nor can we bring the grain of wheat to be the size of a horse bean, and I believe it would not be an improvement if we did. Animals, and field productions are, however, brought to a high degree of excellence, if not to actual perfection, and if this can be accomplished by many agriculturalists, I cannot see why it should not be possible to all,

who would employ the same means, with a favorable climate, and a naturally good soil. I mention these circumstances because agriculturalists are often taunted as being behind this age of progress, in the improvement of their art. No doubt many farmers are very backward, indeed, in adopting the necessary improvements in their system of husbandry; but I am persuaded, nevertheless, that agriculture in numerous instances, has attained greater perfection than any other manufacture that we are acquainted with. This is an important point achieved, in favour of general improvement. And it is no wonder that agriculture should have been brought to this great perfection. In the British Isles, the best educated and the most wealthy of the community are engaged in agriculture, and connecting science with practice, work it out in the most judicious and successful manner; and thus, by their capital, experiments, and example, instruct and encourage tenant farmers to adopt improvements that are proved to be advantageous. This is a proof of the vast importance of education to agricultural improvement. Without any wish to give the slightest offence, I may submit that uneducated men certainly may be induced to adopt improvements which they can see practised successfully and profitably before them; but improvements in agriculture seldom originate with them, though they may work them out when they have a good example before them. Agriculture is a science that can be best explained by actual experiments in the field, and it would not have attained to anything approaching its present perfection in Britain, were it not for the lead taken by the wealthy and educated, by having these experiments judiciously made, both in the field, and in the management of their flocks and herds. It is from these circumstances only that agriculture, in all its branches, is brought to greater perfection in Britain than in any other country, so that it has become the admiration and example of all the civilized nations of the earth.

The subject of education has been fully discussed lately in the Legislative Assembly; but I was surprised to see no allusion to the necessity that agricultural instruction should be directly provided for in the system proposed. No wonder our youth should not estimate very highly the occupation of the agriculturalist, or regard it as a respectable profession. He perceives from his childhood that education is highly prized, and considered actually necessary for the successful practice of any respectable profession, or even handicraft trade; but for the occupation of the farmer it does not appear to be an essential qualification, and he therefore despises such a profession, as only fitted for the most ignorant and illiterate. I have frequently endeavored to show the injurious effect on agriculture that the youth of the country, who do receive education, are more disposed to other professions than to be agriculturalists. This I attribute partly to the

course of education they receive, wherein the science and practice of agriculture is never mentioned or alluded to, no more than if there was no such science to be learned; also, to the circumstance of witnessing in numerous instances the defective practice, and unfavorable and unprofitable results obtained from agriculture. All these causes operate unfavorably upon educated young men, and lead them to suppose that farming is only fit for the ignorant and laborious, or for the wealthy classes, who engage in it for the pleasures and amusements of a country life, and work the farm by hired laborers. It must appear strange that, although five-sixths of our population have to make their living by agriculture, there is no direct means provided for instructing them in the science and art of agriculture, except what they may learn from those who are not the most capable of instructing them. Every other profession and occupation has a suitable education provided, that has direct reference to their future pursuits, while agriculture is denied any similar advantage. Schools for the rural population should at least be furnished with standard and suitable books on the science and art of agriculture, and these books should form a part of the study of every male scholar. There are excellent Agricultural Catechisms, and other books on the subject might be selected which would be plain and easy to comprehend. At all events, such books would convince the scholars that there were means of teaching the science and art of agriculture as well as any other art or profession, and it might have the effect of giving many a taste for agriculture, and a desire to understand it thoroughly, which they are never likely to feel, if their education has no reference whatever to it. We should also have properly qualified persons to deliver practical lectures on the subject at all our colleges and schools. However agriculture may be despised and neglected, it is an occupation, above all others, which we cannot do without, and therefore it will be for the general benefit of the community that it should be understood and practiced in the most perfect manner that is possible; and if we are in earnest in our desires that our agriculture should improve and flourish, we must give it importance and respectability by a direct education for it at our schools and colleges. Of course the properly educated can duly appreciate the importance and respectability of agriculture, and do not require to be told that it is the most important and most honorable, because it is the most useful and necessary of any art or profession practised by mankind, and is more particularly dependent for successful results upon the goodness of the Creator,—after man has executed properly the part which falls to his lot to perform.

I have now endeavored to give a truthful picture of the present state of agriculture in Lower Canada, and offered suggestions for its amelioration. Many parties who take

the trouble to read my communication may think I have made matters appear in a more unfavorable light than they are in reality, and I wish sincerely that I may have done so, and there will be less necessity for improvement. I have had frequent opportunities of knowing the country, and the stock and crops of the farmers, and could not help imagining how much room there was for improvement, and what a great advantage it would be to make the required improvements. Throughout the Valley of the St. Lawrence, and in many other sections of the country, the general quality of the land, and its adaptation to agriculture cannot be surpassed in any part of North America, and there cannot be any doubt whatever that a large proportion of this land is not managed to the best advantage, and does not produce anything near what it is capable of producing. We are most anxious for the extension of commerce and trade, and I advocate the improvement of agriculture as the only certain means to promote and support commerce and trade, by the increased annual produce it would create. Traffic in foreign productions will never augment to any great extent the general wealth of a country, and we may assure ourselves that the wealth of Canada will chiefly depend upon her own productions, obtained from her land. It is these productions which directly and indirectly provide the means for paying almost all the claims against the country, whether for revenue, or imported goods. From any other source except the land, we need not expect much assistance in this country under existing circumstances. If this proposition be admitted, and I think it cannot be disputed, how much does it behoove every lover of his country to lend his aid, and every influence he can exercise, in promoting improvements in which all are interested. I wish it was in my power to induce others to view this subject in the same light I do. If it was a political subject, or any other on which I might be mistaken, I would not presume to have kept it constantly before the public, as I have done, for the last quarter of a century. It may be replied to me, that if my views, or suggestion I presume to offer, were considered of that importance which I attach to them, they would be immediately acted upon by those who have the power to do all that is necessary for agricultural improvement.

We have many able men in Canada, who could do wonders for agriculture, if they would only be persuaded that they could not devote their talents or eloquence to any subject of so much importance to the whole Canadian community. Perhaps it may not be thought offensive, if I express my regret that when reading the debates in our Provincial Parliament, and admiring the eloquence of many of the speeches reported, I scarcely ever meet with one sentence that has any reference to agriculture, or its state, and requirements. As the humble advocate for agriculture, it would be a most gratify-

ing "sign of the times" if I could only see a small portion of the eloquence expended on other subjects given to the cause of agriculture, and to recommend its improvement to the rural population. If this population was only to learn, that their representatives in Parliament occupied themselves with the consideration of the interests of agriculture, and made eloquent speeches upon its vast importance, and the advantages to be derived from its improvement to the uttermost, we should soon see a change for the better, and the occupation of the farmer regarded with more favour. Our Legislature may certainly have numerous interests to occupy their attention to, but I humbly conceive that there is not one of these interests, that is to be compared in importance with that of agriculture, which is the occupation of the great majority of those who have elected the members of the Legislative Assembly—and as their representatives, agriculture is entitled to every possible attention to its interests so far as they can be promoted, without injustice to any other interests.

I cannot better or more appropriately conclude this communication, than by copying a few lines from a late number of that excellent newspaper—*The Mark Lane Express*. Farmers I know are generally disposed to feel profound gratitude to the CREATOR for His never failing goodness, in the annual increase of their field, their flocks, and their herds—which has continued from the creation of man, to the present time—and they may with perfect confidence rely upon a continuance of the same goodness.—“We should feel that we had very inadequately noticed this period of the year if we neglected to remind our readers, of the agricultural class, of the source from which they derive their prosperity, and the power on whom it depends. The farmer above all other men, must feel how helpless he is after all his efforts to secure his own welfare, or insure the safety of his crops. A blast of wind, a tempest, vegetable pestilence, may in one short day lay his hopes prostrate, and defeat his best arranged plans. On the other hand, gratitude for the past and hope for the future, ought to fill every heart, and constitute a motive for increased efforts, and enterprise. Whilst with humility we should recognize the hand of a superintending Providence, we should consider who it is that has given us faculties and powers for use, and not for inaction or abuse. That we should both “plough and sow in hope” as if all depended upon ourselves, leaving the event to Him who hath assured us that “while the earth remaineth, seed time and harvest, day and night, summer and winter, shall not cease.”

What more can I say, or rather ought I to say. I may have been too bold, if on such a subject, I could be too bold. However, if I have said anything offensive I hope I may be pardoned, because my only motive is the good of my country. WM. EVANS.

Cote St. Paul, May, 1856.

Toronto Horticultural and Agricultural Club.

KITCHEN GARDEN.

The second regular meeting for discussion of this Club was held on Tuesday, 18th March. There was a moderate attendance of gentlemen present; the President, Mr. Allan, and several other leading members being unfortunately absent from unavoidable causes. Mr. James Fleming, one of the Vice-Presidents, occupied the chair. The subject for discussion, “The importance of Kitchen Gardens as an appendage to Farm Houses” was introduced by Mr. Mundie, Landscape Gardener, of this city, whose interesting papers we regret we cannot insert in full. Our space will enable us to give the *practical* directions, only. The introductory remarks on the value and importance of the garden and its products, as well as the concluding arguments by which Mr. M. enforced his theme, were exceedingly well put. Those who may wish to see the entire paper will find it in the *Colonist* of the 22nd March.

A kitchen garden of the present day, may be defined as a piece of land fenced in and set apart for the growth of vegetables, roots, herbs, and small fruits for cooking or kitchen purposes as the name of the garden implies. The term small fruits, comprehends the various sorts of gooseberries, currants, raspberries, strawberries, cranberries, &c.

In choosing a piece of land to lay out a kitchen garden, the situation should not be very flat nor very elevated. In very low situations, the moisture of the atmosphere renders the crops of all sorts more liable to be injured by frost, and on very high land the cutting winds of spring and early summer are also injurious; the blossom and young fruit are often damaged, as also the leaves of tender vegetables and plants of all descriptions, when in a young and growing state.

A piece of moderately light land, sloping very gently towards the South or South-East, avoiding the extremes of situation mentioned above, will under good management give every satisfaction. A point to the East will give increased earliness.

The farmers', or country kitchen garden, (and of which I am more particularly speaking) should be near the dwelling house, and should occupy a position if otherwise applicable, partly between the dwelling and barn or stock yard. If so situated; it will be convenient to manure, convenient for gathering vegetables at all times, and also convenient to cultivate, allowing every half hour to be employed to the best advantage.

The size of the garden should be regulated according to the wants of the family; for a family of six persons, half an acre will not be too much, and for any larger number the ground may be increased in proportion; always bearing in mind, that a small garden requiring to be crowded, is more difficult to keep than a larger space where there is room for proper regulation and rotation.

The shape of the garden may be adapted to existing circumstances, but if otherwise applicable, a quadrangular, or an oblong square can be cropped and cultivated to more advantage than irregular forms, which should only be adopted in case of necessity, either from the land or other difficulties which cannot be controlled.

The fencing is better to be close, to the North side, and partly so on the East and West ends; a shelter of trees outside the garden fence on the North side, North-East, and North-West corners, should be raised as soon as possible. The different kinds of evergreen trees (such as the balsam fir, the Norway spruce, the hemlock spruce, and the different varieties of cedar) will best answer the purpose at least those trees next the fence should be of this kind. They give most shelter at the time when it is most wanted, and their roots and branches are not so troublesome in undermining or overhanging the borders, as deciduous trees, or those trees which throw their leaves every season.

The first step towards the cultivation of the space which may thus have been set apart and fenced for a kitchen garden, is, to drain it thoroughly; some situations and soils there are which may not require the operation, but those are rare exceptions; and as a general rule, mostly all soils will be benefited by draining. The extent to which this may be necessary, must be determined by the nature of the soil to be operated upon; however, there is no fear of overdoing, as the more drains there are put in, the nearer perfection will the garden be; and on no account should draining be neglected when the garden is laying out, as if once it is planted and furnished, draining cannot be done so well; nor can it be done at all, without undoing and destroying much that may have been already accomplished.

Having selected a point of outlet for the drainage water of some of the lowest corners, and from whence a sufficient fall or run can be got to carry it off; a main drain should then be led along the lowest side, to receive water from the lateral or branch drains, which should be so laid out as to catch or intercept the natural sug or trituration of the water in the land, that is always going on from the higher to the lower levels. The drains should be extended through the border of the shelter trees on the outside of the fence, which being on the North side of the garden will consequently be the highest, and the point from whence the water proceeds.

In most cases the drains will answer every purpose intended, if dug about three feet in depth; finishing the bottom to a graded slope or run, in the direction to which the land falls. The best materials for permanency are stone, or draining tiles; but no one should be deterred from proceeding because he cannot obtain any one material, as although the materials above mentioned are the most durable, yet good substitutes

may be found in either fence rails or brush wood, any of which if well put in and carefully covered with a tough green turf (as all drainage for trituration should be) will drain the land effectually for a period of from forty to fifty years.

The whole garden and tree border outside, should then be subtrrenched, to a depth of not less than two feet; preserving fifteen inches in depth of the original surface soil upon the finished surface; the subsoil below this fifteen inches should be dug and loosened to the desired depth, but left in the bottom of the trench (hence the term subtrrenching, and fifteen inches of the soil from the surface of the next trench thrown on the top of the loosened subsoil, and so on until the whole is finished.

The benefits of this subtrrenching are manifold; it allows the superabundant water to percolate easily and quickly through the soil to the drains, leaving a deeply loosened porous body of soil fully saturated with moisture, but never to stagnate or get sour. It allows a perfectly free circulation of air heat, and other atmospheric influences, to pass into and through the soil, more moisture is retained and held in solution during dry weather; the evaporated moisture from the bottom (which in shallow soils is brought to the surface and absorbed into the atmosphere) being absorbed and retained by the depth of soil, in its passage upward, a small surplus only passing off by slow degrees into the atmosphere.

The roots of all plants and vegetables penetrate this loose soil to such a depth, as that even during long continuances of dry weather, they are seldom or never what we would call burnt or scorched; and having a greater range of pasture, they are much increased in size and value. But this is not all, their properties are also quite different; as from being produced upon a soil perfectly drained and ventilated (so to speak) and which allows all the organic elements free scope to play a part in their growth and maturity, we may be well assured that they are superior to the productions of an undrained, untrrenched, sour soil, as a man who feeds upon good, wholesome, well prepared food, and lodges in a well drained, well ventilated house, taking sufficient exercise, is superior to a man who lives upon inert matter, and lodges in an ill drained, ill ventilated house, taking little or no exercise. (The cultivation of the surface represents exercise.)

When the trenching is finished and the surface brought to a graded level, the walks should next be marked out. Cross walks may be put to divide into convenient sized quarters, but one main walk all round the garden, at about from nine to twelve feet from the fence inside is essentially necessary, because the borders next the fence being on some sides the warmest, and on others the shadiest, should be occupied with all kinds of small early and late crops, to cultivate and to gather which, it is necessary

to have ready access at all times from a main walk.

Gooseberries, currants, and raspberries, with probably a dwarf pear in each corner (to break the sameness which would otherwise prevail) should occupy a border of about five feet wide, round each quarter, the bushes to be set in one line, about six feet apart, along the centre of this border; the black currant and gooseberry in the shadiest places. Raspberries should have a situation open to the sun most part of the day, as otherwise the wood will be winter killed. They may be planted three feet apart in line. Strawberries will do best in one of the open quarters, they should be renewed by re-planting every second or third year, and always on a fresh quarter. Rhubarb and asparagus may be advantageously planted in two exposures, the one in the sun, and the other in the shade; by attending to this, the season of these most excellent vegetables will be prolonged. The ground for those should be made very rich with old and well rotted manure; to be right, the manure and soil should be half and half.

I would not recommend planting flowers along the fruit borders, as they draw off the nourishment from and deteriorate the quality of the fruit, at the same time, from their tendency to nourish weeds and to harbour the seeds of weeds, they are the cause of the bushes and edgings being so over-run, as perhaps from a temporary neglect, to get beyond all possibility of ever being cleaned. The walks of a garden of half an acre should be about four feet six inches wide, and so in proportion to larger gardens. The soil from the walks to the depth of from six to eight inches should be thrown upon the borders and quarters of the garden and the space so excavated, filled in with broken stone and gravel on the top, or with the best hard material for making walks, which may be within the reach and means of the owner.

Good cultivation includes not only the entire extirpation of all weeds as soon as they appear, but also, (and more especially in dry weather,) frequent stirrings of the whole of the surface of the ground, in the borders, and among the various crops as they advance in growth. If this be attended to, it will act largely as a preventive of weeds germinating, and also open the surface of the soil, encouraging the circulation of the air, as before spoken of, to proceed more freely, which is of essential benefit to all growing crops.

In some measure corresponding to these preliminary remarks, there must be an amount of preparatory labour before a kitchen garden can be expected to be either satisfactory or productive, and to any one not acquainted with the operations thus described, especially if they view the whole of the various improvements at once, garden making on this standard will appear to be a formidable business; but by directing the attention to each part of the work separately, and proceeding that at all convenient times until

finished in the best manner, and so on in succession proceeding systematically, I do not hesitate to say, (and that even to a farmer whose hands are sometimes pretty full,) that the work may be accomplished, without much inconvenience, and all the more easily from knowing, that by doing it in this thorough manner successful results are certain.

From a good kitchen garden attached to a farmer's or other country house, and having been prepared as above stated, the owner with his family may enjoy a large portion of either fruit or vegetable diet every day in the year; but that can only be accomplished by carefully attending to the sowing and planting, cultivating and gathering, storing and preserving, all the various productions at their proper times and seasons; yet, when this is gone about systematically (proper conveniences being provided) it will rather result in being, in a great measure, a pleasure than a toil.

As early as the end of April or at furthest in May, asparagus, rhubarb, winter spinach, lettuce, radishes, and top onions, may be gathered in profusion. When at the same time, from the former years stores may be supplied, turnips, carrots, beets, onions, parsnips, kidney beans, and cabbages, if they had been preserved in pits, with dried parsley and all the varieties of seasoning herbs such as mint, sage, hyssop, marjoram thyme, savory, &c.; and also preserved fruits and celery, with the various species of squash, and gourds will have been in use.

I have mentioned the months of April and May, because most people know that in those two months vegetables are scarcer than during any other period of the year; yet during those two months we have here a very good variety, all plain to be sure, but very valuable as an addition to a family diet: and I have taken particular care not to put down anything but what is quite easy and practicable to have at the season spoken of.

The saving effected from the addition of a plentiful supply of roots and vegetables to a family diet, will at the year's end be a very large item; as by that means, more of the products of the dairy and poultry yard, with flour and flesh meat of all kinds may be marketed; but the saving in point of economy is only a small portion of the benefit resulting from a proper mixture of vegetables with the aliment of a family.

The numerous varieties offered for sale by gardeners and seedsmen, sometimes perplex the purchaser, and it often happens that the best are not chosen. The committee appointed to make the following list was composed of gentlemen well qualified for the purpose. Their names are Professors Croft and Buckland, and Messrs. Fleming, Mundie, Leslie and Gordon, practical gardeners:—

REPORT.

The Committee appointed at the meeting

of the Club, to make out a list of the most useful and best kinds of vegetable seeds, roots, and small fruits, (with their proper names), to be appended to Mr. Mundie's paper, have recommended the following varieties as being the most suitable for the purpose. They are all of the best kinds that are now in cultivation for general crops (taking their qualities and productiveness into account.)

They are placed in the order of their earliness, and also of their merit, and can be obtained from any regular seedsman or nurseryman by the names given in this list.

| Name. | Sort. |
|--|-------|
| <i>Asparagus</i> —Giant. | |
| <i>Kidney Bean</i> —Yellow Six Weeks. | |
| “ Red Specked. | |
| “ Scarlet Runners. | |
| <i>Beet Root</i> —Early Turnip rooted. | |
| “ Long Blood. | |
| <i>Cauliflower</i> —Early London. | |
| “ Late French. | |
| <i>Carrot</i> —Early Horn. | |
| “ Red Altringham. | |
| “ Long Orange. | |
| <i>Cabbage (summer)</i> —Early York (small.) | |
| “ “ Endfield Market. | |
| “ (autumn)—Shilling's Queen. | |
| “ “ Large York. | |
| “ (winter)—Quintal. | |
| “ “ Flat Dutch. | |
| “ “ Savoy Dwarf Curled. | |
| “ “ Red Dutch (pickling.) | |
| <i>Celery</i> —Red Solid. | |
| “ White Solid. | |
| <i>Cucumber</i> —Short Green. | |
| “ Long Green. | |
| <i>Lettuce</i> —Maltese. | |
| “ Victoria Cabbage. | |
| <i>Musk Melon</i> —Scarlet Flesh Cantelupe. | |
| “ Green “ Nutmeg. | |
| <i>Water Melon</i> —Long Island. | |
| <i>Onion</i> —Large Yellow. | |
| “ Red. | |
| <i>Capsicum</i> —Large Yellow. | |
| <i>Parsley</i> —Double Curled. | |
| <i>Parsnip</i> —Dutch Hollow Crowned. | |
| <i>Peas</i> —Early Kent. | |
| “ Blue Imperial. | |
| “ White Marrowfat. | |
| <i>Radishes</i> —Scarlet Short Top. | |
| “ Long Salmon. | |
| “ Red Turnip Rooted. | |
| “ White “ “ | |
| “ Black Spanish (for winter.) | |
| <i>Rhubarb</i> —Myatt's Victoria. | |
| “ “ Albert. | |
| <i>Squash</i> —Scolloped Bush Squash. | |
| “ Boston Summer. | |
| <i>Potatoes</i> —Early June. | |
| “ Gold Finder. | |
| “ Shaw's Seedling. | |
| <i>Spinach</i> —Round Leafed. | |
| “ Prickly Seeded. | |
| <i>Tomato</i> —Large Red. | |
| <i>Turnip</i> —Early White Stone. | |
| “ Golden Ball. | |

Herbs—Sage.

“ Thyme.
“ Summer Savory.
“ Sweet Basil.
“ Sweet Majoram.

SMALL FRUITS.

Currants—Black English.

“ “ Naples.
“ Red Dutch.
“ Grape.
“ “ Victoria.
“ White Grape.

Raspberries—Red Fastoff.

“ “ Antwerp.
“ Yellow “

Gooseberries—Red Ashton.

“ “ Warrington.
“ “ Ironmonger.
“ “ Crown Bob.
“ White Whitesmith.
“ “ Eagle.
“ “ Caroline.
“ Yellow Golden Drop.
“ “ Lyon.
“ Green Ocean.
“ “ Langley's.
“ “ Gascoigne.
“ “ Willow.
“ “ Laurel.

Strawberries—Early Scarlet.

“ Scotch Pine.
“ Hovey's Seedling.
“ Boston Pine.

Grape Vine—Isabella (black.)

“ Sweet Water (white.)

NOTE.—Asparagus and Rhubarb, when it is possible, should be purchased in roots; seeds may be used when roots cannot be had, only it should be borne in mind, that as regards rhubarb, seeds will seldom produce the same variety from which they were taken, the plants so raised being almost always a hybrid sort, and that by using two year old asparagus plants, just so much time will be gained, unless where there may be the convenience of a hot-bed or frame. It will generally be found best to purchase celery in plants instead of seeds.

Round Spinach for summer may be sown as soon as possible in Spring; one or two successive crops may be sown at from three to four weeks intervals afterwards.

Prickly Spinach, to stand the winter, should be sown about the middle or during the latter half of September. It will come into use with the first growth in Spring, and will last until the spring sowing comes in.

Peas should be sown at different times, to produce a succession of crops, say the first early sort as soon as the frost breaks up in spring, the second sort about three weeks later, and the third sort from three to four weeks later still; always proportioning the quantities to the probable wants of the family during the time that each sort may be in season.

In dry weather, such seeds as peas, beans, radishes, turnips, carrots, parsnips, &c., should be soaked in soft water from 12 to 20

hours before being sown; this will ensure their coming up. In the case of turnips a good plan is to soak half the seed and sow mixed with the other half unsoaked. This will give two distinct braids, and consequently two chances against the fly. The seed must not be kept over after having been soaked.

The Agriculture of the French Exhibition. By John Wilson, F. R. S. E., F. G. S., &c., Professor of Agriculture in the University of Edinburgh. Edinburgh: Adam & Charles Black. 1856.

From the Canadian Journal.

The work which stands at the head of this article was prepared in the form of a lecture, and delivered by the author in his Agricultural class in the University of Edinburgh. Professor Wilson is favorably known on this side of the Atlantic. He was appointed one of the British Commissioners to the New York Industrial Exhibition in 1852, when he attended the Provincial Shows of both sections of this Province. Canada is under great obligations to him for the interest he took in our department of the London Exhibition, in 1851, and the favourable disposition he has subsequently shown towards Canadian productions, both in the Paris Exhibition, and with reference to their introduction to the Crystal Palace at Sydenham. The British department of Agriculture in the Paris Exposition was entrusted to his care, and he was also appointed a Juror in the general examination and adjudication of awards. We need scarcely say, therefore, that Professor Wilson must be highly qualified, from previous acquirements and professional duties, to speak and write on the Agriculture of the French Exhibition. We proceed to lay before our readers a few facts and statements relating to this department, gleaned principally from his lecture.

The Agriculture of France continues as yet very defective in reference to two of its most important departments, *drainage*, and the use of *special manures*. The former, Professor Wilson says, is daily becoming more appreciated, and some few plans of drainage were exhibited, with a comparative statement of results. A French writer on agriculture, who has already established a European reputation, Leonce de Lavergne, observes in a recent number of the *Revue des Deux Mondes*: "That with badly worked and badly manured fields as is still the case with three fourths of France, drainage can produce but little good effect. Great progress has to be made in most districts before that. The adoption of a good rotation costs less, and may prove as productive. Then comes the employment of some improved implements, as a good plough, a good harrow, threshing by machinery, and the use of improvers for the soil."

Guano till quite recently has been but

very sparingly used in France. During the first six months of 1854, out of 225,000 tons exported from the Chinese Islands, 113,000 went to England, 98,000 to the United States, and only 5688 to France. In 1855, however, France imported 100,000 tons of this valuable fertiliser. Considerable attention seems lately to have been given in that country to the manufacture of artificial manures, several of which were exhibited. "Of these," the Professor remarks "one, the Fish Guano—

"Particularly claimed attention, inasmuch as the practicability of the manufacture was lately the subject of much discussion in scientific as well as in commercial circles. It was manufactured, I was informed, upon a considerable scale, the process differing somewhat from that suggested in this country. The fish, either the refuse of the market or otherwise, is cut into pieces, and submitted to the action of high pressure steam (four or five atmospheres) in suitable vessels, for about an hour. It is by that time sufficiently cooked, and is then ready for the presses, which expel a great proportion of the water, and leave the residue in the form of a cake. This cake is, by means of a coarse rasp or grating machine, broken up into a sort of pulp, which is spread out in thin layers on canvass, and dried by means of warm currents of air. It is sold either in this state or more minutely divided by means of the ordinary grinding processes. It is stated in this condition to correspond to 22 per cent. of the crude weight of the fish, and to contain from 10 to 12 per cent. of nitrogen, and from 16 to 22 per cent. of phosphate. The price was 20 francs per 100 kilogrammes (about £8 per ton), and the demand regularly increasing. Probably there are few places where this manufacture could be carried out more advantageously than along the north-east coast of this country, where both the raw materials,—fish and fuel,—are so abundantly provided; and I certainly think the simple process of the "Engrais Poisson" is more economical than and preferable to the processes hitherto recommended."

In the agricultural implement department there was an extensive display, but nothing particularly novel or superior to what had been previously exhibited elsewhere. There were no less than 350 exhibitors, whose productions as might be expected indicated very different orders of merit.

"The practical trials of the implements were of a somewhat irregular and protracted character. Those coming immediately under the adjudication of the Agricultural Jury were carried out satisfactorily, considering the difficulties attendant upon the operations of such a large number of machines and implements, most differing from, and many of them entirely new to the agriculture of the land. The trials occasioned considerable excitement,—each time the country sent its representatives from far and near. Ministers of State and Imperial

Commissioners, with their President, the Prince Napoleon, Arab chiefs, and foreigners from all parts of the globe, came to see the experiments; while the presence of a battalion and a brigade, with their martial accompaniments, conferred a novelty, if not a charm, upon the field. After all, these warlike accompaniments formed a striking background for such a living picture of the peaceful arts. The results of all these comparative trials will be officially made known by the Jury. The character of the English implements was well sustained, in none perhaps more than in the *ploughing* trials, when the dynamometer showed, that while it required only a force equal to 17.01, to turn over a certain quantity of earth in a certain time, with the best English plough, it required a force of more than 27 to do the same work with the best French one, and 32.3 with the best Belgian plough. Many other ploughs were tested, some requiring a force of 60, 80, and indeed nearly 100, so that practically one horse with the English plough would be as efficient as four or five horses attached to some of the other ploughs. In the trials of Reaping Machines, the Americans were each time victorious; the work was admirably done. An English and a Canadian machine, on Bell's principle, were forced to withdraw from some derangement of the working gear. These machines, from their economy of labor, and rapidity and excellence of work, appeared to produce a great effect upon the crowds who witnessed their operations. I fear, however, that the agriculture of France is not sufficiently advanced for their successful introduction. What Palladius said of old, is equally true now,—that they are only to be used when the fields are large, and the surface level,—and these are certainly not the present conditions of France."

"Of all implements," says M. de Lavergne, "the most necessary is the most difficult to perfect; there is not such a thing as a perfect plough, and it is very doubtful if it be possible to find one which shall satisfy every condition. All the ploughs were tried by the jury; those which did apparently the best with the least draught were, the English *Honard*, the American [Canadian] *Bingham*, the Belgian *Odeurs*, and the French *Frignon*. As the experiment shewed no very marked superiority in any, it is probable that each nation will keep to its own. That which is defective and imperfect in the work of the plough has to be supplied by other implements; as scarifiers, diggers, harrows and rollers. For these the superiority of the English is incontestable. Nothing can match Garrett's *cinease*, Colman's weeder, and the Norwegian harrow and clod crusher of Crosskill. These superior implements are now copied in France, as far as the high price of iron and the means of our cultivators admits."

In the trial of implements we understand that *Morse's plough*, manufactured at Milton in Upper Canada, stood next to *Howard's*

in lightness of draught and quality of work, then came Bingham's, an iron plough, the irons of which were not polished like Morse's—a circumstance that will, to some extent at least, account for the small difference of draught on a first trial. These two ploughs were purchased with many other articles by the Canadian Government, and transmitted to the French Exhibition. It is no small honor for the daughter to be but slightly excelled by the mother, in that most ancient, important and characteristic implement, the plough.

In the fourth section, relating to the produce of cultivated crops, the first and foremost place is assigned to the French Colony of Algeria, which, after being for many years dependent for a considerable portion of its food and a drag on the mother country, has been changed by the adoption of an improved system of tillage, into a large exporter of the necessaries and of some of the luxuries of life. But Algeria is not without her rivals. Professor Wilson remarks:

"Rivalling the fine samples of hard wheat from Algeria, were the *white wheats* of Australia, Tasmania, the Cape, Canada, and Sweden. France, Spain and Belgium also exhibited beautiful wheats, both white and red; while the *red wheats of Portugal* were very highly commended. Austria and Baden both furnished very comprehensive and well arranged collections of agricultural produce, and the *quality* of the wheat exhibited by Turkey shewed the richness of her soil, while the dirty unmarketable condition testified to the want of care of its inhabitants. Denmark, Sweden, Canada, and Hungary exhibited the finest samples of *barleys*; and Tasmania sent a sample of *oats* equal to any in the building. The specimens of *mize* were very numerous and of admirable quality; the finest perhaps were from Algeria, Canada, Australia, Portugal, Hungary, and Styria. *Rye* and *buckwheat*, two crops hardly known as bread corn in this country, were contributed by France, Bohemia, Denmark, Sweden, and Canada, in which countries they are very largely consumed. Samples of *rice* were contributed by South Carolina, of remarkable size and color; Algiers, Portugal, Tuscany, and the Pontifical States also exhibited their produce. Bavaria, Bohemia, and Belgium sent fine collections of *hops* of superior quality. Canada also exhibited samples showing a marked improvement in quality since 1851. The advanced state of the *flax* cultivation in France, Holland, Belgium, and Austria, was well represented; from each country an extensive series of samples of various qualities, and in the different stages of preparation was sent. The *tobacco* specimens, I was informed, were of extraordinary quality, in many cases, I am sorry to say, superior to the samples of grain of the exhibiting country. Those most commended were contributed by Algeria, France, Austria, Baden, Spain, and Portugal. From Greece a small collection of

grain was sent, as also a pot of honey from Mount Hymettus, which the umpires, still faithful to the traditions of the poets, pronounced to be the best in the Exhibition."

British agricultural produce was confined to one collection, exhibited by the British Government, and entrusted to the care of Professor Wilson, who manifested no ordinary amount of taste and skill in procuring and arranging the several articles, which excited much praise and admiration, both from the visitors and the press. The official *Hand-book* has the following remarks:

"Vegetable productions occupied a large space in the contributions from the English Colonies. Their prodigious variety, their relations with manufacturing industry, and with the *alimentation* of the country, assigned to them naturally a prominent position in the Exposition of 1855. But we were not prepared to see the agricultural produce of England represented with such élat. Whilst the contributions from the Indies struck us by their variety, which, so to say, prevented all methodical classification; those from England were arranged in admirable order, and thus enabled us to appreciate at a single glance the results of that high cultivation which the necessity for a large production has forced upon this great nation. The cereals, leguminous and forage plants, and the indigenous timber woods, were represented by specimens in their natural state; the roots and cultivated fruits were represented by wax models; the domesticated animals by carefully painted portraits. This collection, in its ensemble, does the greatest honor to those who made it; our only regret is that the place assigned to it in the Annexes was somewhat removed from the great lines of circulation."

The spirit of the author's concluding observations will find a ready response among the true hearted of our race, not only in Canada, but in every civilised nation of the earth:

"This brief sketch which I have given you has touched but the surface—the salient points of interest which naturally present themselves to the ordinary observer. But a man cannot long remain an *ordinary* observer whose duties lead him, day by day, and week by week, to the examination of these great and varied evidences of Divine beneficence. He cannot compare unmoved the productive ratio of skilled and Christian Europe with that of the dark, unevangelized nations of the East. He cannot but trace the hand of Providence in adapting the wants and produce of a country to each other,—whether he seeks for it in the contributions from the ice-bound shores of Scandinavia or the sunny lands of southern latitudes. He feels, after all, how poor are man's efforts, and how small is his success, when—with all the powers of advanced civilization, the matured intellect, and the developed skill—he cannot rival the beauty and the richness of those productions which Nature has bestowed on lands over which her sway is still undis-

turbed. His intellect may originate,—his skill may apply,—science and art may lend means for the adaptation of Nature's gifts to his daily need, but his own *fruitfulness* must ever come home to his mind with the great truth that—though as *Paul* he may plant, and as *Apollus* may water,—it is *God* that giveth the increase."

We too, in Canada, have many great and wise lessons to learn from the part we have played in these palaces of Industry reared successively in the two chief capitals of Europe and of the world. We have much to be justly proud of in the appearance we have made; but our experience will have been to little purpose, if we do not also learn from it how much we have yet to accomplish in every way, to place us on an intellectual as well as an industrial equality with these, the foremost among the nations of the world. G. B.

—:—:—
TRIAL OF PLOUGHS.—The Trial of Ploughs spoken of in this Journal, came off on the 29th April, near York Mills. There was a good attendance of farmers, as well as several distinguished persons from a distance. Five Ploughs were tested with the dynamometer, viz., Moreland's, Bingham's, Lioward's (English), No. 2 Lap Furrow (American), and the Iron Scotch Plough. The following gentlemen were named a Committee to report on the trial: D. Christie, M.P.P., John Wade, Esq.; Col. Thompson; and J. C. Aikens, M.P.P.

We have not space in this Number for the Report of the Committee, but we give below the result of the trial as indicated by the instrument:—

| | DRAUGHT. | | FURROW SLICE. | |
|----------------|----------|------|-----------------|-----------------|
| | ewl. | lbs. | depth. | width. |
| | in. | in. | in. | in. |
| Moreland . . . | 3 | 108 | 6 | 8 $\frac{3}{4}$ |
| Bingham . . . | 3 | 96 | 6 | 9 |
| Scotch | 4 | 32 | 5 $\frac{1}{2}$ | 8 $\frac{1}{2}$ |
| Howard | 4 | 32 | 5 | 8 $\frac{1}{2}$ |
| Lap Furrow | 4 | 28 | 5 | 10 |

—:—:—
MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

30th May, 1856.

Hay from 7 to \$9 per 100 bundles.
Straw from 2 to 3 do.
Fresh Butter, per lb. from 1s 2d to 1s 3d.
Salt Butter, do from 10d to 11d.
Country Cheese, from 6d to 8d.
Wheat, 6s to 7s.
Barley, 4s to 4s 6d.
Rye, none.
Oats, from 1s 3d to 1s 6d.
Yellow Indian Corn, from 3s 6d to 4s.
Indian Corn, (Ohio) 2s 9d to 3s.
Buckwheat, from 2s 9d to 3s.
Timothy, 15s.
Peas, from 3s 3d to 3s 6d.
Beef, per 100 lbs, from \$6 to 8.
Pork, \$9 to \$10 per 100 lbs.
Mutton, per lb., from 5d to 8d.
Veal, 7d to 7 $\frac{1}{2}$ d.
Eggs, 7d to 7 $\frac{1}{2}$ d.

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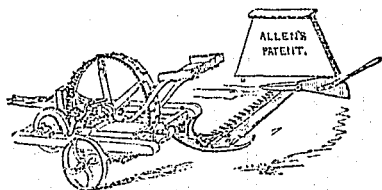
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MOWING MACHINE,
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MOWER AND REAPER;

Strong, Simple in Construction, Not liable to
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COMPACT, LIGHT, EASY OF DRAFT,
Perfectly safe to the Driver

And may be worked at a Slow Gait by Horses
or Oxen,

NO CLOGGING OF KNIVES,

Works well on rough ground, also on side
hills—salt and fresh meadows—and in
any kind of lodged grass and clover.

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fifteen acres of grass per day, in a workman-
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The Reaper will cut from twelve to eighteen
acres of grain per day, with a good pair of
horses.

3p

1856.

THE COUNTY OF MONTREAL
Agricultural Society,

OFFERS the following Premiums for the
following Crops:

ENGLISH CLASS.

| | Shillings. | | |
|-----------------------|------------|----|----|
| Potatoes, 6 Pems. | 50 | 45 | 40 |
| Carrots, 5 do. | 40 | 35 | 30 |
| Mangol Wurtzel, 5 do. | 40 | 35 | 30 |
| Turnips, 3 do. | 30 | 25 | 20 |
| Indian Corn, 6 do. | 40 | 35 | 30 |
| Horse Beans, 3 do. | 30 | 25 | 20 |
| Summer Fallow, 2 do. | 30 | 20 | 20 |

For General Competition.

The Best Surface Drained Farm, 2
premiums, 30 20

RULES AND REGULATIONS.

A Field of Four Arpents, at least, will be
required to entitle a Farmer in this Class to
compete for Potatoes and Summer Fallow.

One arpent for Indian Corn.

One arpent for Beans.

Half an arpent for Turnips, Carrots, Man-
gol Wurtzel, the whole to be Field Culture.
No person allowed to compete unless a
Member of the Society.

No Premium to be given unless Farm is
free from noxious weeds.

The parties to whom First Premiums are
awarded, shall report to the Society, the sys-
tem adopted in the production of the crops.

That such Premiums shall be paid only
upon Interrogatories being answered, and
Circulars returned filled up, addressed to the
Secretary-Treasurer.

This Rule will be enforced strictly.
Notice of Competition to be given to the
Secretary-Treasurer on or before the 20th
July next.

By Order,

JAMES SMITH, Sec.-Treas.

Montreal, 1st May, 1856.

Lower Canada Agricultural
Implement Warehouse

AND

SEED STORE,

St. Ann's Hall, over the St. Ann's Market.

THE SUBSCRIBER has just received from
FRANCE, a considerable quantity of
FIELD, GARDEN and FLOWER SEEDS,
amongst which will be found several kinds
of CLOVER and other SEEDS never before
introduced into this country. He has also on
hand every variety of SEED GRAIN, all of
which will be found pure and unmixed.

The IMPLEMENT BRANCH will com-
prise every thing necessary for the Farm,
Garden, and Dairy.

The Subscriber would also intimate that he
has been appointed Agent in this district for
the extensive manufacturing house, known as
the "Paris Furnace Co." of Clayville, New
York. And has now on hand a considerable
quantity of their Agricultural Implements,
they are of superior quality, and will be dis-
posed of by wholesale and retail on liberal
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Fertilizers.

Seeds and Fertilizers.

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Dust, Superphosphate of Lime, Plaster,
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SEEDS—Grass, Clover, Wheat, Oats, Bar-
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Garden Seeds—WARRANTED PURE.

PLOUGHS, Harrows, Seed Sowers, Rol-
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sures the properties of farmers in Lower Canada, at
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B. H. LeMoine, " Montreal.
Edward Quin, " Longue Pointe.
F. M. Valin, " Pointe Claire.
John Dods, " Petite Côte.
G. G. Gaucher, " Ste. Genevieve.
Frs. Quenneville, " St. Laurent.
Joseph Laporte, " Pointe-aux-Trembles.

P. L. LE TOURNEUX,
Secretary and Treasurer.

Montreal, 1st July, 1854.

Montreal Savings Bank.

A PERIOD OF THIRTY-SIX YEARS
HAS elapsed since an association was
formed in this City, under the designation of
the "MONTREAL SAVINGS BANK," with
the view of affording to the community the
important benefits arising from such Institutions.

The undersigned, the only surviving acting
parties connected with the Bank, anxious to
be relieved of its management, and at the
same time desirous that the public should not
be deprived of the advantages which it has
conferred, have EFFECTED AN ARRANGE-
MENT WITH THE BANK OF MONT-
REAL, by which that Institution has become
responsible to Depositors for the balances due
to them and will receive Deposits in the same
manner as the Montreal Savings Bank has
hitherto done.

The undersigned have every confidence
that this arrangement will be satisfactory to
the Depositors and also to the community.

S. GERRARD, President.
J. FROTHINGHAM, V. P.
J. T. BARRET.

Montreal, March 29th, 1856.

The Savings Bank Department

OF THE

BANK OF MONTREAL

WILL BE OPEN DAILY, between the
hours of TEN and THREE, under the
immediate charge of HENRY VEXNOR, Esq.

By Order,

D. DAVIDSON,
Cashier.

Montreal, 30th March, 1856.

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