

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion
along interior margin/
La reliure serrée peut causer de l'ombre ou de la
distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear
within the text. Whenever possible, these have
been omitted from filming/
Il se peut que certaines pages blanches ajoutées
lors d'une restauration apparaissent dans le texte,
mais, lorsque cela était possible, ces pages n'ont
pas été filmées.
- Additional comments: /
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Continuous pagination/
Pagination continue
- Includes index(es)/
Comprend un (des) index
- Title on header taken from: /
Le titre de l'en-tête provient:
- Title page of issue/
Page de titre de la livraison
- Caption of issue/
Titre de départ de la livraison
- Masthead/
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

AGRICULTURAL
 JOURNAL
 AND
 TRANSACTIONS
 OF THE
 L. JEWELON
 LOWER CANADA
 Agricultural Society.

Vol. 4.

MONTREAL, MARCH, 1851.

No. 3.

We willingly give insertion to the communication of "Quebec." In our remarks upon his former letter, it was not our intention to offer any objection to Annual Exhibitions, but, on the contrary, we should be very glad to see those Exhibitions conducted under proper regulations and judicious arrangement; but we said then, and we now repeat that it is not by such Exhibitions alone that the general improvement of Canadian Agriculture (where improvement is most required) will be best, and most certainly promoted. Have the Annual Exhibitions by all means, but let us not neglect other means. We admit that at those Exhibitions the products of good farming may be brought forward, but we also believe that good animals and good samples of products may be exhibited by parties whose farms are not under the best system of management. We give in this number an extract from the report of Professor Norton, of Yale

College, who says, that on many farms in New England and the State of New York, the proprietors appear anxious to have a few fine animals, while they allow their farms to deteriorate. This may be the case in Canada also, and good samples of various products may be produced, from farms where the general management is far from being perfect. As regards this Journal, which has been hitherto published by the Lower Canada Agricultural Society, our correspondent says, "it might be replaced by a publication equally good." Undoubtedly it might, and by perhaps a much better, but certainly not by any Agricultural periodical published in North America. Our correspondent will think this a bold assumption, but we make it advisedly, and shall be prepared to sustain it by comparison, before competent judges. There is another circumstance that our correspondent appears to have forgotten, that is, there being no French Agricultural publi-

cation in North America, except the Agricultural Journal, if the latter were not published he would deprive the whole of the French Canadian farmers of any benefit they might derive from such publications. We cannot perceive the justice there would be in acting thus, if any necessity exists for encouraging the general improvement of Agriculture. The English portion of Agriculturists would be able to supply themselves with Agricultural publications; but the French Canadian portion, who, we suppose, are more than four-fifths of the whole, would be shut out from this advantage. It is needless to tell us they do not read them, because they now subscribe for double the number of copies of the Agricultural Journal that the English do. We shall advert to this subject in our next.

Sir,—I address you again not for the purpose of controversy, but in the hope of eliciting that information we are both anxious for, viz:—the best means to improve Agriculture in Lower Canada. You object to my plan apparently of substituting a Provincial Show, to be held alternately at Quebec, Three Rivers, Sherbrooke and Montreal, instead of all these County Shows; you do not combat my reasons, but you object to exhibitions generally, now the only grounds you assign, I was surprised to read in a Journal, generally so well edited, showing at least, that we do not view Agricultural Exhibitions in the same light.

You object to exhibitions, saying "other means than Annual Exhibitions are required," "Premiums for well managed farms, good draining, good fencing, good stock of cattle, well managed dairy, all these are objects for encouragement as well as Annual Exhibitions."

I did not think it probable I should be called upon to explain the objects of an Agricultural Exhibition, to the Editor of an Agricultural Journal, but you will be surprised to learn, that the reasons you assign as objections to these Exhibitions are the very reasons I give in favor of them.

An Agricultural Exhibition ought to consist of premiums for the produce of "well managed farms, good draining, good fencing

&c.," and it has been considered hitherto the favourite and the least objectionable method of making these awards; a fair field and no favor! is what I want, and if a farmer cannot show in open day, that a well managed farm with its accompaniments of good draining, good fencing, good stock of cattle, and well managed dairy is not superior to the reverse of the picture, he is doing an unprofitable business, and consequently merits no reward; such a man, however, need not fear an exhibition conducted by honest and intelligent men, and it is only this kind of exhibition I advocate.

You must not imagine, Mr. Editor, I have a bad opinion of your Journal, though it certainly does not reach me with anything approaching to regularity, neither do I for a moment doubt your assertion that it "has been productive of more good than any cattle shows or exhibitions, that have ever taken place in Lower Canada." You are in a position to judge of this better than I can, and I am sure if you have done any good at all, you must have done better than the exhibitions alluded to.

I am not desirous of writing down the Journal either in its own columns or elsewhere, but I wish to write up a Provincial Show similar to the one in Upper Canada, if we cannot have both the Journal and the Show, then I am in favour of the latter, as I can replace the former at less cost and by a publication which I think equally good.

I am, Mr. Editor,

Your most obedient servant,

QUEBEC.

N. B.—Towards a Provincial Show I am willing to subscribe thirty dollars, or will give the same money to any good scheme for Agricultural improvement.

February 20, 1851.

To the Editor of the Agricultural Journal.

Sir,—Seeing that you intend giving reports of English and Scotch farming, I send you an article I copied for examination for my own satisfaction, from a paper which I only had the loan of for two days. Probably some of your readers may be interested in it, showing as it does that their *native spot* is not standing still, but keeping ahead of the land of their adoption. While it may interest Scotchmen generally, and natives of Ayrshire

particularly, it should also have of our attention from Englishmen, from the eulogy it received from an English visitor. I agree with the proprietor in thinking that irrigation is not the most economical way of applying manure, or *liquid manure*, but much prefer ploughing in to all methods. Dung-hills are seldom too wet not to admit of all the liquid manure being carried in carts to the fields, whence, as far as practicable, all manure, in process of fermentation or in a state speedily to become so, should be taken, as while there may be some loss by remaining in heaps, there can be less from being in the land—if it be true that the soil possesses a power to retain whatever may be applied as necessary to vegetation, which from various observations, but especially from the demonstrations of the valuable lecture of Mr. Way's, contained in your Journal some time ago, I am inclined to believe it has. While therefore, I would not be afraid of loss from *exhalation*, in irrigation, in well conditioned soil, I would be jealous of loss from over saturation in many soils, by irrigation, as like a sponge as full as it can hold, any liquid falling upon the surface finds its way to outlets without the chance of leaving its virtues in the soil at all. But in the ploughing in of manure it is safe, as let what saturation come, the soil will retain the essential and discharge the superfluous, according to Mr. Way. This is one of the many good ideas I have found in book farming, and I must not come under the charge of disingenuousness of farmers as a class by affecting the knowledge to be of my own creation. This charge, however, may be safely attributed to the pride of human depravity and applicable therefore to all classes as well as farmers, the proof of which is not hard to find. Wishing to have the inclosed article by me in some shape or other for particular reasons, for some time to come, I hope you will oblige me, if you do not publish it in your Journal, to let it lie till I call for it. If you insert it, then I have it in a better form than I send it and don't require the communication. I am pleased with the improved appearance of the Journal, but there must be a little more care exercised still other ways. Article and communications abound with Typographical errors, which I can hardly think were in the originals, and

which look ridiculous enough. Some communications may be hard to make out, and by persons unaccustomed to provincial and technical phraseology which to be not misunderstood by many readers, must be adhered to in Agricultural subjects.

Correspondents are undoubtedly culpable and so are compositors. Remarks intended to improve sometimes irritate. But assuring you, in the best spirit, of success in sustaining the Journal in usefulness, if good desires can do so. I make no apology.

Yours,

A SUBSCRIBER.

Montreal, February 17th, 1851.

HIGH FARMING IN AYRSHIRE.

"The annual inspection of farms by the St. Quivox Club, took place on the 7th. A few strangers joined the party, and by the time they reached Myremill there was a party of about 60 on the ground.

The muster took place at Canning Park, at half-past eight, and an hour was passed there, looking over the ground and houses of Mr. Telfers. It is entirely a dairy and green crop farm—no grain whatever being grown upon it. The early situation, and the light high conditioned soil render it suitable for the growth of potatoes for the early market; and a crop of mangel wurtzel is grown after these are removed. The remainder of the green cropping land is planted with an earlier crop of mangel. With good management, in an early situation, this description of crops not only gives a larger amount of food than turnips, but it is also more suitable for dairy cows, as it does not impart a taste to the milk or the butter; and it admits of a portion of the leaves being carried off in autumn for feeding.

The part of the farm not devoted to green crops is under Italian Rye-grass, a considerable portion of which has already been cut three times. The whole extent of the farm is 55 imperial acres, and it maintains a dairy of 36 heavy Ayrshire cows. Mr. Telfer's maxim is not to take too much in hand, and to do everything thoroughly well. Every spot of his ground is in the highest condition; every thing about his steading is a model of orderly arrangement, and shows a taste so exquisite that it approaches to the fastidious. The byre is a wide capacious building. The cows stand in two rows, with their heads to the centre, and there is a roomy passage down the middle, between the rows, for feeding them. Behind the kerb stone, the droppings fall on a perforated metal plate, and a drain below carries the liquid to the tank. This drain can be scoured with water whenever it is thought advisable to do so, as there is an unfailing supply

of water pumped from the River Doon. The passages before and behind the cows are neatly paved, and the walls a few feet up covered with slates, so that they can be washed down, and the atmosphere of the building kept in a state of great purity.

The cows lie upon cocoan-fibre mats; and these along with a very little litter suffice to keep them clean and comfortable. The commodious milk-house is well lighted and ventilated from the north side, and has quite an air of elegance about it. The ceilings are neatly corniced, and the wall between the centre bench and the side shelving is covered with wax-cloth. A naturally slovenly person could not think of being otherwise than clean in such a place. The dairy altogether presents adaptation for the manufacture of the finest butter—to the manufacture of which, indeed, in the cleanest and most approved way, as the chief produce of the farm all these arrangements are directed. The steam-engine is called upon to assist in the work of the dairy. It drives the churn, and the escape steam, by a pipe, boils at any time in the course of five minutes, the water in a large trough for cleansing the dairy utensils.

The food for the cattle is cooked in large cylinders by steam from the engine. These cylinders are hung by the centre, and are easily inverted and emptied into a cooler which is wheeled in below them. Besides this the engine does a variety of work, such as driving chaff, and turnips, or mangle cutters, and working the force-pump, which impels the liquid manure through cast-iron pipes, and distributes it on the field by means of gutta percha hose, as at Myremill. The solid manure of the field is all prepared and kept under cover. Mr. Telfer has made various attempts to dissolve portions of it that it might afterwards be sent by steam power through the pipes; but hitherto he has not been very successful.

According to invitation, the numerous gathering on reaching Dundaff were hospitably entertained by Mr. Ralston to breakfast. They afterwards set out with renewed alacrity to inspect the young house-fed cattle &c. about the steading. About 14 years ago Mr. Ralston sowed a 5 acre field with a variety of meadow grasses, and laid down the land on the proper form for irrigation, with the liquid manure of the farm diluted with water, of which he has a sufficient supply. It has been done at a small cost, and has paid extremely well. In good years he has taken as much as 60 tons of grass from an acre of land; and during the present season, the field has kept 30 cattle and 16 horses since the 3rd of May. Mr. Ralston is satisfied that this is not the most economical method of using the manure. The irrigation takes place mostly in winter, and the manure is put upon the land in a fresh unfermented state, and when the ground has

been thoroughly saturated before summer sets in, there must be a loss by exhalation. But the experiment has been useful, not only as affording a rich return compared with previous wasteful methods, but also as giving a convincing proof of the value of the liquid manure of the farm as a fertilizing agent in the production of the succulent grasses. It is only at the commencement of a lease that a tenant unaided by his landlord can adventure a more expensive process. On the neighbouring farm of Lagg, which Mr. Ralston took the possession of in Martinmas, 1848, he has built tanks and intends laying cast-iron pipes for conveying manure by gravitation to from 40 to 50 acres. In this instance there is the unusual advantage of a fall of 80 feet from the bottom of the tanks to the fields, and it is believed that such a fall will prove sufficient to throw a good jet from the hose. Mr. Ralston has already all but completed two tanks, each capable of holding 20,000 gallons."

"They are circular in form, built with bricks made on purpose, and laid in Roman cement; each tank costs about £10 independent of cartage. One of the new byres of Lagg is constructed to hold 36 fattening cattle in a single row with a passage behind and another before the cattle. Rails are laid on the passage in front to facilitate the feeding, and it is found that one man can do the whole work connected with the byre.

The Club arrived at Myremill about 2 o'clock, and immediately proceeded to inspect the works of that famous farm which is now an object of interest to so many enterprising Agriculturalists in all parts of the United Kingdom. Additional byres have been built since April, on the best principle for the accommodation of 100 fattening cattle; tanks have been constructed with capacity for 300,000 gallons of liquid manure; cast-iron pipes have been laid for conveying it to 100 acres of land, and a 12 horse power steam-engine has been erected for moving the force-pump, and the thrashing, and winnowing machines,—working the chaff and turnip washer and cutter—the linseed and corn bruiser—cooking the cattle food—and doing, generally, every description of work to which it can be economically applied. It may be regarded as an experiment on a grand scale of the propriety of collecting the liquid manure of the farm, allowing it to ferment, and afterwards distributing it over the fields by steam power, for the purpose of growing succulent plants for house-feeding.

An unfailling supply of water is requisite for carrying out such a plan steadily, and this has been attained by bringing it in pipes a distance of nearly a mile. The mere falling of water in abundance on well-drained land during warm weather, of itself encourages very much the growth of grass. So far as the experiment of Mr. Kennedy at Myremill has yet been carried, he has every reason

to be satisfied with the results. One field, which was sown with Italian rye-grass about the 1st of May, has been pastured with sheep. It was three times dressed with diluted liquid manure—from 5 to 6 tons were applied on each occasion. A flock of sheep, in the proportion of 20 to the acre were put on the field on the 1st of June, and with the exception of one week they have been on it ever since pasturing. The field is divided into two by flakes. The common remark of farmers on seeing such a numerous flock is "will not the sheep rot here." Mr. Kennedy can only reply that the question remains to be solved, but that, as yet, there are no indications of such a disease.

An adjoining field which was sown after the middle of March, has been cut three times for house-feeding. On a part of it which was cut 19 days before the visits of the Club the Italian rye-grass had grown, in the course of that time, to two feet in length and was running to seed. Mr. Kennedy is better pleased with this field than with the other where the sheep are going, and he ascribes the difference to the varieties of grass sown upon them.

That which pleases him best is the variety which Dickenson of London has selected and cultivated with much care; the other is an importation from Leghorn. In another field the workers were busy carrying off a second cut of grass. It was a remarkably close heavy cut, the stalks of grass measuring four feet in length.

Mr. Whitmore from Shropshire, England, who had come for the purpose of seeing Myremill, and unhesitatingly pronounced the experiments there, one of the greatest in Britain."

WHAT FARMS, FARMING, AND FARMERS OUGHT TO BE.

TO THE EDITOR OF THE CUMBERLAND PACKET.

I went last Thursday to Castleacre, to visit my friend Mr. Hudson, whose name and writings are well known in the agricultural world; and I need not say I met with a most kind, liberal, and unostentatious reception.

It is twenty-eight years since Mr. Hudson took the Castleacre farm, under Lord Leicester (then Mr. Cook,) after having cancelled five years of the old lease, by which he lost £500. His rent was then £1,500 per annum for one thousand four hundred acres. Seven years ago the lease was renewed for twenty-one years, at £1,600 per annum—a fair rent at that time; but when we consider that the saleable value of the estate has been increased by Mr. Hudson's industry and outlay to the extent of not less than £10,000, it is to be presumed that he would get a renewal of his lease on liberal terms; or otherwise that he may, during the next seven years, endeavor to withdraw from the land

some reasonable portion of the capital he has invested in it.

Mr. Hudson referred to his books to show that during his tenancy he has laid out in oil-cake and artificial manures £55,000. The oil cake is laid on the land after passing through his cattle in the act of feeding them, but still it is money laid out in manure. This year his outlay is for two hundred tons of linseed-cake, at £6 10s. per ton, £1,250; fifty-six tons of Peruvian guano, £560; nitrate of soda, sulphuretted bones, &c., about £400 more; besides Egyptian lentils, Indian corn, &c., for feeding purposes. He is now feeding cattle as the quack advertisers would feed us, namely, on Revalenta arabica, which is said to be ground Egyptian lentils, to the number of one hundred and sixty beasts, besides one hundred of lean stock and cows, all of which will be turned into cash by May-day. They are lodged in eleven straw-yards, with sheds all round the quadrangle, and all abundantly supplied with food and water. With the cattle associate a good many growing pigs, which are quick enough to pick up a living amongst their betters. Mr. Hudson is preparing three beautiful Devon oxen for the Smithfield show. They appear small animals, but of excellent form and quality, and the fattest one is estimated to weigh ninety score, which at 6d. per lb. is £45; and if he obtain a £20 prize the ox will pay well. The mangers these animals feed from have slate bottoms, which are both clean and very durable. Mr. Hudson has 2,700 sheep, 2,500 of which after their fleeces are off, will be sold in Smithfield before midsummer, the breeding ewes being retained. The wool will all be sold before Christmas, 1851, Mr Hudson making it a point to adopt the commercial maxim of selling all he makes, whether it be beef, mutton, pork, corn, or wool, before his annual stock-taking.

From about the end of November he sends about one hundred and fifty quarters of grain to market weekly, until all is sold. His land sown and sowing this year is five hundred acres, in fields of thirty-five, forty, and fifty acres each, and in each field the crop is stacked on circular bottoms and iron posts two feet high and three feet apart. His circular stacks are twenty-seven feet in diameter at the bottom; of symmetrical form, and beautifully trimmed. His barley stacks are oblong, sixty feet long by twenty feet wide, and not on raised bottoms; so that the rats, poor things! are kept on barley instead of wheat. Mr. Hudson paid £2,950 in wages in 1849, and £2,700 in 1850, and usually receives from £8,000 to £10,000 per annum from Smithfield market, according to the price of meat, now considerably less, the price of meat being too low to pay. He has put on his turnip land this year 3,000 tons of yard manure, and on his wheat land 2,000 tons; besides guano, bones, and other things.

When I visited him, they were ploughing a little field of thirty-five acres with four pairs of oxen; and as they finished a ridge, six or eight feet wide, and while the mould was fresh and moist, the seed drill followed; and after the drill came the harrow to finish with—the three operations all going on together. I asked “What crop had you on this last?” “Turnips.” “When did they come off?” “Yesterday we hauled off half, and fed off the other half with sheep, and they finished their feed yesterday. We never let the land lie—we plough and sow directly we get the turnips away.” “Well, but where are the weeds?” “There are none, the turnips are kept perfectly clean, the same principle is adopted in turnip sowing, we put in the seed instantly the plough has passed over it.”

Mr. Hudson uses Howard’s (of Bedford) patent plough. He bought a dozen of them four years ago, at £4 15s. each. His dibbling machines cost £60 each. He has six road wagons, eighteen Gloucestershire harvest wagons, twelve two-horse tumbrels with iron bottoms; four light Gloucestershire wagons for hay and light work, and a few one-horse carts—all made on the premises. His saddlery and harness are all repaired on the premises. All his blacksmith’s work and carpentry is done on the premises. And one of his steam-engines was made at home. This is all so different from the extent and routine of an ordinary Cumberland farm that you may think I am romancing, but you must come and see, and then you will believe.

Mr. Hudson has two stationary steam-engines of twelve horse power each, on different parts of the farm; and he finds they are not sufficient for his work, and is building a third. The castings are made in the village; and his engineer and blacksmith, with their forges and lathes, put them together. One of the engines was at work thrashing barley, two men were on the stacks, two loading the wagons, and two pitching from the wagons to the engine, another receiving the grain in swills, from which he returns it into another whirrigig to have the beards broken off. The straw came out at another place, and was pitched away; and a cloud of chaff and dust showed where the winnowing was going on. The same engine was, at the time, pumping water, grinding *Revalenta arabica*, and breaking oil-cake. The same machine also presses linseed for extracting the oil, which is put into a large wine pipe and sent to America for sale, the cake goes to feed the cattle. There is also attached a flour mill, as well as barley-flour mill, for grinding the refuse corn, beans, &c., for feeding purposes; a saw mill, and other conveniences. The cart-wheel felloes are cut out in segments by the machinery of the engine, and much other work done by steam agency. Mr. Hudson

has forty work horses and eighteen working bullocks. The latter work double (? half) shifts, viz., two oxen in a plough—he keeps four ploughs at work ten hours a day, and they plough from one and a-quarter to one and a-half acres daily each plough. The straw is cut into chaff; the turnips are sliced and other roots are cut by the steam machinery.

Mr. Hudson has two suits of clothes, one fine and the other coarse, and his wife has a beautiful shawl, all of their own work.

As for a thistle growing on the farm, you might safely offer a guinea for it; and the land is, for one thousand four hundred acres, like a garden. Women and boys are constantly employed picking up every stray weed, and sometimes they contract for it by the acre. Altogether, the farm, the farmer, and the style of farming, is such as few Cumberland farmers can have any idea of.

I am, yours, &c.,

A FARMER.

REPORT OF THE BERWICKSHIRE AGRICULTURAL SOCIETY.

We give the following extract from the Report of Mr. Milne, to the Berwickshire Agricultural Society, on English farming. Such reports will enable parties to make comparisons that will be useful. A tour through a country by a party competent to estimate the state of Agriculture, and report his tour, is one of the best means of information and instruction that can be adopted—but *always provided* that the party is a competent Agriculturist. We have often seen reports of countries and crops made by parties who manifestly were not qualified to form a just estimate of the state of farming or of the growing crops, and this often produces very erroneous ideas of the country. The Times and Morning Chronicle, of London have employed persons to make tours, not only in England but upon the Continent of Europe to report the state at Agriculture which are published in both papers, Mr. Milne says:—

These remarks at once suggest to us the inquiry why a similar system of farming should not be followed in Berwickshire? If our processes of husbandry, and of stock-feeding are better, of course that is a sufficient reason. But before this answer can be given, the merits of the two systems ought to be respectively considered. Far be it from me to venture on such a comparison. This is a task for which my inexperience wholly un-

suits me: but I will venture to notice one or two points, in the hope simply of inviting discussion of the subject, by the practical Members of the Club.

1. It will be observed that the *croppage* of the land, according to the system which I have been describing, differs from what generally prevails in Berwickshire. In the first place, there is a greater variety of crops in England—Mr. Rigden, as we have seen, has thirteen or fourteen varieties of green crops—one effect of which is, that the land does not tire so soon of any particular crop. In our country, we have not more than half that number. In the second place, English system does not imply the keeping of the land for two years successfully in grass—a practice which prevails over the greater part of Berwickshire, and which I believe produces generally very unsatisfactory results. So far back as the year 1776 there was a letter written by Mr. Hay, of Mordington, addressed to the Commissioners of Annexed Estates, in which that gentleman, who is described as “a noted improver,” says, “The red clover sown in that farm, produces the first year a most luxuriant crop of hay; but the second year there is scarce a single stalk of it to be seen, nor does any other grass appear, for which reason I intend that it shall never stand one season.” Thus the same failure of clover which is so much complained of in our country at present, was noticed by an intelligent farmer of our own district, upwards of seventy years ago; yet we persist in following a system of cropping which he pointed out as essentially the cause of the evil, and neglect the remedy which he also suggested, viz., keeping our grass and clover on the same land only one year. When I mentioned to my English friends, the rotation generally followed in Berwickshire was one which required that the land should remain two years in grass, they expressed a very confident opinion that much more could be made of it by taking from, in the second year, a crop of almost anything else; and this opinion appears to be corroborated by the estimate given to me by an intelligent and experienced farmer of this country, that the worth of the second year’s grass, in Berwickshire and Roxburghshire, could not be stated higher than 35s. per acre. If these views be correct, it seems impossible to doubt that the five-shift system, which prevails yet so generally in our district, would, in most cases be advantageously given up.

It may be true that the soil is benefited by being allowed to remain for two years in grass—at least its fertility is probably less exhausted with grass, than with grain or turnips. But there are now abundant means of compensating such exhaustion, as by the feeding of sheep with oil or rape cake on the first year’s grass, or by direct application of specific manures. When the five-shift husbandry was first introduced, about a century ago, no

manure could be obtained, except what the farm itself supplied, so that there was a reason then for the practice, which no longer exists.

I may add, under this head, that there are now many farms in this county which present examples of the six-shift and eight-shift rotations, and that on these farms there is never any failure of clover.

2. In regard to the *culture* of the soil, there are several points of difference between our practice and that which I have been describing. The land on Mr. Ridgen’s farm, the regular working of which I had the best opportunity of observing, seemed to me more deeply ploughed, and reduced to a finer tilth, than in Berwickshire. I would advert also to the larger supplies of manure given in England. Mr. Ridgen for example, lays on his farm, of 740 acres annually about 9000 tons of manure—which is at the rate of about twelve tons per acre. Mr. Baker, of Writtle, an experienced farmer, at a recent meeting of the London Farmer’s Club, stated that whatever method of stock feeding is pursued, “it is important that a dressing of at least ten or twelve tons of manure should be raised for every acre of arable land, yearly; and I assert, that under proper management it may be accomplished.” It is his practice, and that of the most intelligent farmers in England to manure for all their crops—corn, grass, and green crops.

Now, what is the general practice in Berwickshire; Most persons are content to manure the land only once in the rotation—viz., for the turnip break, and never with a larger allowance than twenty tons per acre;—which would give with the four-shift rotation five tons per acre, for the whole farm, and with the five shift rotation four tons.

It thus appears that our land generally receives only one-third or one-fourth of the manure, which on the English farms referred to, is applied. I merely notice the fact; I presume to offer no opinion as to which system is the best; I leave this point also, to be considered and discussed by the practical members of the Club.

3. I proceed to notice our mode of *feeding stock*, which also differs considerably from that practised by my English friends.

The first great point of difference is in regard to warmth: by the keeping of stock, cows, oxen, horses, and sheep, in sheds, which afford shelter from the weather.

In regard to sheep, it has been remarked that not only do they grow and fatten more rapidly, but that their fleeces are much improved; and to this mode of treatment, which prevails extensively in Germany, as I am informed by an agricultural friend who has resided there, the fineness of the German wool may be fairly ascribed, and the economy of the system as regards sheep, is fully proved by the experiment on Whitfield farm, to which I have already adverted.

Probably our system differs most in the treatment of ewes and lambs: as I am not aware that it is the practice, any where in Berkshire, to put them under cover or into shelter, unless the weather happens to be unusually severe.

In regard to cattle, though in our country they generally have sheds, in which they can take refuge from the cold or wet, still they are obliged to eat their food in open yards exposed to the weather. I understand that an improvement has recently been introduced by our President into his feeding-yards at Whitrig, by erecting over the feeding-trough, ridges or roofs, which cover the food and the animals when eating it.

But, notwithstanding this improvement, there are still the following points of difference between our system and the English:—(1.) That the animal in their sheds are less exposed to extremes of cold and heat; (2.) That each animal is enabled to eat his food, without being robbed of it or disturbed by his stronger neighbors; (3.) That the cattle are kept more clean—being dressed and having clean beds to lie on.

The next difference as regards the management of stock is in the food given—which, as we have seen, in England consists of a variety of things, both green and dry.

The propriety of this course seems to be indicated by the following considerations, apart from the proved success of it. It is well known that human beings, if kept long to one description of diet, tire of it, and cease to derive from it the same amount of nourishment; and, it will be observed, in all the experiments which have been published, if cattle feed upon turnips only, or hay only, or any other one kind of produce, that the quantity eaten per day gradually lessens, and that the increase of live weight does not go on at the same rate as at first. It is different, however, when, after a short time, the nature of the food is changed, and still more so, when a variety of food is given; a circumstance which probably explains why stock thrives best on pasture, consisting, as it does, of a great variety of herbage. There are many points of analogy between animal and vegetable life: and as it has been found that compounded manures are best for the land, on account of the variety of elements required by the structure of plants, so it is reasonable to suppose that animals, which require as great a variety of substances for the structure of their different parts, will thrive best on a mixture of food.

These views—if there be any weight in them—show the propriety of at least seriously considering whether on principle, the English system is not better than ours, and whether we should not grow if possible, a greater variety of green food for the sake of our stock, as well as of our land. How are we to do so is a separate question, to which I will afterwards advert.—*North British Ag.*

We have transferred to our columns a letter, signed "A Farmer," which has appeared in the *Cumberland Pacquet*, giving a description of the system of farming pursued by Mr. Hudson, of Castle-acre, and which is deserving the careful perusal of every farmer. The writer has pithily headed his letter, "What Farms, Farming, and Farmers ought to be." We have made a few corrections upon some matters in reference to which we possess information, enabling us to render the statements contained in it more complete. There are some points in Mr. Hudson's system which must be startling to farmers generally. It appears that the rent is upwards of 23s. per acre for light Norfolk land. The average outlay for oilcake and artificial manures, over a period of twenty-eight years, has been nearly £2,000 per annum upon 1,400 acres of land. The fat meat sent to Smithfield annually is upwards of £6 per acre over the whole farm. The labour amounts to £2 per acre, notwithstanding that steam power is made available in every possible way, thereby showing that the use of machinery does not decrease the employment of manual labour. He has this year 500 acres of wheat on a farm of 1,400 acres. He adopts the commercial maxim of selling every year all he makes before his annual stock-taking. Not a thistle on the farm if you gave a guinea for it, scarcely a weed. We have frequently adverted to the superiority of Mr. Hudson's farming. The facts enumerated will speak more effectually upon the point than we can. On this occasion, therefore, we shall be silent, save to express a hope that he may still be enabled to pay a rent of 23s. per acre with present prices.

We learn that Mr. Hudson is at this time consuming upwards of 100 coombs of barley per week; four coombs per day sprouted, for cart-horses, six coombs per day sprouted for 2,000 hoggets, and five coombs per day ground for 130 beasts. The hoggets are doing very well indeed upon the sprouted barley, cut hay, and cut swedes. He has only had occasion to kill three out of that number since the first of November, and two out of the three in consequence of their being dizzy. None have died. He is of opinion that if farmers would sprout their inferior barley for their sheep, instead of buying foreign linseed-cake, they would help the price of barley very much. He strongly recommends the use of sprouted barley for sheep as well as for cart-horses. M. L. E.

PEAT AND ITS PROPERTIES.

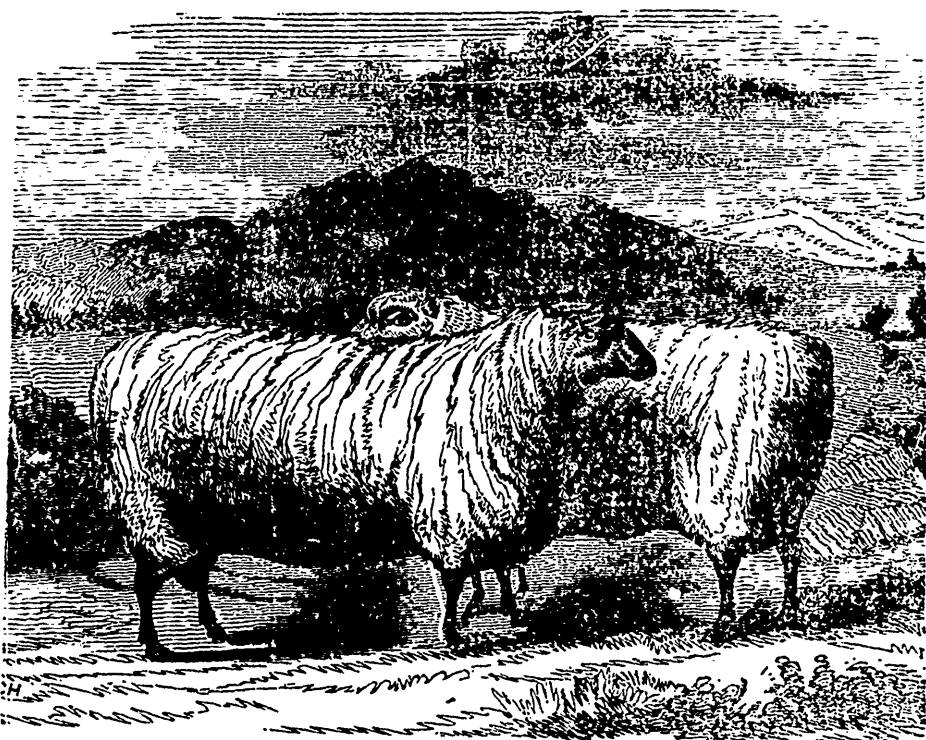
Last year there was a good deal of conversation in parliament and out of it, about an experiment by a London merchant with qualities of peats in Ireland. It was reported in the House by Lord Ashley, that, for an outlay of £8, a hundred tons of peat could be made worth £92. This was thought by

many to be too good news to be true, and according to the whole case was thoroughly investigated, when it turned out that the estimated profits had been very much exaggerated. Mr. Owen, the gentleman who had entered this field of speculation persevered, and it now appears, says the *Times*, that he has been for the past year and a half, quietly engaged in testing the merits of the process to an extent that would properly authorise a definite estimate of its results. These labors have been carried on partly under the superintendance of Dr. Hodges, the Professor of Agriculture in the Queen's College, Belfast, and partly in the neighborhood of London, at the premises of Messrs. Coffey and Sons, the engineers, and the conclusions now represented to have been arrived at are of an exceedingly satisfactory nature. They do not promise the 500 per cent. originally talked of, but, according to a certified estimate rendered by Messrs. Coffey, they show a profit of upwards of 100 per cent. This estimate, which is framed, for an establishment consuming 36,500 tons of peat per annum, is as follows:—

EXPENDITURE.	
36,500 tons of peat at 2s per ton.....	£3650
455 tons of sulphuric acid at £7.....	3185
Wear and tear of apparatus, &c.....	700
Wages, labor, &c.....	2000
Cost of sending to market and other incidental charges.....	2182
Profit.....	11908
	£23625

PRODUCE.	
365 tons of sulphate of ammonia @ £12 per ton ...	£4390
255 tons of acetate of lime, at £14.....	3570
19000 gallons naphtha, at 5s.....	4750
109500 pounds of paraffine, at 1s.....	5475
73000 gallons volatile oil, at 1s.....	3650
30000 gallons fixed oil, at 1s.....	1800
	£23625

The "paraffine" mentioned in their products, is a fatty inodorous matter, which unites with spermaceti, wax, &c., and is suitable for the manufacture of the best candles. The price put on the various articles is said to be that which is offered by the principal London Merchants, and there seems now reason to hope that not only Ireland's peat bogs, but Scotland's unused mosses, will be turned to good account.—*Scottish Farmer*.



THE CHEVIOT BREED OF SHEEP.

This is a breed, as yet nearly new in this country. In Scotland they have the reputation of being remarkably hardy, and thriving under apparently very adverse circumstances. They yield on an average 5 lbs. of long wool, washed upon the back; ewes at five years have weighed 60, 70, and even 90 pounds—and some weathers 200 pounds. They promise to be an excellent breed for mutton. Their introduction and trial seem very desirable, especially in a country like ours, where there is such a diversity in climate, soil, and aspect, as well as in the various demands for long and fine wool, mutton, &c.

LIMESTONE ROAD SWEEPING AS MANURE.—“The scrapings of roads mended with limestone are a better fertilizer than lime itself. They have not the cleansing power of quick lime to kill vermin, roots, and seeds of weeds. Nor do they so readily decompose the alkaline compounds in the soil. But consisting chiefly of ground limestone with animal excrements, they form a rich lime compost, the most fertilizing form in which lime can be generally employed. When pretty dry, four loads may contain one of lime; but if muddy or wet, or upon soft ground which mixes up with them, the proportion of lime will of course be less.”—*J. Prideaux.*

This valuable manure is totally neglected where it abounds in Montreal, and in many other places in Canada.—[*EDITOR AGRICUL. JOUR.*]

THE ADVANTAGES OF DRAINING AND TRENCHING.

As I consider this a good season of the year for gardeners draining and trenching the ground under their charge, I would take the liberty of saying a few words on that subject.

I consider the most of gardeners are aware of the advantage they derive from their kitchen garden being at all times in a fit state to work, I will, in a few words, say a little on department.

I was engaged a few years ago to my present situation, and was then informed that the kitchen garden was the most important department to be attended to.

After being settled, I took a look through the garden, and beg to say, the vegetables that were then in it, held out no great encouragement to my success. The Leeks were the only vegetables worth looking at; but to add to my grief, I was told they were on the only good piece of ground in the garden. They had tried Cauliflowers, but they would not do.

I inquired if the ground had ever been drained or trenched, but no person could tell me. I thought I would try it for one year at least, and see what a good coat of manure would do. I cannot boast of the produce. I did make out to cut a few Cauliflowers, but very small, they got all club-rooted, so did the Cabbage and Savoy.

My employer was very anxious that some method should be tried to improve the ground. I proposed that we should first drain it and then trench it; to that he agreed. My reason for thinking that such would improve the ground was that, when I dug it over, I found there was scarcely a spade depth of good soil until I came to the subsoil, which was hard, yellow clay. Well I got what assistance I required, and the work was soon over. We ran the drains lengthways, three and a-

half feet deep, eight yards apart; we put in tiles and soles, with a few ashes and a little straw above all. We then trenched the ground two spades deep; when we came to clay, we loosened it with a pick and left it in the bottom. We put in a good coat of manure between the spadefuls, leaving it as rough as possible to the frost. In spring we got hot lime-shells—laid down in barrowfuls—gave it a little water, and covered it up for a night, and the next morning we spread it and pointed it in, in hopes that it would prevent clubbing, but it has had little effect.

Now for the result of our labor: I am happy to say my employer is highly gratified; the result is far above his expectation. We have now vegetables of every kind we desire—second to none in this quarter. Cauliflowers in abundance, of excellent quality and good size; Parsnips, two and a-half feet long, very clean and large; Onions, a good many of them sown in autumn, weighed above half a pound; Potatoes very large and sound; Vanack Cabbage, weighing in July ten pounds. And last, although not least, our ground is always dry, our drains are working beautifully, and for all the drought we had this season, our vegetables looked well.

These are facts, Sir, I am happy to bear testimony to. I have been very explicit, so that all who may be placed in such circumstances as I was, may with confidence adopt the same method. D. N.

THE ORIGIN OF THE EXISTING VEGETABLE CREATION.

BY PROFESSOR SCHOUW.

Translated from the Danish, by Dr. Wallich, in Hooker's Journal of Botany.

The history of our earth has made gigantic strides forward during the last half-century. Numerous facts, and conclusions derived from them, have taken the place of arbitrary theories. But as the older periods in the world's history are often better known than the more recent, so likewise are we better acquainted with the ancient periods of history of our earth's structure than with those of a recent date; for while we possess a tolerable acquaintance with the condition of this globe, its plants and animals, during the coal formation, our knowledge is singularly deficient in regard to the epoch which formed the transition from the former to the present creation. It is only in the most recent times that geologists and zoologists have directed their attention to this field of research; while the contributions of botanists towards illustrating the period in question, have been very few. Among the most important questions naturally arising in investigations of this sort, is undoubtedly that relating to the origin and spread of the vegetable world, at present occupying the surface

of the globe; and here several points offer themselves for being preliminarily solved.

1. It is asked thus, in the first place, whether every species of plant has originally sprung up in one single spot (so-called centrum,) whence it has afterwards spread over greater or smaller, sometimes immense tracts, or may we assume, that the same species has originally appeared in several, often far distant places? And with this question another is connected, namely this;—Is it necessary to assume, that each species has originated from one single individual (or two, in the case of bisexual plants,) or have several individuals been created simultaneously?

If we take the idea of species to be an assemblage of individuals, originally sprung from one single individual, we build our notion upon an hypothesis, we presuppose a state of things as yet to be demonstrated; since no proof has hitherto been offered in confirmation of such a common origin. But if we attend to the facts presented by the existing geographical plant distribution, such an hypothesis becomes extremely improbable, and in some cases quite untenable. In order to establish the idea of common centres for the creation of species, we must be prepared to prove by what means these have wandered abroad. It will be easily seen that, while in many cases these means appear to have been adequate for the end, there are many others utterly insufficient to account for the existence of the same species in far distant countries. The ordinary means are the following:—Man who, by his occupations and pursuits, purposely or otherwise carries plants from one place to another; the tides of the sea transporting fruits (Cocoanuts for instance) from one coast to another; rivers, which convey fruit and seeds of alpine plants into the vallies; winds, that waft them, especially such as are endowed with hairy or feathery appendages, or so-called wings, contributing to their easy transport; birds, who occasionally perform their part in this operation. We may, moreover, assume, where geographical obstacles interpose themselves, that tracts, which in former times connected countries, have sunk (the Channel, the Mediterranean, &c.) But it will be easily seen that these means are very inadequate, when we consider that many species are common to the Alps and Pyrenees on the one hand, and the Scandinavian and Scotch mountains, on the other, without being found on the intermediate plains and hills; that the Flora of Iceland is nearly identical with that of the Scandinavian mountains; that Europe and North America, especially their northern parts, have various plants in common which have not been communicated by human aids. Still greater and almost insurmountable obstacles to such a mode of explaining things arise, from the fact that there are plants in the Straits of Magellan, and on the Falkland Islands,

which belong to the flora of the arctic pole—for instance, *Phleum alpinum* and *Erigeron alpinus*; and that several European plants appear in New Holland, Van Dieman's Land, and New Zealand, which are not found in the intervening tropical countries, nor are likely to have been introduced; which is strikingly instanced in the case of several fresh-water plants, such as our common Reed, *Alisma Plantago*, several species of *Scirpus*, and *Lemna*, *Typha*, *Aira flexuosa*. The quotation of these species, common both to the arctic and antarctic flora, is not derived from those periods when species were not so rigorously fixed as in our modern time. The most recent researches, especially of Dr. Hooker, in his expedition to the South Pole, have not only confirmed former instances, but added others. The number of such recurring species is much increased, if flowerless and leafless plants (Cryptogams) are taken into account. These exhibit very many instances of species which the remotest part of the globe have in common, and which fail altogether in the intervening countries. And yet there exists no ground for assuming, that this sort of plants is endowed with greater facilities of migration; although it is intelligible, that the more simple organizations are produced spontaneously with greater ease, than others more compound. Neither do we find, that plants, whose fruits and seeds would render them more capable of migration, are particularly common to distant regions. A strong argument against any great influence of migration, is likewise derived from the fact, that the floras of the antediluvian world seem to have corresponded more closely among themselves, than those at present existing do; although there was then less land—and perhaps only islands—rendering migration a process of greater difficulty. Further, the analogy or difference between existing floras, stands in no proportion to the facilities, or otherwise, of migration; although their influence cannot be denied, for instance, in the occasional scantiness of plants in small islands, very distant from continents. Even with respect to those tracts which offer no impediments to the influence of migration—for instance, between the west coast of France and the Ural—it is difficult to suppose this vast territory to have continued a desert, until the vegetation commences to both of these countries, accomplished its migration from the one extreme point to the other, of this enormous plain, or from the centre to either.

(To be continued.)

ORGANIC LIFE IN THE ATMOSPHERE.

Dr. Ferdinand Cohn, has published some interesting statements concerning observations by Ehrenberg, himself and others, on population of the atmosphere. The direct examination of air by the microscope lead-

ing to no results, it is necessary to investigate the solid precipitate, the dust and even the earths, which in the course of time accumulate on roofs, as well as the water and sand contained in spouts, &c. Examination of this shows, that the earths of our roofs and walls consist in great part of a numerous and most peculiar fauna and flora, seldom or never met with in water. The organisms they contain, are identical with those which occur in the dust of the trade-winds, meteoric and common dust; they are the same under the tropics as at the poles, in the most different latitudes, and at the most different times. Some investigations of a number of earths, which could not in any way be supposed to have had a meteoric origin, especially some from different fields, edges of ditches, from gardens and flower-pots, afforded a significant hint as to the probable origin of the organism. The author has found organic forms in almost all these earths, and they agreed perfectly with those of the earth on the roofs and moss-earth, of trade-wind, meteoric and common dust. In particular, he found the small variety of *Eunotia amphioxys* in greater or less abundance, more rarely *Navicula borealis* and *Semen*; as well as *Gomphonema*, and *Synedra Fusidium*, Ktg. Phytolitharia pieces of the epidermis of grasses and other parts of plants were also found. This importantly affects Ehrenberg's conjecture, that the agreement of common dust, and the earth of roofs with meteoric and trade-wind dust, denotes a common origin of all these kinds.—*Flora*, in *Botanical Gazette*.

CULTIVATION AND MANAGEMENT OF FLAX.

Common Flax is a very beautiful plant when in flower, and might often be advantageously cultivated as an ornamental plant. Our juvenile readers will feel interested in being informed that the "Sesame" of the East, which was the magic sound wherewith Ali Baba opened the cave of the Forty Thieves, is almost a *fac-simile* of the flax plant, being only a more delicate variety of it. The sesame seeds have occasionally been imported for the purpose of making linseed oil. The fact is mentioned, not only because the circumstance is not generally known, but as being suggestive of melancholy reflections respecting the condition of the labourers in the East, who are thus reduced to live on bread formed of a substance similar to the oil-cake, which in England is given only to cattle.

The cultivation of Flax differs widely from that of every other crop, quality being the desideratum rather than weight. Out of 50,000 tons annually imported from Russia, perhaps not one single ton obtains a higher price than £45; whereas in Holland and

Belgium, a few parcels, especially some grown near Courtrai, not unfrequently obtain £150, and sometimes £200 per ton: the former is principally used in making canvass, the latter for the finest lace and cambric. Very rich or highly manured land may consequently produce a less profitable crop to the farmer than if sown on soil in an inferior state of tilth. At the present moment, when so much attention is being drawn to the cultivation of this article, it will be well for those intending to make an experiment on its culture, that this circumstance be borne in remembrance; otherwise, a very erroneous opinion may be in some cases arrived at as to its value as a crop. With the exception of the Lake district, the mountainous parts of Wales, Dartmoor, &c., and a few similar localities in Ireland and the borders of Scotland, the climate of Great Britain, south, or even a little north of the Clyde and Forth, with the whole of Ireland, except the part similar to those already alluded to, are admirably calculated for the growth of Flax. Even in the excepted places soils exist well calculated for the culture of Flax, if it is "*pulled for the white*." The most profitable crop that can be grown, on breaking up old lea, is Flax: and it is a fortunate occurrence that Flax is less liable to grow rampant and coarse, when sown on a freshly broken up but rich lea, than if preceded by a cultivated crop; besides, Flax always leaves the ground in admirable order for either a crop of wheat or other cereal, or even potatoes will grow well without manuring. With the aid of manure, any soil, except stiff clays and marls, can be adapted to the growth of Flax—gravels being the worst of the light soils; stiff soils are wholly inappropriate. The best soil for Flax—as, perhaps, for almost all other usually cultivated crops—is a moderately light loam, consisting of an equal admixture of sand, marl, and mould, perfectly drained, either artificially or naturally. The dry loams on the mountain limestone, which occupy such an extensive range through the middle, and on the chalk formation of the north of Ireland are good examples of the kind of soil best calculated for the growth of Flax. In England, the fine loamy soil in the Vale of York is a further illustration, as well as similar soils in Devon: respecting our Down lands, they are worth a separate notice. To sum up, light turnip land, in fair condition, such as might be deemed adequate to produce a fair crop of turnips, is the general character of the soil best adapted for Flax. A former statement may appear paradoxical, viz. that even in the Lake and familiar districts, Flax may be advantageously grown, notwithstanding the excessive annual rain-fall of eighty inches, and sometimes ninety inches. This is accounted for from the circumstance that Flax may be pulled in one of two stages; that is, either shortly after the seed-pod has formed, or when it has been

allowed to stand for seed: the former is technically called "pulling it for the white." In a district where the rain-fall is heavy, the practice of pulling for the white is recommended; first, because, if allowed to stand for seed, the weather might be unfavourable at the period of gathering—the seed might never ripen—the crop be partially destroyed, or, at all events, very much damaged and discolored: when pulled for "the white," early in the season, it gives time to dew-rot it, viz, spreading it on grass, and leaving it exposed to the rain and atmosphere: if laid on a recently-cut field of clover or grass, the benefit to the aftermath is worth from 20s. to 30s. per acre. For dew-rotting Flax pulled for the white, a moist clime is favorable. Another advantage is, that the early period of the year at which the Flax is taken off the land, permits a crop of winter turnips or rape to be sown; and, lastly, Flax pulled for the white obtains a higher price per stone, as it possesses a finer fibre, and, if carefully attended to in rotting, has also the finest colour. The weight of crop is less than if pulled at seed-time, and all profit from the seed is sacrificed; but, on the other hand, the exhausting effect of growing Flax, which is often so much complained of, does not occur, for it may be stated most emphatically that there is not a single crop grown in the range of British husbandry so little exhausting to the soil as Flax when pulled "for the white."

The mere cultivation of Flax is confined to a few very simple rules. The soil should be well pulverised—the deeper the better, if on an appropriate soil—and should be made perfectly clean. Flax may be advantageously sown after the potatoes or turnips, in the place of wheat or barley. The latter fact has been disputed: we can aver positively that the practice is a correct one, and we are further countenanced in this opinion by the analogous practice pursued in Belgium. In setting out the ridges for the Flax crop, they should be made narrow and flat, and the furrow, or trench, well opened; six feet wide is, perhaps, the most convenient size. Narrow ridges are convenient for weeding. The seed allowed to an acre ranges from two to three bushels—the former quantity for very rich, the latter for poor sandy soils, where a fine, not a heavy crop of Flax is intended to be grown. If sown too thick on rich land, the plant grows long and thin, and consequently so weak that it is beaten down by even a moderate shower, and will scarcely ever recover its position. In this way nearly the entire crop may be destroyed. About 120 lbs. of seed may be sown on good Flax land, capable of producing 50 to 60 stones of dressed Flax per acre; 150 or 160 lbs. may be sown on poor land in good cultivation. Two bushels of seed may be sown on very rich land, and will yield a heavy crop of 70 or 80 stones, besides about 24

bushels of seed; notwithstanding which, it will, perhaps, not yield a greater money return than a crop from inferior land weighing only 50 stones. As the cultivation of Flax is best understood in Holland and Belgium, we will give a description of the practice pursued in those countries, as described by Mr. Van Aelbroek, who states that the crops which immediately precede Flax in light soils are barley or rye, with turnips after them the same year. In this case, these crops are more highly manured than usual, and the turnips have a double quantity of liquid manure. About Christmas, the turnips being taken off, the land is ploughed into high ridges, and the intervals dug out: it remains in that state secure from wet, and exposed to the winter's frost. As soon in the spring as the weather permits, the land is again ploughed and well harrowed to let the seeds of annual weeds vegetate; a month after, another deep ploughing and harrowing are given. Peat ashes are often sown in this stage, at the rate of 30 bushels to the acre. A few days after these are harrowed in, 10 hogheads of strong liquid manure—the emptying of privies, mixed with diluted cow's urine, is preferred—is distributed on the land; it is then left for a week or ten days, that the manure may soak in. The seed is then sown, and lightly covered with a bush harrow or the *traineu* (an instrument peculiar to the husbandry of the Low Countries:) if covered more than half an inch deep, the seed does not vegetate readily or at all. Cloudy or showery weather is chosen for sowing it, as a very hot or dry air sometimes prevents the seed from rising. The best seed is imported from Riga. The first crop of seed raised from the Riga seed is sometimes used, but it is supposed to degenerate fast, and the home-grown seed is found to produce coarse-branched Flax. In this country guano and salts of ammonia can replace the liquid manure of the Continent; in all other respects the above remarks apply equally to both countries. American seed produces coarse Flax. Seed brought from Odessa is said to be liable to introduce "the dodder," a parasitical plant which destroys the crop if once attacked by it. On all accounts Riga seed is to be preferred, and for very fine Flax the seed of the previous year is preferred. Further attention is not required on this crop until it is pulled, except weeding, which must be carefully attended to going over it for this purpose twice, or oftener if requisite. If carefully weeded when the Flax is young, the crop is so close that the weeds have little chance when the Flax gets strong. The time of sowing may extend from the latter end of March to the middle of April: the time of ripening of the seed sown at the two periods will differ little, other circumstances being equally favorable. The Flax sown the earliest will be found the

best. Early sowing might always be recommended, were it not that the early sown is more liable to be nipped by the frost, of which the Flax plant is highly susceptible. On this account Flax may be sown with safety a week earlier on the western than the eastern side of England: the last week in March for the one, and the first week in April for the other, will be found about the best seasons of the year. Sowing after mid-April is to be deprecated. Flax is fit to be pulled for "the white" as soon as the most forward of the seed-bolls are fully formed; if a wet season, a little later; if a very dry year, a little earlier: a similar rule should regulate the grower according to the general character of the district, as regards moisture or dryness of climate.

It is better to decide on pulling Flax too early rather than too late, as the loss in weight of seed by the former mode will not amount to so much as the damage that may arise from allowing it to be over-ripe. Flax is invariably pulled, bound into sheaves, and placed in stocks in the ordinary manner.

The Dutch mode of ascertaining the fitness of Flax for pulling is to take a full-grown stem, the ripest capsule of which is cut horizontally with a sharp knife. If the interior of the seed-pickle is found firm and of a dark green color, it is considered fit to be pulled. If, from any mismanagement, the nature of the land or other cause, the Flax should grow of different lengths, each length should be pulled separately: this is accomplished by the puller, seizing the stems just under the seed-bolls, which allows the shorter stems to escape, these being taken up at a second pulling. The two lengths must be kept separate in all future operations. Flax may be rippled immediately after pulling, and steeped at once; it may be dried in stooks, the seed beaten out and the stems steeped shortly afterwards; it may be dried, staked, the seed beaten out and the Flax steeped in the following spring. The first two are the courses usually followed in this country and Belgium; the last-named practice being, we believe, confined to the vicinity of Courtrai. Whatever mode is practised, the method of steeping is the same. The following is the Flemish process:— Long ponds are constructed, of a depth sufficient for the Flax to stand nearly upright in them without touching the bottom. If this depth cannot be attained, the Flax is placed in a slanting position, the root end lowermost, and the seed end of the plant a little under the surface of the water. It is kept in this position by means of mats spread over it, and poles, with stones placed on them of sufficient weight to keep the whole under water. If the steeping takes place in August, soon after being pulled, the fibres will be sufficiently loosened from the woody

parts of the stem in the course of a week. In October it will take double that time, or more, according to the temperature, of the water: the higher the temperature, the sooner the steeping will be completed. The water of the Lys gives, by the soap test, rather more than 17 degrees of hardness; consequently, it is not on account of its softness that the waters of the Lys are so well adapted for steeping Flax; the probability is that it is the decaying organic matter found in the Lys waters which gives this river its peculiar quantity. Steeping Flax in the Lys is a regular trade, and affords employment to great numbers of people from April to September.

When the Flax is nearly steeped enough, it is frequently examined: if left a few hours too long in the water, the quality is injured; and if it is taken out too soon, the fibre will not be sufficiently detached, and will break in the scutching. As soon as the fibres will separate from the outer covering the whole length of the plant, it should immediately be taken out of the water, the bundles untied, and the Flax spread out to dry on a piece of short grass, the place having been well cleared previously. It is allowed to remain on the grass ten or twelve days, and is frequently turned over during that time: it is then housed, and in the course of the winter it is scutched and heckled.

In this country the ordinary course is to ripple the Flax soon after it is pulled, and then to steep it. Rippling is performed by drawing the heads of the Flax through a coarse upright iron comb, by which means the seed capsules are detached.

After the Flax has been steeped and dried, it may be either stacked or at once subjected to the last operation, termed scutching: this can be done by either hand labor or machinery. The object is to separate the outside, called boon or shove, from the inside or Flax fibre. Much of the market value of Flax depends on the manner in which this is executed.

One of the most interesting subjects connected with the cultivation of Flax is the profit and loss account to the farmer, which will be about as follows:—

EXPENSES.	£. s. d.
Rent and taxes.....	2 0 0
Ploughing, harrowing, rolling, &c...	1 10 0
Two-and-a-half bushels of seed, 7s 6d.....	0 18 9
Weeding, pulling, ripping, and steeping.....	1 10 0
Taking from steep, spreading, turning, lifting, &c.....	1 10 0
Scutching 50 stones, at 1s 6d.....	3 15 0
Cleaning seed and taking to market	0 10 0

11 13 9

PRODUCTS.	£.	s.	d.
50 stones of flax, at 7s 9d.....	18	15	0
20 bushels of seed, at 5s.....	5	0	0
Value of husks, &c., as feed.....	0	15	0
		24	10
Deduct expenses.....	11	13	9
Net Profit.....	12	17	3

Nothing, however, is here set down for manure. If the Flax water is made use of to manure grass-land, and the seed consumed in feeding cattle, the return for manure from the Flax crop will be pretty nearly equal to that which it absorbs. The above calculation is founded on the supposition that the Flax has been grown on good land, had a fair season, and managed well in its subsequent process. Flax might be grown with great advantage on all our Down lands; many in Sussex, Hampshire and Surrey are peculiarly well adapted for the growth of Flax.—*Illustrated London News.*

DO A GOOD TURN WHEN YOU CAN.

BY CHARLES SWAIN.

It needs not great wealth a kind heart to display;
If the hand be but willing it soon finds a way.
And the poorest one yet, in the humblest abode,
May help a poor brother a step on his road.
Oh! whatever the fortune a man may have won,
A kindness depends on the way it is done;
And though poor be our purse, and though narrow our span,
Let us *all* try to do a good turn when we can.

The fair bloom of pleasure may charm for a while,
But its beauty is frail, and inconstant its smile;
While the beauty of kindness, immortal in bloom,
Sheds a sweetness o'er life and a grace o'er our tomb:
Then if *we* enjoy life, why the next thing to do
Is to see that another enjoys his life too;
And though poor be our purse, and though narrow our span,
Let us *all* try to do a good turn when we can.

THE MOUSE AND THE CAKE.

(FROM ELIZA COOK'S JOURNAL.)

A mouse found a beautiful piece of plum-cake,
The richest and sweetest that mortal could make;
'Twas heavy with citron, and fragrant with spice,
And covered with sugar all sparkling as ice.

"My stars," cried the mouse, while his eye beamed with glee,
"Here's a treasure I've found, what a feast it will be;
But, hark! there's a noise, 'tis my brothers at play;
So I'll hide with the cake, lest they wander this way,

Not a bit shall they have, for I know I can eat
Every morsel myself, and I'll have such a treat,"
So off went the mouse, as he held the cake fast,
While his hungry young brothers went scampering past.

He nibbled, and nibbled, and panted, but still
He kept gulping it down till he made himself ill;
Yet he swallowed it all, and 'tis easy to guess,
He was soon so unwell that he groined with distress.

His family heard him, and as he grew worse,
They sent for the doctor, who made him rehearse
How he'd eaten the cake to the very last crumb,
Without giving his playmates and relatives some.

"Ah me!" cried the doctor, "advice is too late,
You must die before long, so prepare for your fate;
If you had but divided the cake with your brothers,
'Twould have done you no harm and been good for the others.

Had you shared it, the treat had been wholesome enough,
But eaten by *one* it was dangerous stuff,
So prepare for the worst;" and the word had
Had scarce fled,
When the doctor turned round, and the patient was dead.

Now all little people the lesson may take,
And *some* large ones may learn from the mouse and the cake,
Not to be over self-ish with what we may gain,
Or the best of our pleasures may turn into pain.
ELIZA COOK.

POULTRY.

On the twenty-eighth of November 1849, I had a cock and pullet of the Cochin China breed sent me: they were then each about five months old. The pullet commenced laying early in December, and has up to this time produced five broods of Chickens. The first brood was hatched January 22, 1850; the second, April 6; the third, June 13; the fourth, Aug. 19; and the fifth, Nov. 21. The hen is a good nurse, but as she commences laying eggs when the chickens are from 28 to 30 days old her young progeny are soon deprived of her care. When she has laid from 18 to 20 eggs, which she does in about 24 days, she incubates, in fact she has a constant succession of occupation—producing eggs—incubating and attending to the wants of her young broods. I have distributed most of the chickens amongst my friends but I have in my own flock one pullet of the first brood; she has reared seven chickens, and is now laying. I have also one of the second brood: she is laying, and I am in daily expectation of having eggs from three pullets of the third brood. The fourth brood, which consists of ten chickens, are fine healthy young birds, and as the winters here are generally very mild, I hope the fifth brood will do well. My fowls are always confined, but each compartment of the building has attached to it an open space fenced in. I keep the houses and yards clean, feed high, and always have my fowls in good health and condition.—*R. H. Bowman, Penzance.*

Agricultural Journal

AND

TRANSACTIONS

OF THE

LOWER CANADA AGRICULTURAL SOCIETY

MONTREAL, MARCH, 1851.

IMPROVEMENT OF LAND.

We have frequently warned farmers that it was "beginning at the wrong end" to commence to improve the stock of domestic animals, before they had first endeavored to improve the land that was to give food to these animals. We were glad to perceive that a Correspondent of the Albany Cultivator, in the February number, adopts the same views on the subject. His opinions in other respects, also, are in such perfect accordance with what we have seen, that we copy a paragraph or two from this gentleman's very sensible letter. He alludes to the New England States, and the States of New York:—"Now I would ask any man of observation, has the soil during this period of rapid progress elsewhere, been improving in a corresponding degree. There are many single farms scattered about the country, where such a corresponding improvement is to be found; there are also a few Districts that can be cited as honorable exceptions, but of many others, the most that can be said is, that the quality of the land has remained nearly unchanged. Of the greater number of farms, my own opinion is, that the change has been for the worse; that there are numerous Townships in New York and New England, where the land produces less per acre than it did ten years ago. The reports of many reliable—practical men bear me out in such a conclusion, any reader who doubts my correctness will I venture to say, be soon satisfied, if he institutes a strict enquiry in his own Country or State.

It is obvious then, that if these remarks are correct, the land itself has not been so much the subject of improvement as the stock which it supports, or the implements which are to till it: that in short, it is not at present, as I said at first, generally so good, as are our animals and our tools; we often see this exemplified, by the presence of fine cattle, sheep or horses, on farms that are constantly growing poorer, and poorer as their productive power.

This seems to me like beginning in part at least at the wrong end. I would be the last one to discourage the improvement of our stock, but think that the soil should be brought up at the same time.

The necessity of this I wish to impress with especial earnestness upon the farmers of the West, where the land is still for the most part fertile, and in no case exhibits the utter exhaustion which may often be seen at the East. The Western farmer should consider that he has not only to better his stock and implements, but that he has also, an equally important duty, to keep his land up, and even improving; if it has already begun to fail, let him turn his attention above all things else, to restoring its productiveness. The land is the foundation of the farmer's prosperity, if that is fertile and kept in good order, all the other requisites of profit and good farming will naturally follow.

If the farmers of the West will be warned in time, if they will pursue the course, which even a trifling amount of study will make plain, they will never find themselves called upon to engage in that slow and toilsome process of renovation, which has become so necessary in the older States.

In the countries which I have visited, and which have furnished the subjects of the three foregoing letters, nature has provided exhaustless supplies for restoring and improving the soil; in hollows and swamps, lie deposits of muck and marl, which will one day be more valuable than gold mines in their effect upon the true prosperity of that region. A vast part of

the richest land is lying idle from the mere presence of water, and it was a source of satisfaction to me, that the present race of exhausting farmers, too many of whom yet remain there, do not know enough to touch it, they look upon it with contempt, and will leave it for their more skilful successors to subdue and cultivate, these will not only do this, but will find enough surplus material to enrich the worn out uplands to which their predecessors have confined themselves. I might continue upon this topic with interest to myself, and as I think with advantage to your readers, but least they should disagree with me in this latter opinion, will turn to some other subject in my next letter."—*J. P. Norton.*

We believe the writer is Professor Norton of Yale College, New Haven, a very excellent opinion on Agricultural matters. It will be perceived by this extract, that Lower Canada is not the only place that lands are allowed to be exhausted, and ran out, and also, that farming with us, is not so far behind our Southern neighbours, as has been generally imagined. This, however, should only stimulate us in our exertions in the improvement of Agriculture as we find ourselves on pretty equal terms at the commencement, as regards the state of Agriculture in both Countries at the present moment. If climate and soil favors one country more than the other, the country least favored in this respect, will have to make up for the defect, by skill and industry. For our own part, we would not claim any allowance on the score of inferior climate or soil, but be satisfied to compete on perfectly equal terms. There is one point, however, not to be forgotten, that education must progress with us, or we may fail in the competition. Nor should we neglect to provide every other necessary aid and encouragement to promote Agricultural improvement. All these are being provided in the United States, and they are all quite as necessary for the rural population of Can-

ada. If the improvement of Agriculture is desirable, every means that we see clearly to be required to ensure its improvement should be adopted. In every civilized country the greatest attention is now being given to this important interest. We may be considered tiresome in so constantly advocating this subject, as we can scarcely offer anything new to recommend it, but what is the use of all that has been written, were we to give up now before effectual measures are taken to secure the improvement of Canadian Agriculture. Suitable education and Model Farms, would unquestionably give Agriculture a fair chance, which we fear it will not have in Canada without these schools of instruction to assist it.

We give insertion in this number to the Report of an English Farm. Mr. Hudson's of Castle Acre, which is calculated to give parties who have never seen British farming, an idea of what it is. This "High Farming" is not confined to Mr. Hudson, but there are thousands who farm on the same system. We may conceive ourselves very good farmers in North America, and so we are, after our own fashion, but we feel persuaded that there is not a farm from Hudson's Bay to Cape Horn, can bear any comparison to that of Mr. Hudson of Castle Acre.

We also give a Report of Scotch Farming in Ayrshire, sent to us by a correspondent. We had previously seen this Report, but did not copy it, from our doubts of the accuracy of several of its statements. We shall give only two or three instances. First, one acre of land producing in the season 60 tons of common grass as green food for cattle. Second, 5 acres of common grasses, dressed with liquid manure, keeping 30 cattle and 16 horses, from the 3rd May to the 7th September. Third, land seeded down with Italian Ryegrass, on the 1st of May, dressed with liquid manure three times has been pastured with sheep from the

1st of June, at the rate of 20 sheep to the acre to the 7th September, with the exception of one week. We have no hesitation in saying that the best land on the face of the earth could not maintain this number of stock to the acre, in a thriving condition, indeed it should be scarcely sufficient to afford them clean surface to lie down upon, during four months, in fact the thing is an absurdity, and to any practical farmer, must throw doubt upon the whole report. Sheep, above all animals, will not thrive upon confined pasture, soiled by their dropping and feet, where 20 are kept upon one acre for 3 months, and let us only imagine 30 cattle and 16 horses kept over 4 months on 5 acres of land, without any other food!!! The Report does not state whether it is the Scotch or English acre, but there is only a difference of about one-sixth that the former is larger than the latter. We some time ago, gave a report of 40 tons of Italian Rye grass produced from an acre in England in a year, in four cuttings, but 60 tons of an acre in Ayrshire, even though it be the Scotch acre, would be equal to about 10 or 12 tons more, and this is a very material difference from an acre of land. We have no doubt that land can be made to produce a quantity that would be incredible to parties who had not seen it under good management, and frequent dressing by liquid manure. There are limits, however, to production, and to the healthful and thriving pasturing of cattle and sheep, upon a given quantity of land. According to our experience we should think land seeded down the 1st of May very unfit for pasturing 20 sheep to the acre from the 1st month after sowing the grass seed.

We believe, our correspondent is a gentleman of experience, although we have not the pleasure of knowing him, even by name, and we beg he will consider our objections. We must also request he will favor us with his name, as it is unusual to have correspondents without knowing who they are. We shall be very glad of

an interview and introduction if he will call upon us at 25, Notre Dame Street.

AGRICULTURAL REPORT
FOR FEBRUARY.

The Agricultural Report at this season of the year cannot be very interesting, but as many of the subscribers may wish to see it kept up regularly throughout the year, we are anxious to meet their wishes, and when we have no growing crops to report of, to offer suggestions that may be useful for their production, when the time arrives for their cultivation. So far as a deep covering of snow, we have the full benefit of it this Winter for our lands, and this is a fortunate circumstance, from the long continued extremely cold weather, which would have been very injurious to the lands, had they not been protected by snow. It would be very necessary that farmers should keep manure in the farm-yard, as free from snow as possible. After a fall of snow it would not be difficult to remove most of it from the yard. When it gets very much mixed up with the manure, it is injurious to it, prevents the manure from fermenting, and when thawing, washes and carries away some of its best qualities. If the manure cannot be covered in the yard, it will be much better kept in well made heaps in the field, as in that case, snow will not get much mixed with it, though it may collect round the manure heap. As there may not be many Tanks for collecting liquid manure in Canada, there is a means in the farmer's power to prevent much loss of liquid manure, by littering his animals of every species abundantly with straw or other refuse, which will soak up nearly all the liquid manure. Feeding in boxes will also save this manure. We feel persuaded that *in general* this mode of saving liquid manure is the most suitable for Canada. There is undoubtedly a great waste of manure in Canada, and this is the more to be deplored, when we know it is so much wanted to the land. In the city of

Montreal, the waste of manure is immense; indeed this waste is greater than in any town we have ever seen. There must be some cause for it. The farmers are blamed for not taking away this manure, but the want of sufficient capital, and many other circumstances, prevent them from making the most of their lands, or anything like what might be made of them. We do not say that this is the case with all farmers, but we do say that there is much manure wasted in Montreal that might be useful upon any farm, and it is against the public interest that manure, in any shape, should be wasted.

In a late number of the "Mark Lane Express," we observed that in Leicester-shire, England, thorough draining is executed at a very cheap rate. The drains are 35 feet apart, and 3 feet 6 inches deep, (and this interval and depth would answer in most cases in Canada,) laid with pipe tiles of two inches bore, conveyed into main drains with larger pipes. The cost for digging out, putting in the pipes, and filling in the drains, is 2s. 10d. for 28 yards, and reckoning the pipes, large and small, at 20s. per thousand, the whole expense per acre is £3 4s., which at six per cent. for the outlay, will put on a charge of about 3s. 10d. per acre per annum. Such is the cost of thorough draining in England. What is the reason that it cannot be executed in Canada at something near the same rate, allowing for the difference of Currency? We see no reason why we should not be able to drain here for the same amount, or very little over. The fault is, first, in our defective machinery for making tiles. When Professor Johnston was in Montreal in 1849, he visited a tile-yard in the neighborhood, and said, that with the same expenditure of labor that was necessary to make a thousand tiles at this tile-yard, with more perfect machinery three times the number of tiles might be made. In the next place, we have no proper draining tools, or men accustomed to cut drains for pipe-tiles, and

consequently there is a waste of labor in cutting the drains larger than is necessary, and this is an imperfection as well as a useless expense. We cannot see any cause why these defects should not be remedied. It must prevent, in a great measure, thorough draining in Canada, while the expense is double what it would be in England, and the price of produce less with us than in England. We have excellent clay for making tiles here, and we have abundance of wood for burning tiles, if not immediately near our cities, they might be made convenient to water communications. Until we have tiles at a fair price; however, we have stones convenient in many places, and we would prefer them to tiles, where they could be had. No doubt, that with us under draining cannot supersede altogether the use of open drains, to carry off the surface water produced by the snow in Spring, when perhaps the soil may be so frozen as to prevent the action of the under drains in time. A mixed system of draining will be the most suitable for Canada, and the mode of executing it must be determined by the judgment of the parties who are interested. It would be absurd to lay down any fixed rule. Under every circumstance, and in every situation, means are necessary to be adopted to drain the land we cultivate, sufficiently, if we desire to raise good or profitable crops. The prices of agricultural products are very low in England at present, with no prospect of any material raise for some months to come. With the exception of wheat and flour, all our other products are likely to find a better market southward than in Britain, because our southern neighbors will require these products. The rapid and vast increase of population in the United States will very probably require a constant supply of our products for their use, and while they are engaged in commerce, and in searching for gold, we should be prepared to supply them with our products in exchange for gold. The prospects of farmers in Canada should be as encour-

aging as in any country we know. It may not be the most rapid means of acquiring great wealth, but it is a more pleasing and healthful employment than washing and digging for gold or silver, or the employment of the merchant, the manufacturer or mechanic. On a well-managed farm, where every branch would be conducted according to a good system—the animals and implements all good, and well cared for—what could afford a more pleasing occupation, or a more happy and honorable life? It is only the want of a perfect system of agriculture that prevents the attachment and love of the country, which all right-minded and high-minded men must entertain. A well cultivated country, covered with fine clean crops, beautiful green pastures, well chosen animals suitable for the country, what could be more cheering and delightful for the occupiers of the soil, and for all who would visit or travel through the country? This picture may be fully realized in Lower Canada.

February 28, 1851.

AGRICULTURAL PERIODICALS OF THE BRITISH ISLES.

On behalf of the Lower Canada Agricultural Society, and on our own, we beg to offer acknowledgments to the friends of Agricultural improvement in the British Isles, who have kindly sent us Agricultural publications of great interest and value. We can assure our friends these publications are highly estimated, as they deserve to be, and for our own part, we consider the information and suggestions they contain, are more practical, and to be relied upon, than we can obtain from any other source in our power. To John Hall Maxwell, Esq., Secretary of the Highland and Agricultural Society of Scotland, Wm. Shaw, Esq., of London, Editor of the Mark Lane Express and Farmer's Magazine—and Edward Buller, Esq., Secretary of the Royal Agricultural Improvement Society of Ireland, who have been elected some time ago, Honorary

Members of the Lower Canada Agricultural Society, our acknowledgments are particularly due. To the proprietors of the Farmer's Gazette, published in Dublin, The Farmers Herald, published in Chester, England, and the North British Agriculturalist, published in Dalkeith, Scotland, we also beg to offer our thanks—and regret that it is not in our power to make a more adequate return, than to exchange the Agricultural Journal of this Society for the valuable papers we receive from the British Isles. We know it will be satisfactory to the parties we have named, to hear that the valuable papers they address to us are appreciated and that they are a great assistance to us in affording us matter for the Agricultural Journal of Lower Canada. We are generally behind our friends in the British Isles in Agricultural improvement, but we trust their example will both instruct and stimulate us, to adopt necessary improvements in our system of husbandry. We may not be able to adopt exactly the British system of Agriculture in all its branches particularly as regards the large proportion of turnips cultivated on the British system. But we are perfectly convinced that no country on earth can teach us a better system of Agriculture for *Canada*, than we may learn from the practice of good farming in the British Isles. What would be good draining, good ploughing—and judicious manuring, and cultivation of crops in Britain, would be good in Canada. A rotation of crops is, also, as necessary here, as in Britain, although, perhaps, there might be some variation required. It is only an excuse for bad farming to say that we cannot adopt generally the British system of husbandry with some modifications certainly on account of the severity of our Winters—but those modifications would not justify any departure from the main principles of good farming, and constant attention to crops, and stock. The dairy is another branch of farming that cannot be better learned than from English, Flemish

or Dutch practice. We happen to know something of the practice of husbandry in the British Isles and in North America, and we can state without fear of contradiction, that there is no good system in North America, except where the British system is adopted and practised, as nearly as it practicable. This conviction, will, we trust, excuse us to subscribers for recommending this system to them as above, and before all others, as the best and most profitable for them.

We are very particular in copying agricultural information from English Periodicals not to select any that would be likely to lead the Canadian farmer into practices that might be injurious to him, but we know many subscribers to the Agricultural Journal would be dissatisfied with us, were we not to copy those articles. North America does and will aver the introduction of improved systems of husbandry, in a great measure to the British Isles. First, by practical farmers coming to settle in North America, and next by the excellence of their published works on agriculture. We do not say that there is not good farmers in other European boundaries, but still it is principally from the British Isles farmers emigrate to this continent, and that agricultural books and periodicals are imported. When at the Exhibition at Syracuse the best fatted cattle we saw there, were fatted by a Englishman from Yorkshire.

We are perfectly certain, that any farmer who adopts in North America the English system of cultivation for crops, will grow better crops from it, than by any other system, allowing of course for such variations as may be necessary from the difference of climate. We can safely refer for proof of this proposition to the results from the different systems practiced in North America, including Canada. We may have useful hints from the practice of agriculture in America, but upon the main principles of agriculture, in all its various branches, we never can obtain better instruction than from Britain. Her imple-

ments of agriculture, also, are not to be surpassed, although they might be made of lighter construction, and not so expensive to suit our circumstances. These facts are so well known, that repeating them will not, we hope, give any offence. We have found many things connected with Agriculture in Canada, that are very much to be commended. The Canadian Hay-Cart could not be displaced in our estimation, by any implement in use in the British Isles, for usefulness and convenience, for taking in the crops, of grain and hay—and this is a very material agricultural implement. The mode of gathering up, and tying the grain in large bundles, is an excellent plan in Canada, in the present state of her agriculture, but we do not think it would be suitable, if the crops were heavy, and free from weeds and grass. The mode of fencing, and the expertness of Canadians at making these fences, is superior to any we have seen in America, out of Lower Canada. The attention to horses, in placing water constantly before them in the stable, and the mangers for hay placed on a level with the floor of the stable is another excellent plan. The winter overcoat in use by Canadian farmers could not be more suitable for the country and for the farmer. There are many other things connected with Canadian Agriculturists we might commend. All that we find suitable and good we should adopt—and Canadians by the same rule, should adopt all that they would see likely to be advantageous in the British system of Agriculture. Let no prejudice exist against anything that is good and profitable wherever we find it. This will be the true mode to improve our condition.

CULTIVATION OF CARROTS AND PARSNIPS.

It would be very desirable that the cultivation of these useful roots should be greatly extended in Canada. They would not be more difficult to cultivate and manage than other root crops, and they would

be a much more certain crop than turnips. For carrots, the most light and sandy soils might be so cultivated and manured to produce a good crop, provided they are cultivated to a sufficient depth. If farm yard manure is made use of, it should be ploughed into the soil in the fall. If, however, the land is not manured until the spring, the most rotten and shortest manure should be made use of, and well mixed up with the soil. Wood ashes is an excellent manure for them; and if possible, both lime and salt should be applied. As much as ten or twelve bushels of the latter might be applied to the acre, and double or three times that quantity of lime. Compost manure would be good, which, perhaps, might have lime and salt mixed in the compost as it ought to be. Raised drills is the best plan for sowing carrots, if cultivated to any great extent. The drills should be about 18 inches from centre to centre, to admit of cultivation with the grubber. When the drills are prepared and rolled for sowing, we would recommend that a rake should be made of about four feet long, having six teeth, nine inches apart. When the seed is to be sown, a man or boy should draw this rake across the drill, and so form small drills or marks for depositing the seed in. The seed should be previously mixed with sand. The seed sower should then follow, and drop with the hand, a few grains in each small drill or mark, and a third person should follow to close these small drills or marks, and cover the seed. The seed sown in this way, will come up at the proper distance asunder, and in weeding they have only to be thinning where they come up in clusters, and the intervals can be much more readily hoed. We have tried this method, and found it a good one. Where carrots are not very extensively cultivated, ploughing the land into ridges four and a half feet wide, harrowing well, and then sowing the seed in small drills across these ridges is a good plan, and they can be weeded and hoed from the furrows

on each side, but even sown in this way, it would be well to put the seed in the cross drills, a few grains together, at intervals of nine inches, as in the case of drills made by the plough. The plants would thus come up at the intervals which it would be proper, should be between each when the thinning and weeding was finished. The cultivation for parsnips may be exactly the same as for carrots, but they require stronger and richer soil. For both the soil should receive a very deep cultivation, and the deeper, the better the crop. When the time for sowing arrives, we shall offer some further suggestions.

POTATO ROT.

We have seen it stated in an American Agricultural Periodical, that the potato rot commenced in Europe ten or twelve years previous to its appearance in North America. This we know to be a great mistake. In the year 1832, we first observed the rot in the seed potatoes after planting, and we do not recollect that the rot was known in Europe in either seed or crop previous to that year, being the first year of the appearance of the cholera. The seed was affected here for twelve or thirteen years before the crop was known to rot, and we believe the year 1845 was the first year the potato crop was found to rot, either in Europe or America; at all events, there was not any general destruction of the crop previous to 1845. Much has been written and published on this subject, but although paper and printing are constantly employed to enlighten us as to the *cause* of disease, there has not certainly as yet, been any satisfactory cause assigned for it: The ravages of the wheat fly commenced in Lower Canada, in the year 1834, or perhaps the year previous, in some of the eastern counties, and this fly is as difficult to account for as the potato rot. We may in time be able to find an effectual remedy for both, but at present we are not able to control either. from any certain knowledge we have of

the *cause* which produces either the rot in potatoes or the fly in wheat. We see parties coming forward constantly, confident that they had discovered the great secret of the cause of the potato rot, but all the paper and ink employed hitherto on this subject, has been so much waste.

We were very much surprised to see in a late Agricultural Periodical of the United States, a description of farming and returns obtained from it, in the state of Georgia. However backward agriculture may be in parts of Canada, and however small the produce obtained from it occasionally, we have not certainly ever seen any farming in Canada that could not contrast favorably with what is described as farming in Georgia. That state is more than one thousand miles south of Canada, and yet we have been told that they are liable to have frosts at unreasonable times that do great injury to the crops. We are, every day, more confirmed in our opinion of the great advantages that Canada possesses over the greater part of North America, for agriculture, notwithstanding her character for long winters, deep snow, and severe frost. This character is a just one, but we deny that it is disadvantageous, but on the contrary. The climate and soil of Canada are very similar to the most favorable parts of Russia, so far as we can learn by description, though we are far south of any part of Russia. Both in the latter country and in Canada the soil is deeply covered with snow during the cold of winter, and we believe this greatly contributes to increase and preserve the fertility of the soil. There cannot be any doubt that in Lower Canada, one hundred acres of land can be made to yield as large a produce for the use of man or domestic animals, as the same quantity of land would do in any part of North America.

We have seen it recommended to spread ashes, lime, and salt, mixed with

other short manure in the spring, around fruit trees as a preventative to vermin, and otherwise, a useful application to fruit bearing trees, We have no doubt that this sort of mixture would be beneficial in every way.

ANNUAL MEETING OF THE QUEBEC AGRICULTURAL SOCIETY.

At the annual Meeting of the Quebec Agricultural Society,—

Capt. RHODES in the chair.

The following report was read:—

REPORT.

The Committee of the Quebec Agricultural Society, in making this, their First Report, beg to congratulate the subscribers on the close of an abundant year, and on the general prosperity of the Association.

CATTLE.

At the commencement of the labors of this Society, your Committee beg to remind you, there did not exist one thorough-bred beast of any kind in the neighborhood, with the exception of an Ayrshire Bull owned by Mr. Thos. Gibb and a few imported, Ayrshire Cows; it was, therefore, determined to purchase a pair of Durham Cattle, and one of your oldest and most experienced Farmers was sent to Troy, State of New York, to attend Mr. Vail's sale of Short-Horns; he returned with a young Bull and a Heifer. Prince, the bull, is now three years six months old; his weight is 1,702 lbs.; he has been stationed on the St. Lewis Road for two seasons, and though the expenditure on his account greatly exceeds his earnings yet the care of the bull has not been a tax on the Society; according to the herd-book of Prince he has been visited by 71 cows.

Charlotte, the heifer, has bred one calf, and she is now in calf to Prince; she was sold by the Society, for £26, at Public Auction, but on condition that she should not be resold out of the District.

An Ayrshire Bull (pure breed,) and two Ayrshire Cows, have been imported, during the past year, from Scotland, by one of your Committee.

This young bull is a very beautiful animal; his age is two years five months, and his weight 1,400 lbs. Mr. Gilmour the proprietor has kindly consented to allow the public the use of the bull at the usual rates.

An Alderney Bull, purchased at Gaspé, by the Society, has been procured to improve our Native Stock; the Canadian breed serves so admirably as a poor man's cow, yielding generally a rich and superior milk for a very miserly and inferior treatment.

SHEEP.

LONG WOOL.

Some very well bred Leicesters have been imported by two of your Society, Mr. Gilmour, and Dr. Geo. Douglas: these sheep have been procured at a very considerable outlay, but they are well worth the money. Dr. Douglas' sheep were purchased from Mr. Robt. Cattle, of Bransby, near York, England, a celebrated tup-breeder, of 50 years' standing.

SHORT WOOL.

Mr. Tilston has imported two South-Downs from the well-known Flock of Mr. Rigden, of Brighton, England.

PIGS.

Age of Boar, one year and nine months; weight of do., 550 lbs.

Mr. Gilmour has likewise imported some Berkshire Pigs, of the improved Breeds:—
Age of Boar, three years and five months; weight of do., 550 lbs.

Capt. Rhodes, during the two last seasons, has imported several Pigs, of the Large Yorkshire Breed.

FOWLS.

A great variety of Fowls and Fancy Poultry are now owned in the District.

GRAIN.

Nearly all Grain Crops have done well this year, but particularly

WHEAT.

A considerable quantity of the Black Sea Wheat has been reaped. Weight of Black Sea Wheat, per Imperial Bushel 62 lbs.

OATS.

Hopeton Oat, a variety of the Potato Oat, imported by this Society from Scotland, is likely to prove a valuable seed from this part of Canada: it has been successfully grown for two years.

Weight of Hopeton Oat per Imperial Bushel, 42 lbs. A black oat received by Dr. Geo. Douglas, from the President of the Agricultural Society of Dalhousie, New Brunswick, weighs 49 lbs. the Imperial Bushel.

BARLEY.

Chevalier Barley, also, imported by the Society, from Scotland, can be recommended; it is, however, not so early as the common Canadian Barleys.

HORSE-BEAN.

The Mazagan Horse Bean, ordered by the Society from Montreal, has been grown, during two seasons, by Mr. Wilson, of the St. Lewis Road, to whom the Committee beg to return their thanks for the attention he has paid to this as well as to other of the imported seeds. Mr. Wilson reports, his horses receive so much advantage from the use of these Beans, that he considers their cul-

tivation ought to be especially recommended. In England a horse is considered indifferently well-fed unless the (split) horse-bean forms a portion of his daily food, and there is no traveller in the Old Country who is not aware of the difference in the spirit and continuance of his horse, if he allows or denies him beans on his journey.

TURNIPS.

Cattle fed on Turnips and Cut-Straw, are better enabled to resist the confinement of our Winters; the growth of the young stock is not checked, and the cow in calf is brought to her time in a healthier and more natural state, than by any other kind of food, the expense is, also, much less than if fed on Bran and Hay; Turnips, however, in large quantities, ought not to be given to Milch Cows, as they impart a disagreeable flavor to their produce.

The above Report is certainly gratifying, when it is considered these improvements are occurring in our own immediate neighbourhood, and amongst our own people, and the Committee, previous to resigning their trust into the hands of their successors, beg to state, that—

The Government, not satisfied with the workings of their District and County Societies, appointed a Committee to inquire into the state of Agriculture in Lower Canada; this Committee recommend the District Societies to be done away with altogether, and the County Societies to be placed under the control of a superintendent of Agriculture. The Government Committee recommend:—

“Firstly,—County Societies. Secondly,—The choice of Prizes to be granted at the different Exhibitions. Thirdly,—the establishment of Agricultural Schools and Model Farms in our Colleges and Academies. Fourthly,—The publication of Elementary Treatises on Agriculture. Fifthly,—The publication of a Journal, together with the establishment of a Library and Public Seed Depot,—Sixthly,—The appointment of Superintendants of Agriculture.”

In conclusion, your Committee beg to return their thanks for the support they have met with from the public generally, and in reporting to you, that the District of Quebec possesses some of the finest Cattle and the best Seed in the Province, they believe they are not overstating matters.

By the Accounts of the Society, it appears there is a balance of a few pounds to the credit of the Association.

The Report having been read, it was moved by Mr. G. Douglas, seconded by Mr. Davidson,—

That the Report just read be received and adopted, and that the newspapers of this city be requested to publish the same.

Moved by J. Musson, Esq., seconded by Mr. C. Wilson,—

That the following gentlemen do form a Committee for the ensuing year:—

Sir H. Caldwell, Capt. Rhodes, Messrs. Galna, P. Patterson, H. Burstall, W. Wakeham, J. Porter, C. Wilson, D. Gilmour, A. Young, John West, W. H. Tilstone, J. Musson, Capt. Sewell, Lieut. Ross, R. N., Messrs. Dinning, Thos. Gibb, and Geo. Douglas, M. D.

Moved by W. Patterson, Esq., seconded by R. Symes Esq.,—

That the thanks of this Society are due to the President and the other officers for their great exertions during the two past Seasons.

W. RHODES,
Vice President and Secy.

N. B.—The public are respectfully informed that a minimum subscription of one Dollar a year constitutes a Member of the Society.

W. R.

Quebec, Feby. 1st, 1851.

AGRICULTURE IN LANCASHIRE.

We have seen a Report from the "Times" Commissioner, of the Agriculture of Lancashire, dated the 26th October last, that is very interesting, and instructive also, for farmers in Canada, though thousands of miles distant from Lancashire. It might perhaps be considered out of place to copy the whole "Report," but we give a few extracts from the Commissioner's description of the farm of Mr. Longton of Rainhill, 7 miles from Liverpool.

"The farm consists of about 160 acres. The soil is partly a strong loam, with clay subsoil, and part a sandy loam, on a porous subsoil; the surface gently undulated; and the whole has been drained by the tenant within the last ten years. The main drains are laid with tiles and slate soles, the others are made at intervals of 21 feet apart, and from 32 to 36 inches in depth. These are filled one foot with cinders, which are got at the glass works, at St. Helen's, and cost 2s. a load. One load sufficing for 80 lineal yards of drain and are found very efficient and permanent, and not half so costly as the tiles. Mr. Longton's system of farming is,—1st, green crop, after grass,—2nd, wheat,—3rd, barley—seeding down with this crop,—4th, clover cut,—5th, grass cut for hay,—6th, grass again cut for hay, or pastured according to circumstances. He commences this rotation, by ploughing or skinning his grass land in Autumn, with a very light furrow, in which state it remains during the Winter. As early in Spring as the weather permits this furrow is cut to pieces by a sharp wheeled roller being passed across it; it is then well harrowed, and torn to pieces; then ploughed with a deep furrow, which, after the surface is thus

broken, is easily reduced; and then drawn into ridges 30 inches apart, into which are placed 20 tons of the best town dung per acre. On this the potatoe is planted; it receives the usual careful cultivation during the Summer, and as soon as the crop is removed in Autumn, the land is ploughed and drilled with wheat. This is sometimes but not always, followed by barley, though Mr. Longton is decidedly of opinion that barley after wheat is the best management with which he is acquainted. The barley is sown with a mixture of grass seeds and clover, which in the Autumn receives a dressing of 15 tons of night soil mixed with earth per acre. The seeds are mown the first year for hay, which is all sold. In Autumn the ground is again dressed with 15 tons of mixed manure, or with guano, and cut once the following season for hay. The after-math is pastured. If the roots appear good, it is again dressed in Autumn, with the same quantity of manure, and again cut for hay; if otherwise, it is pastured. The returns from this management has this year been as follows, viz:—

1. Potatoes, (a short crop), 220 measures of 90 lbs. each per acre, selling at present at 2s. 6d., the measure.

2. Wheat—40 (Liverpool) bushels, 70 lbs. each, of white wheat per acre; and upwards of 2 tons of straw; worth at present £2 per ton.

3. Barley—60 bushels per acre.

4. Seeds—first cut 2 tons per acre—second cut 1½ tons, selling at present at £5 per ton.

5. Grass Ley, yielding 1½ ton of hay, and excellent after-math for pasture.

6. Do—or pasture.

To obtain these returns Mr. Longton purchases annually 800 tons of the best town manure, besides what is made on the farm by horses and dairy stock; and what is collected of road side scrapings, old banks, &c.

His practice is to sell every thing his farm produces when it yields him a remunerative price, and to buy in return what is requisite to keep it on high condition. His horses are fed on steamed Egyptian beans and hay, each horse when at constant work consuming about a bushel of beans, (costing 3s.) per week.

The price of the best manure which used to be 8s. or 9s., is now only 5s. a ton, and this difference is a considerable item where so large a quantity is purchased.

There might be many examples given of farms in South Lancashire equally, or even more productive than this, where the soil is favourable and has been carefully drained, the yield of green crops and grass may be stimulated to any extent by the inexhaustible supplies of manure which Liverpool and the manufacturing towns afford. Mr. Rothwell in his "Report" gives

two instances where farms within six miles of Manchester the first 156 acres in extent for which two thousand tons of manure were purchased; the second 165 acres, for which 1360 tons of manure were purchased in one year; and in both cases with amply remunerative results. The crops of Swedish Turnips produced in this country cannot be excelled in any part of the Kingdom—40 ton an acre, in good seasons and under the best management, being quite common. Such a crop may at this moment be seen on the highly improved farm of Dr. Sillar, of Kaenford; though this year the season has not been very favourable and the crop is in general much below an average. The humidity of the climate is favourable to the culture of green crops, the farmer has an ample command of manure, he has markets on every side of him for their sale, and he who has made the most use of those natural advantages has met with the most success.

The rotation of crops adopted by the best farmers in South Lancashire will surprise those who have been accustomed to consider any departure from the alternate system of corn and green crops erroneous. Among many the golden rule of farming is that no two white crops shall follow in immediate succession; but the successful practice of a contrary system in this district may teach us how vain it is to prescribe the same rules for totally different circumstances, the same husbandry for the climate of the eastern side of the island with its 10 inches of rain per annum, as for the western side with its 40 inches of rain. The true test of any system is its continued success, and the practice of the best farmers in this district, and those whose farms are in the highest state of cultivation, producing crops of all kinds which would astonish some of the wisest sticklers for rotations combine in attesting the advantage in every point of view in taking a crop, either of barley or oats, immediately after the wheat crop. The four course farmer takes his crop in this succession—clover, wheat, turnips, barley. The Lancashire farmer prefers it thus: grass, green crops, wheat, oats, or barley, his two green crops follow one another, and his two white crops the same."

The Lancashire system, of the green root crop following grass, was the plan we invariably followed so long as potatoes could be cultivated without risk of disease affecting them, but we only look one white crop after, and then seeded down with grass seed.

JOURNAL OF THE YORKSHIRE AGRICULTURAL SOCIETY. (No. 6.)

Mr. HANNAM contributes a most excellent paper "On Waste Manures," from which we extract the following, "On the Formation of Tanks:—"

Mr. H. S. Thompson, of Kirby Hall, at the last meeting of the Yorkshire Agricultural Society, at Doncaster, recommended the plan he adopted, which was "to have a pit dug in the earth in which to throw the manure, instead of having it piled up on a heap. The bottom of the pit is watertight, and has a slope towards the centre, where a tank is placed so as to receive the drainings from the manure. These drainings are frequently poured over the manure, so as to keep up a regular, but not excessive fermentation. He was in the habit of collecting all the couch-grass, stubble, and other vegetable refuse which the farm afforded, and spreading it on the bottom of the pit to the depth of six or eight inches. This, when well soaked with the liquor that drained from the manure which was carted upon it, and fermented together with that manure, was, he believed, as good as any other portion of the heap. In this way he had last year on a farm of 200 acres of arable land increased his manure by 200 single-horse loads, which was equivalent to four additional loads per acre for his fallow crops. If the manure was wanted for immediate use, it should be lightly thrown together, and after being well soaked with tank liquor, have a thin covering of soil to absorb the grass which would otherwise escape. In this case it must be carefully watched and well watered, from time to time, to prevent the fermentation from becoming excessive. If the manure is to be kept six months or more, it should be made solid by carting over it, and have a thick covering of soil, which would nearly exclude the air. In this way manure may be preserved for a year almost without loss. In very dry weather, the drainings from the manure are not sufficient to keep it moist, and it becomes necessary to saturate it with some other liquid. If the farmer has other tanks on his premises, it would be better to use their contents for this purpose; but where such are not at hand, plain water may be used, and has been found to answer exceedingly well."

Having had the pleasure of examining this process, I may add in explanation, that the pit is merely an excavation, similar to a shallow gravel quarry, one side being sloped away for the purpose of convenience in emptying it of manure;—hence the cost would be slight. In some situations the gravel taken out would pay for the labour, in others the soil would be of great use, for the purpose of covering the manure (when intended to be kept fresh,) or as an absorbent for the liquid and gaseous waste.

Mr. Thompson's pit is formed that the liquid filters gradually into a small well or tank, at the bottom of the excavation,—this tank being merely a cutting, about six feet deep, six long, and three wide. Of course, when the compost is made in the pit, the tank is left uncovered, the manure being piled round it, so that the liquor may be

laded out and spread upon the compost. When the manure has to remain in the pit for a length of time, it is generally covered with soil or other absorbent matters, by which means it is kept fresh. Indeed, so well is the object effected, and all gaseous e-scape prevented, that nine out of ten individuals would walk over the pit without knowing that there was such a store of rich manure under their feet.

Mr. T. has also a capacious tank, in which the liquid from the sheds and the yard is collected. This tank, however, is totally unconnected with the compost pit.

Of the various plans which we have examined, Mr. Thompson's is most entitled to our notice. And this not merely because it is in practical operation, and has shown beneficial results of which we have abundant evidence, but because it is calculated to secure each of the advantages flowing from the other methods, without their disadvantages. For instance, it affords us the means, not only of collecting the waste fertilizers, but also of preserving them, and of using them in conformity with the principle best adapted to English agriculture, viz., *that of concentrating them as far as possible in our farm yard compost, or using them singly, at option.*

In the *modus operandi* of this plan there are, however, certain defects. They do not belong to the system, but are errors of arrangement, and as such may be remedied. One of these errors is in the position and locality of the liquid manure tank, which is at some distance from the compost-pit. Owing to this circumstance the solid manure is only *saturated with the liquid that it brings with it from the yard*, except at the expense of extra cartage from the tank. In cases, therefore, when the drainings from the pit are not sufficient to moisten the compost, (a circumstance which Mr. Thompson states does not happen) or when we may have a quantity of dry vegetable matter, which is slow of decomposition, to form into compost, we must either take the trouble of frequently carrying the liquid from the tank to the pit or (what may equally be troublesome, and must be always a bad practice, when liquid from the yard can by any means be obtained,) adopt Mr T.'s own alternative, and "*use plain water.*"

Were the tank formed near the pit, this evil would be removed; the drainings from the fold yard would be quite sufficient for saturating the compost, and the work would be performed with little trouble. It may be said that nothing can be done without trouble, and that the carriage of liquid would be amply re-paid in this case. This may be true; but let it not be forgotten that, strictly speaking, if we are ever so well remunerated for spending a week over any work, we are much better paid if by any means we can perform it in half the time. But it is not on this account that unnecessary trouble

is objectionable in a plan like this, but *because it too often leads to more serious evils.* Thus, say we have a compost requiring frequent applications of the liquid, and it is a work demanding a little extra preparation, it is perhaps accomplished once properly; next time, however, it may happen that we are busy, and it is hurried over, and only half done; on the next occasion, perhaps, time cannot be found to attempt to do it; and so on, till at last it is forgotten altogether. We do not say that this would be a common case, when, however, we can so easily prevent the probability of it happening at all, it is our duty so to do.

Having now seen upon what principle our system of economy should be based, and how far the various measures proposed are calculated to carry out that principle, we are in a situation to say how, and by what particular means, that object may be generally effected, and the waste manure of every farm properly economised. To accomplish this thoroughly will require an arrangement more comprehensive than any yet detailed. A careful examination, however, of the advantages and disadvantages of the preceding plans warrant us in asserting that it may be done, both effectually and economically, by attending to the following suggestions, —

1. Let all the buildings round the farm-yard and straw-folds be spouted, and the delivering tubes so arranged that the water may be made to flow into the yard or not, at the option of the farmer. This may be effected by bringing the end of the spout over a drain, which may be left open or closed, as he may wish the water to escape from the yard or not.

2. Let the farm-yard, if possible, be made slightly concave, so that the liquid may permeate the mass, and make to the centre.

3. Make drains from every stable, cowshed, &c. and from the kitchen into the manure-yard.

4. Select a shady place, if possible on the north side of a hedge or wall, where it is convenient to cut the manure to, when it is removed during the winter and spring from the fold. Mark out a surface sufficiently large to hold in a heap all the manure made during winter, and form a compost couch of this size, and two feet deep. Divide this couch into three sections, by two rows of flags or bricks. Make the bottom of each couch incline, so that the liquid from the manure may gradually fall to the front side.

5. Next cut a drain alongside, and in front of the couch, with an inlet from each division, through which the liquid may flow into the drain, and fix a sluice at each inlet.

6. Make a capacious tank on any convenient side of the couch, and connect it with the drain which runs alongside the couch, so that the liquid from the couch may run into the tank.

7. Make a drain from the bottom of the farm-yard into the tank, and fix a sluice, so that the liquid from the yard may be let into the tank or not, at pleasure.

8. Fix a pump over the tank, and connect the nozzle with a wooden spout, fixed so as to traverse above each division of the couch.

9. Bore a hole through the spout over each section of the couch; in each section put a plug on the top side of the spout; also over each hole affix on the under side of the spout a leathern nozzle or delivering tube, two or three feet long; by means of which arrangements the liquid from the tank may be directed to any part of the couch.

These arrangements may be made at a slight expense, in almost any locality, and worked with little trouble by the farmer, so as to give him a perfect command over his manure; that is, to enable him only to preserve the fertilizers which are usually wasted, and to concentrate them in the form of compost or otherwise, at pleasure; but also to make and preserve this compound for any length of time, in whatever condition he may think fit.

Thus, to PREVENT WASTE, the process is as follows:—the liquid drainage from the sheds and house, which is not wanted in the yard, and also that from the manure when carted out of the yard into the couch, is collected in the tank. One section of the couch forms a place of deposit for all vegetable refuse which can be gathered together; while gaseous waste, arising from too active fermentation in the cattle-yard, may be prevented by the power which the spouts and sluice-drain gives us of keeping the manure dry or wet at pleasure; for, be it remembered, that while a little moisture encourages decomposition, a liberal supply prevents or retards it, and also absorbs a large portion of the ammonia which is evolved during the decomposition which does take place; for ammonia and all its compounds are easily soluble. When therefore the manure is led out of the yard by placing it in one section of the couch, we can, if we wish the manure to be kept fresh, have a liberal supply of liquid from the tank, and can let it remain in the couch as long as we think fit, by keeping the sluice at the junction of the couch, and the drain which leads to the tank, closed. By carting over the heap, making it as solid as possible, and covering it up with ashes, charcoal, peat, earth, or any other absorbent, the loss of ammonia will be very slight. When, however, we require the manure in the couch to undergo very quick and active fermentation, and are compelled to throw the manure lightly together, and to drain away unnecessary moisture, our best method of preventing gaseous escape is to cover the heap lightly over with ashes, sawdust, peat, charcoal, or other absorbent, and to keep this coating well saturated with sulphuric acid and water, sap a weak mixture of ten gallons of water to one of acid.....

TO COMBINE THE VARIOUS WASTE MATTERS with our ordinary compost, the system affords us every facility. Thus, the liquid from all the buildings flowing into the tank, we have nothing more to do than to lead our manure from the yard upon one of the beds of the couch, where we can, by taking out the plug from the spout over the portion we wish to saturate, pump upon it, if we think proper, the whole contents of the tank. With this compost we can also mix the waste vegetables and other refuse, which have been collected in the other section of the couch, or can, by opening the spout from the pump, make a compost of it, with the liquid from the tank only. The gaseous matters are in this or other cases preserved and combined with the bulk of the compost by the means before detailed.

To make and preserve our compost manure in whatever condition we may wish it to be for any length of time, is another of the advantages which we have said the system gives us, and it is thus secured. In the farm-yard, by opening the spouts and stopping the drain leading to the tank, or vice versa, we can retard or accelerate the decomposition of any vegetable matter; and, when we think fit, can lead it out into the couch, where we prepare it, and preserve it in any condition we may think proper. Thus say we have one portion which we wish to keep fresh for a length of time; we have nothing more to do than to saturate it well with the liquid from the pump, and to keep it pressed down and thoroughly wet, and covered with earth or vegetable refuse, so that the atmosphere cannot have access to it, when our project will be effected. Another portion, which we may wish to decompose thoroughly, we can place in the other section of the couch, throwing it lightly together, and frequently applying the liquid from the tank. In this case the drain from the couch should be open, in order that it may return all the liquid that the compost does not absorb, and thus keep the manure from being too wet. Again, to make our compost in as good a condition as it can be for use, we can saturate it thoroughly with liquid from the tank, and apply it in as wet a condition as possible. By this means we excite a fresh action in the manure, which is of immediate benefit to the young crop (especially to turnips and green crops), and convey a stock of liquid food with scarcely any extra change. My own experiments, those of the late Arthur Young, and the practice of the Flemings (who moisten the small heaps of compost laid out at regular distances in the field, and as soon as they begin to heat plough them in), are proofs of the beneficial effects of this process.

In executing the various processes, the means which have been laid down for the prevention of gaseous waste may be employed. And, lastly, after having preserved all waste:—concentrated as far as possible the

fertilizing matters of the farm in our manure heaps;—preserved them as long as we think proper;—and applied them in the condition best adapted to promote vegetation, our tank supplies us with the means of applying a liquid dressing to any light sandy soil, or to any crop which we think requires it, or whenever our solid matters for making compost are exhausted.

STANDARD FRUIT TREES.

It frequently happens that gardens are nearly all that could be desired, so as situation is concerned, where the soil, or rather what is indefinitely termed the subsoil, is of the very worst description—often so cold and wet that it is impossible, even under the very best management, to get fruit trees to do any good; and where the subsoil is of a cold retentive nature, no amount of draining will render it fit for fruit tree culture.

Recourse has been had, in such situations, to what may be called the knoll system of planting, and with no doubt a certain degree of success, but only for a short time; in place of which, let a ridge three or four feet high be thrown up along the sides of the principal walks of the garden, and on the top of the ridge, plant very dwarf standards. A broad circular tile ought to be put under each plant, but it would be much better to run the tiles on the top of the ridge the whole length, laying them quite close to each other, which would be a sure guarantee against what is technically termed tap-roots, which ought always to be guarded against. The trees, as already remarked, should be very dwarf, not more than 12 or 15 inches high, and no upright growth allowed. All strong growing shoots should be pegged down to about the same distance from the ground as the height of the stem. Much advantage will be gained in training standard fruit trees in this manner, also an easy access to pruning and protecting the blossom by sticking in branches or otherwise. It must be observed that the tiles are to be put on before the ridge is completed, about nine inches under the trees at planting. Fruit trees treated in this manner, would not only prove fruitful, from the roots being kept from the cold and wet, but the fruit will be both larger and higher flavored, as it may be said they will be in a much warmer climate than on the top of a tree 20 feet high, neither will they require to be dashed almost to pieces in getting them off the tree. About twenty feet will be a proper distance at which to plant the trees from each other, and little more growth ought to be allowed them to cover the banks. All upright growing shoots, which there is not room to peg down, should be pinched off in summer. In pruning, they should be trained to fruit on short natural spurs, nearly in the same manner as properly managed

trees on espaliers or walls, unless the soil is almost as poor as a gravel walk, no manure ought to be put in when making up the ridge. If manure is required, let the surface be stirred with a fork, and top-dressed with well decomposed manure and rich earth. Stone fruit might be well grown in this manner, by covering the banks with tile. Some may be disposed to say that, in dry seasons, the tree would not have sufficient moisture at the roots, being raised so high above the level. This I feel is a groundless fear. Let any one whose experience will carry them back to the ever-memorable season of 1826, when we had the most heat and the least rain ever known in this country, when fruit of every description was superior, both in size and flavor, to what it was ever known to be; and it was not by artificial watering that fruit trees were carried on, for water was too precious to be applied to any such purpose; and it must be borne in mind, that in very damp situations a vast amount of moisture is drawn to the surface by capillary attraction; and if it is found necessary, in very dry seasons, to water, by forking over the surface, a sufficiency can easily be given from the garden engine.

JASPER WALLACE.

Dunimarle, 12th Dec. 1850.

MISCELLANEOUS.

A REMEDY FOR CHILLBLAINS AND TOOTHACHE.—By A. TURNBULL, M. D.—At this season few diseases are so general as chillblains, and the plans that are generally employed for their removal are seldom attended with more than very slight advantage to the sufferers. It is a disease that attacks most generally females and delicate children, and those of a languid circulation. The very numerous and various medicines which have been from time to time employed, prove very clearly that no very effective or successful plan of treatment has hitherto been found. Such is the present state of treatment both of chillblains and toothache. My plan of treatment is simply to saturate a piece of sponge or flannel with the concentrated tincture of capsicum, and to rub well over the seat of the chillblains until such time as a strong tingling or electrical feeling is produced. This medicine possesses an extraordinary power in removing congestion by its action upon the nerves and circulation. This application ought to be continued daily until the disease is removed; relief will be experienced on the very first application, and frequently there will be a total removal of the disease after the second or third. This of course depends upon the severity of the case. This embrocation, when rubbed, never produces excoriation if the skin is not broken. The manner of using it for toothache, is by putting a drop or two of the tincture on cotton, and applying it to the part affected—the relief will be immediate.

At a Turnip and Root Show in England, in December last, the following were the largest products per acre of Bulbs, the tops and fibres closely cut off:—

Swedfish Turnips,.....	24 tons,	2½ cwt.
White Turnips,.....	23 “	5½ “
Mangold Wurtzel,.....	28 “	11½ “
Hybrid Turnips,.....	20 “	11½ “
Belgian Carrots,.....	26 “	16½ “

RATHER EQUIVOCAL.—A Negro once gave the following toast: “The Governor ob de State; he come in wid berry little opposition; he got out wid none at all.”

OINTMENT FOR HEALING.—Turner's Cerate, four ounces; White Vitriol, powdered, half a drachm; Lard, four ounces—mixed.

Diseases of the mouth or Lampas is an enlargement of the ridges of the palate. It is usual to burn this part with a hot iron, but a mild dose of physic, or a gentle alterative, would prove a more certain remedy, rubbing at the same time the ridges of the palate with bay salt, or with vinegar. Cream of Tartar and Nitre, of each half an ounce, is a gentle alterative, given in a mash of bran.

GRIPES IN HORSES.—Mr. Mechi says, “We need never lose a horse by gripes, provided we administer, when first attacked, one ounce each of Spiits of Nitre and Paregoric, in a quart of warm water.

IOCF LIQUID FOR HORSES.—Oil of Turpentine, four ounces; Tar, four ounces; Whale Oil, eight ounces—mixed together. This mixture softens and toughens the hoofs, when brushed over them night and morning.

FOOT STOPPINGS.—Horse and cow dung, each about 2 lbs., mixed with half a pound of tar.

GREASE FOR CARTS, &c.—The following composition is recommended by a writer in the *Independence Belge*, for greasing carts and other agricultural implements:—“Take 1 lb. of caoutchouc, dissolved in a proper liquid, ¼ lb. of gelatine, 2½ lbs. of carbonate of Soda, 11 quarts of animal or vegetable oil, and as much water—boil the water with the carbonate of soda and gelatine, then add the caoutchouc and the oil, stir the mixture well until it forms a homogeneous liquid. The above proportions may be varied, and if the caoutchouc and oil are previously purified, the carbonate of soda is unnecessary. The above mixture will be found useful, not only for greasing carts, &c., but for keeping the farm harness in good order.”

Editor of the “Agricultural Journal and Transactions of the Lower Canada Agricultural Society,” WILLIAM EVANS, Esq., Secretary of the Society, to whom all communications connected with the editorial department of the Journal are to be addressed, and if by mail, post paid.

Complete files of the Agricultural Journal in English and French, from the commencement, unbound, and half-bound, may be had at the Office of the Society on moderate terms.

Also, half bound copies of Evans' Treatise on Agriculture, with the supplementary volume in both languages, together with complete files of the Agricultural Journal, from 1844 to 1846, both included.

NOTICE.

IN conformity to the 9th Section of the Act of Incorporation of the Lower Canada Agricultural Society, Notice is hereby given by the Directors of the Society, that a SPECIAL GENERAL MEETING of the MEMBERS will take place at their ROOMS, No. 25, Notre Dame Street, Montreal, on TUESDAY, the 18th day of MARCH, instant, at ELEVEN o'clock, A. M., for the purpose of revising and amending the By-laws of the Society.

By order of the Directors.

WM. EVANS,

Secy. L. C. A. S.

Montreal, March 1, 1851.

LOWER CANADA AGRICULTURAL SOCIETY.

Office of the Society, at No. 25, Notre Dame Street, Montreal, opposite the CITY HALL, and over the SEED STORE of Mr. George Shepherd, Seedsman of the Society, where the Secretary of the Society, WM. EVANS, Esq., is in attendance daily, from 10 to 1 o'clock.

AGRICULTURAL AND GARDEN SEED STORE,

No. 25, NOTRE DAME STREET,
Montreal.

THE Subscriber, SEEDSMAN to the LOWER CANADA AGRICULTURAL SOCIETY, begs to acquaint his friends and customers that he has an extensive assortment of AGRICULTURAL and GARDEN SEEDS, and PLANTS, new, and of the best quality, which will be disposed of on as favourable terms as any person in the trade. As he obtains a large portion of his Seeds from Lawson & Sons, of Edinburgh, Seedsmen to the Highland and Agricultural Society of Scotland, he expects to be able to give general satisfaction to all who favor him with their custom.

The following Seeds will be supplied to Agricultural Societies on moderate terms, viz:—

English Red Clover; Dutch Red and White Clover; Lucern; Skirving's Purple Top Swedish Turnip; Laing's do. do.; Skirving's Yellow Bullock Turnip; Long Red Mangle Wurtzel; Yellow Globe do.; Belgium White Carrot; Attingham Long Red Carrot; Long Orange Carrot.

A large proportion of the Carrot Seed has been raised in Canada and shown at the late Exhibition, for which a premium was awarded to the Subscriber.

The Subscriber has also imported Lyden's Patent Spades, Shovels, and Digging Forks, and he has also an excellent collection of Garden Tools.

GEORGE SHEPHERD.

Montreal, February 24, 1851.

While the Publisher of this Journal is in no way concerned in making selections for the preceding pages, or responsible for the Editorial articles, he is desirous of embodying as much interest and value in the work as his prerogative will admit of. He will therefore appropriate, for the future, his advertising columns to reprinting useful articles which may be acceptable to subscribers.

HORTICULTURE.

(From the Albany Cultivator.)

TRIMMING DOWN LISTS.—Thomas Rivers, the celebrated English nurseryman, has fruited about one thousand varieties of the pear, and out of this great assemblage has selected only four for raising extensively for market on his own grounds, viz: *Bartlett*, *Beurre d'Amalis*, *Capiumont*, and *Louise Bonne of Jersey*. In this country, the Bartlett and Louise Bonne of Jersey, are not excelled for the same purpose; the other two might be profitably superceded, as they are not of first quality here.

EARLY JOE APPLE.—So very agreeable to the taste is this new delicious summer fruit, that we have heard Jonathan Buel of East Bloomfield, N. Y., who has long cultivated it, remark that he had seen a man eat a half peck of them at one time, by taking up one after another, before he was aware of the quantity he had consumed.

SHORTENING-IN THE PEACH.—We lately witnessed an interesting example of this operation performed by the frosts of winter. A tree of the Early Anne, planted about ten years ago, stood in so frosty a locality, that about one-half of each of its annual shoots were destroyed by frost every winter, this variety being more tender than most sorts. The consequence was that this tree was kept in a comparatively neat and compact form, with the bearing shoots quite evenly distributed throughout the head. Other sorts more hardy, standing side by side, and which had not been subjected to this natural shortening-in, had extended their principal branches into long and naked arms, with the fruit-bearing portions at their extremities only.

GRAFTING WEDGES.—In cleft-grafting, as every grafter knows, a good iron or steel wedge is wanted, to keep the slit open till the graft is inserted, and accurately adjusted. One of the largest sized cut-nails or cut-spikes, ground to a wedge upon a grindstone, has been found one of the cheapest and most convenient for this purpose, the head of the nail serving a good purpose in withdrawing the wedge.

RECOVERING DRIED GRAFTS.—It often happens that grafts of particular fruits are received in a dried or withered condition from being badly packed; and being supposed to be worthless, are thrown away. The writer once received in autumn a small package of a new and rare sort of apple, from a distance of some hundreds of miles, without any protection at all, and they were quite thoroughly *seasoned*. They were encased in moss, and buried a few inches beneath the surface of the earth on a dry spot of ground. By spring they had gradually imbibed moisture, and had become plump again, and on being set, every graft grew. Efforts of this kind often fail in consequence of applying the moisture too copiously and suddenly. Shoots in so withered a condition should receive it so gradually as to require some weeks at least for the completion of the process.

SHORT LISTS.—Samuel Walker, President of the Massachusetts Horticultural Society, says that if he were confined to only one sort of pear, he would choose the *Vicar of Winsfield*, from its free growth, productiveness, fair and large fruit, and long continuance. F. R. Elliott, of Cleveland, says that were he to chose but one variety of the apple, he should take the *Belmont*. Robert Manning of Salem, Mass., gives as the three best pears, the Bartlett, Autumn Paradise, and Winter Nelis; and B. V. French, of Braintree, Mass., regards as the three most desirable apples, the Porter, Rhode Island Greening, and Baldwin.

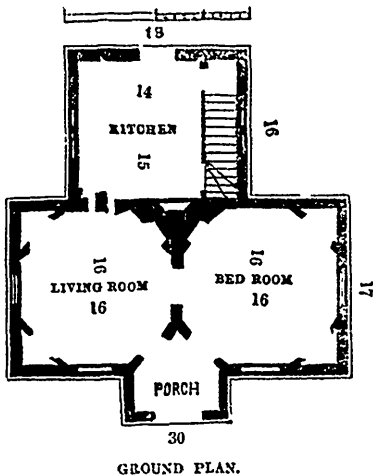
HOW LONG WILL BUDS KEEP?—This inquiry is often made, how long will scions for budding keep with safety, and to what distance may they be sent? The answer must vary exceedingly with circumstances. If the growth is green and succulent, and the buds have not become matured, they are sometimes sensibly injured by being kept two or three days only; while on the other hand, if the wood is well ripened, and the buds plump and hardened, they may keep several weeks without injury. In some instances we have received buds from a distance late in summer, and being well matured we have kept a part over till spring, and set them as grafts with success.

INFLUENCE OF GRAFT ON STOCK.—Dr. Kittland says: "A graft of the Newtown Pippin will invariably render the bark of the stock rough and black, (the habit of the variety,) within three years after its insertion." Nurserymen, who by digging up trees, become familiar with the growth of the roots, often notice that certain sorts always have certain peculiarities, on stocks of whatever sorts. For instance, the Yellow Bellflower always has fine, fibrous, horizontal roots; the Gravenstein has large, strong descending roots; the Yellow Spanish Cherry is remarkable for its large heavy roots, whatever the stock may be.

SHORTENING-BACK IN TRANSPLANTING.—The Horticulturist states that an orchardist on the Hudson tried an experiment by planting out 78 peach trees of large size, three years growth from the bud. One half were headed back so as to reduce the buds one-half; the rest were unpruned. The season was dry, and *twelve* of the 3° unpruned trees, perished, and only *one* of those that were headed back. This one would probably have survived, had three-fourths instead of one-half of the buds been removed.



DESIGN FOR A COTTAGE.



GROUND PLAN.

The accompanying design of a small cottage, in a simple, and yet somewhat ornamental style, which we think best adapted for the purpose when *wood* is the material to be employed in building.

The roof projects two feet, showing the ends of the rafters as brackets. The exterior is covered with the *vertical weather-boarding*.

For a cottage of this class, we would be content with unplanned plank, the joints covered with the necessary strip or fillet, and the whole well painted and sanded.

A glance at the plan of the first floor, will show that its accommodation is very compactly arranged. By placing all the flues in one stack, no heat is lost in winter; and by cutting off the corners of the two principal rooms, convenient closets are afforded. As, in a house of this class, the kitchen is usually the room most constantly occupied by the family, there is no objection to the entrance to the stairs being placed within it.

The plan of the second floor shows four good bed-rooms, which, with the best bedroom on the first floor, makes five sleeping apartments. This would enable a family, consisting of a number of persons, to live comfortably in a house of this size.

In portions of the country where timber is abundant, this cottage may be built at a cost of from £100 to £150.—*Horticulturist*.

THE AGRICULTURAL JOURNAL AND TRANSACTIONS OF THE LOWER CANADA AGRICULTURAL SOCIETY, in the French and English languages, will hereafter be published by the Subscriber, to whom all COMMUNICATIONS relative to SUBSCRIPTIONS, ADVERTISEMENTS, and all business matters connected with the past or forthcoming volumes of the Journal, must be made.

The Journal contains 32 pages Monthly, is published at \$1 per annum, and any one obtaining new Subscribers, on remitting \$4, will be entitled to Five Copies of the Journal for one year.

Agents and Subscribers are required to remit immediately to the Publisher the amount due the Society. Also, a CORRECT LIST of SUBSCRIBERS in their respective Localities.

Postmasters will confer a favor by returning to the Publisher all copies of the *Agricultural Journal* not taken by the parties to whom they are addressed, with the name of the party refusing and the Post Office marked thereon.

All Subscribers discontinuing the Journal will please return the Copy sent, to the Undersigned, stating from whom and whence returned.

The Subscriber also publishes "THE SNOW DROP." (a Juvenile Magazine,) at \$1 per annum. The same Commission will be allowed to those who obtain six or more subscribers.

The Subscriber is AGENT for all the important AMERICAN MAGAZINES and REPRINTS, embracing the highest departments of Literature, Science and Art; which he delivers in the principal Towns of Canada East, at New York prices.

Responsible Agents wanted to canvass for the SNOW DROP, AGRICULTURAL JOURNAL, and other Works, to whom a liberal Commission will be allowed.

ROBERT W. LAY.

193, Notre Dame Street, Montreal.

February, 1851.

MONTREAL:—Printed by JOHN LOVELL, St. Nicholas Street.