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AGRICULTURAL JOURNAL,

AND

TRANSACTIONS

OF THE

Lower Canada Agricultural Society.

VOL. 8. MONTREAL, FEBRUARY, 1850. NO. 8.

The Lower Canada Agricultural Society, although they have not had a Cattle Show, or other Exhibition, are entitled to the credit of having effected much good by the circulation of their Journal to all parts of Lower Canada. There is unquestionable proof of the fact, in the hands of the Society, that the Journal has created a considerable interest in most sections of the country, for the improvement of agriculture, and this interest could scarcely have been created by any other means. They have, in the next place, through their seedsman, Mr. George Shepherd, had a large quantity of agricultural seeds of the best quality, imported, and sold at first cost prices, as the Provincial duties were not charged upon them. These seeds consisted of seven thousand pounds weight of clover, from England, France and Holland; white clover, mangel wurtzel, Swedish and other turnip seeds, carrots, parsnips, cabbages, &c. These seeds have been disposed of to members of the Lower Canada Agricultural Society, to County Societies, and to farmers from all parts of the country, who, we believe, are well pleased with the results obtained from the seeds sown. The great advantage of European clover-seeds is, that it does not come to maturity so early as the American clover-seed; and will not be fit to cut before the timothy is fit for the scythe. We have constantly seen the clover grown from American or Canadian seed, ripen much in advance of the timothy, particularly in light, dry soils, and dry seasons. This is a considerable loss, as the clover loses some of its best qualities when the flowers and leaves drop off before they can be taken to the barn. The Feltercarn variety of Swedish turnips are considered a very superior variety, and the seed cost nearly double the price of any other purple top Swedish turnip-seed. Of this seed a considerable quantity was imported and sold, and has given full satisfaction, we are told, to those who purchased it. For the present year, a part of the supply of seeds has already arrived at New York, and will be in Montreal as soon as the navigation opens in spring. John Dodds, Esq., of Petite Côte, has ordered a large quantity of the Feltercarn and Skirving's purple top Swedish turnip-seeds from one of the first growers in Scotland, for the seedsman of the Society. Seven thousand pounds of red clover, and one thousand pounds of white clover, have also been ordered from the long established house of Van Eaden & Co., Haarlem, Holland, which will be for sale at reduced prices, as last year. It would be very desirable that farmers who purchased any of the clover-seeds sold by the seedsman of the Society, last year, should acquaint us with the result, and their opinions of the clovers. We have further to state, that in any parish where there are twenty-five subscribers to the Agricultural Journal, or as members of the Lower Canada Agricultural Society, twenty packages of garden seeds, sufficient to sow half an acre, shall be placed at the disposal of the clergyman of the parish for distribution to the most indigent of the parishioners, whose circumstances might preclude the possibility of their purchasing those seeds for themselves. The seed to consist of French early cabbage, do. late Quintal do., choul

rabbi, turnip-rooted cabbage, purple top turnip, beet-root, carrot, parsnip, onion, and lettuces. These seeds to be given to the parishes entitled to them, on application by the clergyman to the seedsman of the Society, and we shall give the names of the several parishes in the March number of the Journal. If the parishes obtaining these seeds were to offer a few small premiums to those poor persons who might receive them, for the best produce raised from the seed, we think it would have a very beneficial effect, and encourage industry amongst the poorest classes, and where it is most required. If the successful competitors' names should be reported to us, we shall give them in the Journal. With such a favourable climate and soil as we have for gardening, a family might, by industry, raise a quantity of vegetables in even a small garden, that would greatly assist them, and the necessary work need not interfere much with their occupations. Manure might also be found very readily, by making a compost of all the wastes of the house and family, ashes, &c., mixed up with road scrapings and other waste earth. Liquid manure applied during the summer would also have an excellent effect, and could be easily collected. We strongly recommend this matter to consideration. The cause of offering the distribution of these seeds gratuitously to parishes, where there are twenty-five subscribers to the Society or their Journal, is, that in such parishes there is an evident interest felt in the object which the Society are so anxious to promote, namely, the improvement of agriculture in Lower Canada.

We are obliged to Mr. William Boa for his communication over his own signature respecting his system of farming. We know Mr. Bow to be an excellent practical farmer, and have seen his farm constantly from his first purchase of it. We shall be glad to hear from him whenever he is disposed to write upon subjects connected with agriculture. He has, we conceive, much to his credit, come boldly forward to assist us to make this Journal useful. There are many other farmers might follow this good example, if they were so disposed, but they do not appear inclined to inform others of the good systems they practice, or the results of any particular cultivation or management they may have adopted in their practice. Others may be able to account for this, but we cannot.

To the Editor of the AGRICULTURAL JOURNAL.

VIRTUE ROADHEAD, *January* 22nd, 1850.

SIR,—I have been a practical farmer in Lower Canada for more than a quarter of a century; I am sorry to observe that although this is certainly an age of improvement, the Agriculture of this Province, during the last thirty years, has not advanced, but rather gone backwards; at least in that part of the country I am acquainted with, and in my own locality, which, as regards situation and soil, is not surpassed by any in the province, except the immediate precincts of a city, where manure can be had. Thirty years ago the pecuniary circumstances of the farmers were better, though farms produced more grain and kept more cattle than they have at present, except those farms that have come into the hands of British farmers, and perhaps some of their immediate neighbours. The French Canadian farmers at one time almost universally followed the same routine; this was alternate grain and pasture. The ravages of the wheat fly and the introduction of distilleries amongst us, had the effect of making them give up their old plan, and few of them have as yet found out or adopted any better plan, but have gone from bad to worse; the want of wheat for several years, and the high prices given by the distillers for other grain, induced them to put away most of their horned cattle, and plough with horses, that they might put more of their land under crops every year, thinking that by encouraging the manufacture of intoxicating drinks, they were filling their pockets by selling everything from the farm that it produced. Now, after many years trial, the balance side of the sheet turns out entirely in favour of the distillers. It was of no consequence to them, what price they paid for grain, as long as the country took the whiskey at the distiller's own price, whereas the farmer, in

sowing nearly the whole extent of his farm every year, has been carrying on a continual scourging of its soil, as there is no root or green crops, raised for the purpose of feeding, and the straw, as well as grain, in many instances, is sold; there is very little manure made on the farms—the results of such a course may easily be seen to be ruinous. If this system is necessary in any business it is particularly so in farming. A want of it amongst us, I think, is one of the greatest drawbacks on the development of the Agricultural resources of Eastern Canada. Now I conceive it to be the interest of all, and your especial province, to lay before the farmers of Lower Canada, some plan by which they might, by their own labour and industry, restore and maintain the fertility of their own exhausted farms, and as I fear there is little other capital amongst us, this end can only be attained by directing this labour into proper channels. With a view to this end I humbly submit to you a miniature plan of a small farm, with the rotation of crops, that has been strictly acted upon for the last ten years; you will perceive that the rotation comprehends the whole extent of the arable land on the farm, and of course it is all brought into and kept in a clean and productive condition; and I hesitate not to affirm that this system if carefully acted upon, would, in six years, more than treble the annual agricultural products of the country. The rotation is as follows:—No. 1, green crops or fallow: No. 2, wheat or barley: No. 3, hay: No. 4, pasture: No. 5, pasture: No. 6, oats and peas; and round again; the drawing represents the actual condition of the farm in the summer of 1849; any person looking upon it could scarcely miss the tracks. Some of the practical results of this system, with the comparative value of some of the crops, may perhaps, prove useful or interesting to some of the readers of the Journal; the cultivation of root or green crops, for the purpose of feeding, may be considered the material foundation of agricultural improvement, and for the two following very obvious reasons:—first, root or green crops cannot be raised at all, but with good tillage and the complete destruction of weeds; secondly, all the broad leaved kinds are not great exhaus'ers of the soil, and may be considered as a kind of reservoir, by which the fertilizing elements of the atmosphere are collected and kept in the hands of the farmer, to be applied to the land at his discretion. I shall not enter on farther detail at present, except to show the results of the system on field No. 1. In the year 1842, I for the first time, (after French Canadian culture,) had this field ploughed, and sown, the one half with peas and the other with oats, but the land was so completely foul and exhausted, that the peas crop was not worth thrashing, the oats scarcely paid for reaping and thrashing; the year following it was cultivated under green crops and fallow, the whole manure made on the farm being applied to it. It has yielded good crops all round the course; 1849 brought it into the first stage of a second course, and has been cultivated under the following crops, the comparative value of which, I found, by measuring the land and weighing the produce, to be as follows, per arpent:—

	With Tops.			Without Tops.		
	tons.	cwts.	lbs.	tons.	cwts.	lbs.
Mangel wurzel, long red..	24	5	80	18	12	36
Carrots, red Albrongham	18	2	56	13	5	20
Turnips, white globe. . .	8	4	32	5	0	0
Swedish turnips	10	19	27	6	5	100
Potatoes, early white. . .				4	6	0

Horse beans, a failure, little more than twice the seed. Indian corn, cannot say exactly, as it is not all shelled yet, but I think between 50 and 60 minots per arpent.

I may here notice that I sowed a short red carrot, for which I have not got a name, but it was labeled large white Belgium; I sowed several rows of these through a field of red Albrongham for the purpose of proving the difference of their products; I raised the same length of two rows which grew side by side, and weighed them tops and roots, and found as follows: long 357 lbs, short 297 lbs, giving a balance of 50 lb. in favour of long without tops. I found of long 227 lbs., of short 230, giving a balance of 3 lb. in favour of short. I do not think I lost any thing by sowing the short carrot, but seedsmen ought to be cautioned against selling seeds, that are not true to their kind, or of a different kind to that which is ordered. I shall not atempt to give the money value of the above mentioned crops, as I believe the best market they can be brought to is to convert them into some exportable article on the farm, except where manure is easily got. I am not chemist enough to know the exact quantity of nutriment contained in the several

kinds. Neither can I positively say which is the best to cultivate as a preparation for the following crops of the course, as this will depend upon which is the least exhauster of the soil; to arrive at any conclusion would require the experiment to be carried out through the whole course. One thing, however, appears very evident—that is, the propriety of cultivating as great a variety of crops as the soil will admit of; as seasons are not all alike, one kind may fail while others may yield abundantly, the failure will be little felt.

Now, Sir, I do not pretend that a six years rotation is adapted to every kind of soil; on a very light or sandy soil it may be necessary to extend it to 7 or 8 years and perhaps more, or on a naturally very rich soil it may reduced to 5 or even 4 years, where manure can be got; but on a soil of medium capabilities, if depending on its own esources, less than six years rotation will not maintain its fertility.

If the contents of this paper should be considered worthy of a place in the Journal you may hear from me again. In the mean time I remain yours sincerely,

WILLIAM BOA.

To the Editor of the Lower Canada AGRICULTURAL JOURNAL.

SIR,—I was very glad to observe in your last Number the editorial allusions to the great benefit derivable from Lectures on Agriculture; and I would fain hope that the further agitation of so important and interesting a movement will not be allowed "to go to sleep," but that something may yet be done towards carrying the suggestion into practical effect, in spite of every obstacle. Nay, I see no good reason why one who has done so much for the improvement of Canadian husbandry as *the worthy Secretary of the Lower Canada Agricultural Society*, should not at once set the example, and thus, forthwith, make a beginning in earnest. Let the *fallow* ground be once broken by him, and I have no doubt others will soon follow in the same *furrow*, and much good be the result.

Up then, Mr. Editor, and be doing. Take half a sheet of foolscap, and at once dash off as a heading,

"SPEED THE PLOUGH."

"Programme of a Course of Lectures on Agricultural and Horticultural subjects, to be delivered in Montreal in the course of the present winter, in connection with the Provincial Agricultural and Montreal Horticultural Societies:

NO. OF LECTURES.	SUBJECT.	BY WHOM.	DATE.
1st Lecture,.....	Introductory,.....	(Say) Mr. A.	
2nd do.	On Horticulture,..	(Say) Mr. B.	
3rd do.	Agricultural,.....	Mr. C.	
4th do.	Horticultural,.....	Monsieur D.	
&c.	&c.	&c.	&c. &c.

And then look over your list of members and subscribers with an enquiring eye, and see whether, by taking staff in hand, and a little active peripatetic canvassing, you cannot pop upon at least five or six more out of "the whole bunch," who will be willing to lend a helping hand in so good a cause. Surely there can be no room for *utter* despair when we see the slumbering, sleepy-headed Natural History Society beginning to shake off its discreditable lethargy, and threatening to inflict a course of interesting miscellaneous lectures upon us.—But stop; I

must not say a word more against that worthy, though sadly sluggish fraternity, as it may be advisable to beg the use of their waste Lecture Room to sow some agricultural seeds in; so it would not be right to put them too much out of humour.

Nor is this altogether a mere flourish of speech; for who knows but, for want of better, a friend of mine, who shall at present be nameless, may contribute his humble mite in some shape or other—whether as rake, grubbing hoe, or scarifier, it is hard to tell—rather than the thing should fall to the ground altogether. In the meantime, I beg to call your attention to the annexed article from a New Brunswick paper, indicative of their beginning to be "wide awake" there, as well as of the good likely to result from the scientific labours of our talented friend, Professor Johnston, in that quarter—and which, for certain reasons, ought to put us more favoured Canadians to the blush. And should that not be sufficient, though, God knows, no friend to *Annexation*, let me bring to the recollection of yourself and readers the following paragraph in a late Upper Canada paper, as a specimen of *how* they "*learn*" to go a-head in agricultural, as well as other matters in the neighbouring State of New York:—"Our *countryman, Professor Johnston, of Durham, is engaged to deliver a Course of Lectures on the general relations of Science and Agriculture, before the* New York State Agricultural Society, *commencing early in January.*" Alas! for our boasted Patriotism!

After so long and perhaps too prosy a sermon, you will, I suspect, be rather glad than otherwise at my at last coming to a conclusion, by subscribing myself, at all events, your sincere well-wisher, and

Very obedient servant,

An Upper Canada Farmer.

Montreal, 11th January, 1850.

The article above alluded to is as follows:—

LOWER PROVINCES.

Mr. Johnston's Lecture upon the Agriculture and Capabilities of New Brunswick.—Mr. Johnston confirmed the statements which we have frequently heard respecting the capabilities of this Province as a farming country, and although in the estimation of some people his average of crops were rather high, still the conclusions were decidedly in favor of our neglected capabilities, and even calculated to stimulate the drooping hopes of our farmers; all we want is perseverance, industry, and information. Mr. Johnston directed attention to one of the prominent causes of failure, viz.; the waste of time, which drags in its train many other wastes. He gave a convincing illustration that a judicious farmer may hire labor advantageously, viz.: the sovereigns exhibited by one man is a proof that all other things being equal, similar profits may be realized by others.

Mr. J. commenced his lecture with a brief review of the importance of a knowledge of geology in determining the agricultural capabilities of a country, showing that the qualities of soils were dependent upon the character of the rocks from which those soils were originally formed by the process of crumbling, or decomposition, effected by the agency of natural causes. He then alluded to the qualities of the different soils, which he estimated by the quantity of hay they gave per acre, the probable population and stock they would support, the relative amount and value of crops in New Brunswick, Canada, New York, and Ohio, showing a conclusion decidedly in favor of this Province. He stated also that the wheat of this Province, if properly manufactured, was equal to the best Genesee. He considered oats the staple, and adverted to the importance of erecting proper mills for the manufacture of oatmeal. He stated that the prices of produce proved that there was no want of markets, and alluded to some suggestions in his report upon the subject. He observed that notwithstanding the length and severity of our winters, farming could be followed with advantage. He stated that lumbering had been prejudicial to our agriculture, but nevertheless that New Brunswick had been benefited by it, showing an obvious truth that agriculture and lumbering are distinct pursuits, that the lumber trade is good in its place, an auxiliary, but not the principal, of our colonial prosperity.—*St. John paper.*

We have received from Professor Johnston a printed copy of "An address delivered at the annual exhibition of the New York State Agricultural Society, at Syracuse, September the 13th, 1849," by that gentleman, for which we beg to return him thanks. This address refers chiefly to "The State of agriculture in Europe," and appears to be an introduction to the Course of Lectures which he then proposed to deliver at Albany in the present ninth of January, and which we believe he is now

engaged in accomplishing at that place, before the New York State Agricultural Society. We wish it was in our power to be present to hear these lectures, but as it is not, we have applied to the professor to favour the Lower Canada Agricultural Society with a few copies of his lectures when they are published, as, no doubt they will be. The following are the subjects of the nine lectures proposed to be given:

1st. The relations of Physical Geography to Practical Agriculture.
2nd. The relation of Meteorology to Practical Agriculture.
3rd. The relation of Botany and Zoology to Practical Agriculture.
4th. General relations of Geology to Practical Agriculture.
5th. Relation of Chemistry to the soil, and its Practical improvements.
6th. Relations of Chemical Physiology to the Plant, and modes of promoting its growth.
7th. Relations of Chemical Physiology to the animal, its food and its growth.
8th. Relations of Chemistry to the Doctrine of Manures.
9th. Means by which general Scientific Knowledge may be diffused and made available to the improvement of Practical Agriculture, and the general elevation of the Agricultural class.

From the well established character of the learned and able Professor, there is no doubt his lectures will be highly interesting and instructive, and we would consider it a great privilege to have been present. The agriculturists of Canada may yet be favoured with an opportunity of hearing the Professor's lectures on agriculture. As we observed in a former number of this Journal, such a man as Professor Johnston, is able to do more for the advancement of agricultural improvement than ten thousand practical farmers, however good their practice upon their own farms, where very few except themselves will know any thing about their practice, or derive any advantage from it in the way of instruction in the science and art of agriculture. Professor Johnston devotes his time and mind to the study of his subject, and no man, perhaps, has had better opportunities of seeing the most perfect systems of husbandry in full operation, not only in the British Isles but in other countries. He is, therefore, well qualified to instruct the very best practical farmers in many things that would be very useful to them to know, and which, with all their experience, they may be ignorant of. In our own experience, we have always seen that the best informed practical farmers were the most anxious to have further information on the subject of their profession, and availed themselves of every opportunity that offered to obtain further perfection in husbandry. We believe it is the same case in every other art and science, that those who know the most, are the most anxious to know more. The most certain discovery that is made by the best educated man is the very limited extent of his knowledge, compared with what might be known, if there was life granted for an opportunity to learn more. So with the man that knows most of practical agriculture, he feels every day that there are many parts of his practice that would require further experiment to enable him to attain a greater degree of perfection—and it is in this way that the great improvements in agriculture have been introduced up to the present time.

Extracts from Mr. Johnston's Lecture.

And now you are ready to ask me, what those, who in Europe are most in advance in the practice of the rural arts, look forward to as likely to help on agriculture still further. In what especially, you will enquire, do we of Great Britain trust, who have thrown down the gauntlet to the farmers of the world? These questions I shall answer by drawing your attention briefly, to what may be regarded as the characteristic or living feature of the agriculture of our time—what you no doubt expect me briefly to speak of, the direct applications, namely, of natural science to the several branches of rural economy.

The main purposes for which natural science are applied to rural economy, are—

First. To explain the means of practices already adopted, or of things already observed, and to supplant old and defective by new and better usages.

Second. To establish general principles, by means of which, a short cut is provided for the unlearned, to the knowledge, practical and theoretical, we already possess. A single principle explains and thus recommends or forbids many

practices, according to the circumstances of the soil, place, or season.

Third. To enlarge our actual knowledge by new discoveries susceptible of practical application.

On these several objects of natural science, in its applications to agriculture, it would be out of place at present to dilate. It will be sufficient if I briefly draw your attention to some of the general results, in reference to rural economy, at which science has already arrived.

With this view I might draw my illustrations from any one of the many different branches of natural knowledge. I might select for example:—

1st. The general relations of *Physical Geography*, to the art of culture—such as

a. The influence of broad seas and of great lakes and rivers, of tides, of sea currents, and of prevailing winds, on the capabilities of a country and the practices and profits of its cultivators.

b. The influence of mountain elevations and depressions, of high table lands and of low level plains—or

2d. The general indications of *Geology* in regard to the fertility of a country, the branches of husbandry to which it is best adapted, and the means by which its fertility may be best promoted.

3d. The relations of *Meteorology* and *Botany* conjoined—such as

a. The adaptation of certain plans to certain climates—of sugar, cotton and rice to warmer; of buckwheat, and Indian corn, and wheat, to warmer and dryer; of rye, barley and oats, to colder and more uncertain climates.

b. The nature of rust, smut, mildew, the maize, brand, &c., and the circumstances of local climate most favourable to their appearance—or

4th. The relations of *Geology* and *Vegetable Structure* conjoined—such as

That certain plants and soils are mutually adapted to each other, because of the special structure and natural habits of the plants, and the physical characters only of the soils.

5th. The general indications of *Geology* and *Meteorology* conjoined—such as

The relations or the nature of the rocks, of the soil, and of the fall of rain taken together—

a. To the necessity for under drainage, and the means of effecting it.

b. To the necessity for artificial irrigation, and the easiest mode of obtaining a supply of water for the purpose—or

6th. The general relations of *Zoology* and *Animal Physiology.*

a. To breeds of domestic animals, and to the preservation of their purity.

d. To the rearing, feeding and general tending of stock. To the agency of animal life in fertilizing the soil. To the attacks of insects upon our cultivated crops—or

7th. The general indications of *Chemistry*—such as, *a.* That a fertile soil, in addition to various organic compounds, contains at least eleven different mineral substances. *b.* That plants contain, usually, or in most of their parts, the greater number of the same mineral substances. *c.* That the animal, as a whole, also contains them, but distributed throughout its several parts in a manner different from that in which they are found, either in the plant or in the soil.

d. That the plant standing, as it were, between the soil and the animal, prepares for the latter both its organic and its mineral food.

e. That an intimate and beautiful relation exists between the soil, the plant and the animal—or between the living and the dead things of nature—or

8th. The general indications of *Geology* and *Chemistry* conjoined—such as

a. That certain Geological formations are especially rich in some of the mineral substances found in and required by plants, and produce soils which with special treatment will prove fertile and profitable to the cultivator.

b. That others are especially defective in some of these substances, and form soils which are naturally unproductive. *c.* That some abound in all the kinds of mineral matter which plants require, and yet yield soils which are naturally unfertile.

II. Relations of Chemistry to Agriculture:—

Permit me now to say a few words on the subject of chemistry, in its relations to agriculture.

The special applications of this science, as many of you are already aware, are far too multiplied to admit even of enumeration. Of the practical ends which have been more or less perfectly attained by means of chemistry, I might mention such general ones as these:—

1st. In what *general* exhaustion consists, how it is produced, and how it may be repaired?

2d. In what *special* exhaustion consists, how it is brought about, either naturally or artificially, and how it is to be corrected?

3d. What plants, in general, require to make them grow well?

4th. What manures ought to contain, to be generally serviceable; what, with a view to special purposes, they ought specially to contain; and how they are to be artificially prepared?

But such topics are too general and indefinite to make a sure impression on the mind of the practical farmer, in the brief moments I have spent in enumerating them.

I mention further, therefore, such special points as the following:—

1st. How to bring crops to earlier ripeness in late and elevated districts.

2d. How to reduce the straw producing tendency of the land.

3d. How to hasten or promote, or to push forward, laggard, yellow, and stunted vegetation.

4th. How to strengthen the straw of your grain crops, where they are liable to be laid.

5th. How to fill the ear and make it larger, where long culture or natural poverty has reduced its size.

6th. How to improve the deficient feeding quality of turnip, and other root crops, when grown on mossy land.

7th. To quicken the organic matter in dead, deaf, or peaty soils, and make it available for the nourishment of plants.

8th. To prepare artficial manures, which shall nourish any crop on any available soil.

9th. To promote growth on *slow*, and to retard it on *quick* soils.

10th. On newly brought up subsoils, and on trenched land, what manures ought to be used, and why.

11th. Why a rotation of manures, as it is called by practical men, is necessary, and where.

12th. That the use of lime to a certain extent, and in a prudent way, is necessary to the highest fertility.

13th. That saline and nearly all other manures, do more good upon light and open, than they do upon stiff and close soils, and why.

14th. How to economise the consumption of vegetable food, and to adapt it to the purpose for which an animal is fed.

15th. How to prevent the disease called *fingers* and *toes*, in turnips and in other roots, and how to render mildew and ague equally rare?

To do these and many similar things economically, skilfully, and with more or less success, are among the practical ends to which chemical investigations have already led us.

They also supply answers to many practical questions, such as:—

1st. Why cabbage crops so greatly exhaust the soil, and how such exhaustion is to be repaired?

2nd. Why tares cut green exhaust the land, and give inferior wheat?

3d. Why tares are seldom good after crops of clover?

4th. Why lime produces a more marked benefit on one soil than it does upon another?

5th. Why one variety of lime is more useful generally, or in particular districts, on particular farms and fields, than another?

Of special points and questions, I could enumerate many more, in regard to which chemistry may be said to have been, or to be capable of becoming, of obvious money value to the farmer. Even to such of you, however, as have not much attended to this subject, the above examples will sufficiently indicate both the kind of connection which exists between practical agriculture and practical chemistry; and the kind of uses to which such scientific knowledge may hereafter be put, in advancing the important art, which is the first wish of this great Society, and the individual interest of many of its members most zealously to promote.

Limits of human Skill.—But in dwelling upon and illustrating what is already in the power of man, and what he hopes to attain in reference to agriculture through the aids of science, I would not forget to acknowledge how very limited his knowledge is, and how feeble his capacities after all.

A mysterious fungus attacks the potato, and for years spreads famine and misery, and discontent and depression, among millions of industrious farmers.

A minute fly, season after season, hovers over our wheat fields, and from entire provinces and states almost banishes the cultivation of our most important grain.

A long continued drought, such as half a century past has scarcely seen, dries our meadows and pastures, and drives the farmer to his wit's end, to obtain winter sustenance for his necessary stock.

Such things as these ought to prevent us from boasting of our knowledge, and to enforce upon us that piety and humbleness of spirit, which rural occupations themselves so naturally foster—while at the same time they should not restrain us from any effort or enquiry by which the evils themselves may be mitigated or removed.

It is possible—nay, it is almost within the bounds of a reasonable expectation—that the same intellectual research which has given us dominion over the proud waves—has made out the laws by which hurricanes are regulated—has already almost freed us from their most fierce influences—and has forced the fiery lightning to descend harmlessly from heaven—that the same research may finally free us from the visitations of the fungus and the insect, and may place the dreary droughts of summer under reasonab'e control. Such hopes we may entertain, not as sources of pride, but as stimulants to exertion—for in so greatly rewarding the past exercise of our intellectual powers, the Deity obviously intends still further to excite us to study and extract good from the living and dead things of nature, over which he has given us a general dominion.

Obstacles to Progress.—There are, however, in every country, certain obstacles which oppose themselves to the progress of scientific agriculture, as a branch of knowledge, or to its practical application in the improvement of the soil.

I do not refer to those physical or local obstacles of climate, elevation above the sea, low prices, distance from markets, and so on; but to those social and class obstacles which, in so many places, and in so many ways, interfere not only with the rapid extension of our knowledge, but with the diffusion of what we already possess, as to the application of science to the rural arts. I may enumerate as belonging to obstacles of this kind:

1st. The aversion to theory, as it is called, which is so generally professed by practical farmers in most countries of the world. Rash and hasty theorising in regard to agriculture, it is right to reject; the error in confounding with such theory every thing that does not appear to bear directly upon the more common operations of the farm—as if chemistry, or the chemist, for example, could be of no use to the farmer, because he does not interfere with the handling of the plough—or with the shape or management of the drill machine, or the harrow.

2d. The small amount of talent hitherto in all countries considered necessary to fit a man to become an excellent farmer. This not only lowers the general education and attainments of the agricultural class, and the estimation in which they are held—but it unfits them, as a body, readily to appreciate the labors, or to listen to the counsels of men of science, however prudent and practical they may be.

3d. The special deficiency, among all grades of the agricultural community, (in England among landlords, among tenants and among laborers,) of any instruction in the elementary parts of those branches of knowledge by which the principles of agriculture are especially illustrated.

4th. The extreme sub-division of the land, which you may not see in this country for many generations, but which already exists as a great evil in some of the countries of Europe. It prevents the use of improved implements, and therefore the encouragement of agricultural mechanics—because the farmer is too poor to buy anything but the merest necessaries. It prevents the purchase of manures, natural or artificial, to any extent—the employment of paid labor in farming—and generally all those forms of improvement which demand an outlay of capital, or to which the occupation of a considerable breadth of land is a necessary pre-requisite.

5th. An obstacle peculiar to your country, and to its present transition state—and it is really a serious obstacle to improvement—is the feeble local attachment by which the proprietors of the more newly settled districts are bound to their farms. This appears in the fact that so many of your farms are for sale. Few families have yet become so attached to their locations as to be unwilling to sell them, if a fair offer be made. The head of the family trusts to his own skill to do better elsewhere for all his household, with the money for which they may be sold. This state of things will pass away as age creeps over your commonwealths and institutions, but in the meantime it operates as a serious hindrance to the expenditure of money in embellishment or in costly improvements, which might possibly not enhance, in a proportionate degree, the value of these properties in the market.

We are not selfish—perhaps I might say we are eminently unselfish—in wishing you to become agricultural improvers. But of all the arts, it may be said more truly of agriculture than of any other, that it is of no country. The producer of the common staff of human life, ought in all its perfection, to be the common property of all. In rivaling each other in our endeavours to push forward this highest art of life, Britain and America will be striving only which can do most for the human race. And if we in Britain should benefit hereafter by the advances you are destined to make,—beyond what you have obtained from us,—it will enable us only the more speedily to aid in diffusing a knowledge of these advances among the other nations of the globe.

Is there improvement any where—let it be seen among you. Is there agricultural progress any where—you ought not to stand still Are there means of bettering the modes of culture any where—you possess the same. Is there greater knowledge any where—it is within your reach. Is there energy and determination any where—these qualities are inherited in as great strength by you as any other people. Is the climate favourable any where for special kinds of culture—you possess all climates, and may take a leaf from the farming book of every country. Is knowledge necessary any where—it is so among you; if not because of an overcrowded, yet because of a constantly moving, and at present rather retrograde agricultural population.—*Professor Johnston's Lecture.*

FIRST IMPRESSIONS OF GARDEN SCENERY.

Were there no standard of truth by which the objects in garden scenery, with regard to their character, position, and arrangement, could be judged; and were taste something of an irrational, fanciful, and capricious nature; as some have supposed it to be; then every designer would have something behind which he could shelter himself from all the shafts of criticism and of ridicule. "Let taste be free," would be the general motto; and it would follow in consequence that "I love to have it so, would have to be accepted as a sufficient reason for whatever might be done. But, however much this

pricple may be acted on—and it is oftentimes acted on in practice, especially by amateur planners—it is none the less false and baseless. Why should argument be needed to prove that landscape gardening is a fixed art; that is, an art which, in all its variations of style, has immutable rules, founded on reason, which cannot be transgressed with impunity, and which must be obeyed, that success and approbation may be met with? Shall the theory of beauty and harmony be realised in the painting of the walls and ceiling of a room, and must all be left to caprice in the garden? Shall the architect have his five orders, and the landscape gardener no *orderly* arrangement of first principles at all? If architecture, painting, music, and sculpture, cannot be learned without strict attention to elemental laws, why should such attention be accounted needless in studying the art of laying out grounds?

Taste is either rational or depraved. When rational it will only be pleased with that which can shew TRUTH for its foundation. When depraved, it may be in a manner satisfied with that which is false and inharmonious. But when it has been uncultivated, and therefore unbiassed either way, it is yet pleased with the *first impressions* of harmonious garden scenery, and displeased with what is incongruous and disorderly, although in a way which its possessor may not be able to explain. Three instances of the way in which what is inharmonious or incongruous, is also unpleasing, even where taste is natural and uneducated, may here be adduced, and one may be taken from each of the three arts of architecture, decorative painting, and ornamental gardening.

Church architecture has of late, in many cases, become subject to the now established reign of iron. Pillars of iron in the interior of churches support horizontal beams on which the ceiling appears to rest; and, in as far as it is desirable that a preacher should see his hearers, and be seen by them, they are preferable to those massive columns of stone which take up so much space in large ecclesiastical edifices of an ancient date. But when these iron pillars are painted, so as to resemble wood or marble, as they almost universally are, it is impossible for any person having the use of his eyesight to enter, for the first time, a church in which they are present, without feeling that a want of *fitness* prevails, even although he may not be able to tell, or may not set himself to find out, wherein that want exists. It does not require that the taste of the supposed personage be educated or cultivated. Unless he be utterly disregardless of *first impressons*, (and few indeed are so), he will, it is most likely, experience that distracting influence on spiritual engagements which any want of fitness in seen material objects is ready to exercise. Even when, it is known that iron, strong enough to support the apparent weight of the roof, exists within the unnatural coating of paint, there is still something that displeases and distracts, for an uncalled for attempt at deception has been practised. Let the slim iron pillar be painted so as to appear what it is, and the idea of sufficient strength will at once be communicated. The mental influence of church architecture has doubtless been elevated to too high a place by some; but, by others, and especially in Scotland, it has been too much disregarded. But it is not in churches alone that men have availed themselves of the strength of iron, while the iron itself has been disguised. Enter the much vaunted City Hall of Perth, and say whether those slender and fairy-like pillars of white-veined marble, be at all sufficient to support the weight of the roof. And when, on second thoughts, you are convinced that they are composed of iron, but *marbled*, as the house painters would say, tell whether your second impressions are any less disagreeable than the first. They will even be more so, for it will have been discovered that deception has been practised, while a want of fitness is still apparent. The prevalence of such deceptive practises in decoration, shows how much the influence of first impressions is disregarded, and that from a blind submission to the dictates of fashion.

The relation of an incident which recently happened may serve for our second case. A new steam-ship was lying at a quay side, and the painters had just gone over her upper works with their brushes. The colours employed were blue and green. Two or three little girls passing by constituted themselves judges of the effect produced, and their verdict was expressed in the condemnatory words, "What a taste!" It is not likely that they had studied in a set and formal manner, the principles of decorative colouring; but the same intuitive perception of right and wrong in this matter, which had served to guide them in the adaptation of ribbons to the parts of the dress which they were designed to decorate, was sufficient to impress them with the idea that blue could not form a right contrast with green, which it never can, because green is a mixture of blue and yellow, and requires for contrast some colour that is different from either.

The free unbiassed opinions expressed by visitors to gardens, though intended merely as casual or passing remarks, often, yea generally, coincide with the conclusions of rightly directed logical criticism. Let us suppose a case:—A flower garden has been laid out, say fifteen or twenty years previous to the time of its supposed inspection, in front of a mansion-house, and on grass. The shape of the ground is semicircular, the front wall of the house forming the straight line of the segment. The walk

in front of the house is straight, and that which leads round the bending side of the garden, bends correspondingly; and all this is right. But the flower beds are too large, and lie scattered nearly at equal distances over the grass, and with little apparent adaptation to their respective positions. Being large, they have been planted with a mixture of flowers, and shrubs; and tall growing shrubs, both climbers and standards, have been planted here and there between them on the grass. A semicircular shrubbery bounds that side of the garden farthest from the house, and serves the good purpose of conferring seclusion on the scene, and preventing the eye from wandering to distant objects. After the lapse of time already indicated, let us suppose this garden to be visited by a party of individuals, who, in any opinion they may express, will be guided by the natural impressions of a first view, and will speak without any acknowledgment of fashion or its influence. In some respects the scene exhibits a maze of beauty, but its beauty is unartistical, and of a kind that would be better displayed in the rude scenery of Nature. Flowers and shrubs appear in unseemly mixture. A pyramid of roses overpowers the modest violets that grow at its base. A wide spreading plant of *Ribes sanguineum* occupies its own share of ground, and part of its neighbours, that neighbour being a defenceless Campanula. Some delicate annuals are overshaded by a dense Arbor-vitæ. A towering Scot's thistle has, in one season, attained unto twice the height of the under shrubs, that surround its base. In the shrubbery, an unlucky Cedar of Lebanon, now attaining the character of a tree, finds itself hedged in by shrubs of all descriptions, with none of which it can harmonize, and yet is prevented by their presence, from indulging in its native gloomy and unsocial grandeur. The "first impressions" of such a scene will be decidedly unfavourable, and may be expressed in such words as these,—"The garden appeared very disorderly and *ravelled* like; it has much need to be put in order." And yet there is more of truth than of supposition in the case described; and the description is in most respects applicable to more than one flower garden in this country. Had the beds in the garden above described been placed alongside the walks, leaving an unbroken expanse of lawn in the middle of the ground; had some beds been set apart exclusively for flowers, and others of a larger size for the finer shrubs; and had the taller growing shrubs been kept by themselves on the far side of the surrounding walk—one part of the scene would have contrasted with the other, and true variety would have been produced—variety, which consists not in indiscriminate mixture, but in a separation and condensation of parts. The expanse of lawn in the middle would have served as a resting place for the eye, and have added to the intricacy of the richer parts. The principles of congruity, order, symmetry, and variety, would have been acknowledged; and also the principle of utility, which should not be forgotten even in a flower garden, and which requires that flowers should be placed by themselves, that their growth may not be injured by the proximity of shrubs and trees.

DAVID GORRIE.

November, 1849.

POULTRY-HOUSES

Are essential arrangements for the preservation of your feathered stock, which should be placed, if possible, as to have an eastern aspect, so as to be open to the morning sun; sheltered by a plantation, or sufficient shrubs, to screen the birds from the summer mid-day sun, or inclement winter winds, both being equally injurious to them. The poultry-house should be constructed to give as much warmth as possible, consistent with sufficient ventilation, the advantage of which is quite evident, from the circumstances of the cotter, who has his poultry roosting over his fire, laying abundantly during the winter months, while the opulent farmer, who houses his poultry, in his spacious poultry-house, is not supplied with eggs. The more compact they are kept during the winter months the better, as each will contribute a share of heat to the other, and add to their comfort, and induce laying; the size to be suited to the number kept, and the more compact they are kept in winter the better. The floor should be elevated, so as to be perfectly dry, and of such materials as to allow its being swept or raked out daily. The walls close and substantial, so as not to harbour vermin of any kind, and be frequently whitewashed; with a good air-tight roof that will fully resist the rain—damp being most destructive to poultry. Windows should be placed in opposite directions, so as to admit of thorough ventilation each day during the summer months; but one window should be carefully closed, even in the summer time, as there is nothing more injurious to poultry than a thorough draft of air during their sleeping hours, and both windows should be punctually shut up every night during the winter season. In order to admit ventilation and prevent the poultry passing through the windows, a wire lattice should be fitted to each. I would particularly advise the roosting perches to commence low, say about one and a half feet from the ground, and ascend gradually, in the form of a wide ladder; the perches to be placed about twelve inches apart, with an elevation of twelve inches above each other, so as that the droppings of one bird may not soil the plumage of

the other; and to be from one and a half to two inches in diameter, with the sharp angles taken off. The value of low perching cannot but be known to most keepers of fine large fowl, who are sure to break their breast-bone when coming down from high perching, and from which they scarcely never recover. Nests are frequently constructed in the building of poultry-houses, which is, by no means, a bad plan, as they are free from the droppings of the fowl, are rounded in the shape of a nest at the bottom, and a coat of lime, at any time, renders them perfectly pure. If they are not so constructed you will have to furnish your hens with boxes or baskets, placed steadily, furnished with straw, cut short, so as to prevent accident to the eggs, and should be frequently renewed, and the nests kept perfectly clean. I would prefer boxes or baskets for hatching, as being less exposed to the action of the air; and, as with the perches, I would recommend their being near the ground, so as to imitate nature, as much as possible, and permit the hens to enter with ease. If there is a difficulty about entry, the eggs will be broken; and if the hen fall when about entering a high nest to lay, if hurt, she will be likely to lay soft or misshappen eggs; I would, therefore, advise them not to be elevated. Hatching on the bare ground, as in the case of a hen laying out, has been found most successful, the evaporation from the earth inducing incubation; as a substitute for such evaporation, Cantelo finds it necessary to damp the eggs daily with a sponge. An aperture should be constructed in the door, to admit the poultry in and out, a little elevated from the ground, so as not to induce vermin to enter, with a perch for the convenience of the birds. They should be supplied with pure fresh water daily. If a corner in the house were furnished with fine sand, as a sand-bath, for the poultry, it would conduce to their health and gratification, by ridding them of their accustomed parasites. I do not approve of paved yards for the large fowl, which so frequently brings on them both gout and corns, at a premature age. A shed in the yard, or other shade, is essential to shelter them from rain; and fine sand, in a poultry-yard, is much preferred to any other walk.

As I keep all the fine poultry, pheasants, &c., I am obliged to divide my pheasantry or poultry-house into separate compartments, in order to have them distinct. I have, therefore, erected, to the front and roof, a wire lattice, with lattice doors, which open from the one into the other, so that, by leaving the door open, I can enlarge the compartments, and form two into one when occasion may require it. It is at the extreme end, and fronting a garden, which supplies the birds with an abundance of vegetable matter, with an opportunity of occasionally passing from the rear, into a grass plot. It is elevated above the level of the garden, and being in the vicinity of the sea I have in it, several inches of sea-sand, which keeps the fowl clean, comfortable, and in good health; and in this sand they delight to roll themselves.

IN COLLECTING EGGS, FOR HATCHING.

You should prefer those newest laid, and while gathering, to be kept dry, clean and free from damp or foul air; and if imbedded in dry bran, you will find the advantage. You will have to recollect the necessity of impregnation by the cock; and prefer the moderate-sized eggs—the over-large or over-small, not being advantageous for hatching—the soft-shelled or ill-shaped egg to be rejected. It is absurd to suppose that the gender of an egg can be ascertained from its appearance. The hen usually commences laying in the spring, and again in the summer; but if kept warm and well-fed, you may have eggs at any season. The approach of laying is indicated by the comb and wattles of the hen becoming a bright scarlet. The eggs should be taken from the nest every afternoon, when no more may be expected to be laid; for if left in the nest, the heat of the hens, when laying next day, will tend to corrupt them. Some hens are much more productive than others; I have had some of the Cochin China to lay two eggs a day, not constantly, but occasionally, with one egg on the intermediate days. But the grand secret of procuring an abundance of eggs, is comfortable housing and abundance of food. Early pullets will lay all the winter, if well housed and fed. The laying continues more or less during the summer, until the moulting commences. The older the hen, the later she moults, and, consequently, commences to lay later in the season, perhaps not till April. The air-bag is placed at the larger end, between the shell and its lining membranes, it is about the size of the eye of a small bird, in new-laid eggs but is increased as much as ten times in the process of hatching. The air-bag is of such importance, to the development of the chick, that if the blunt end of the egg be pierced with the point of the smallest needle, the egg cannot be hatched. The freshness of the egg may be easily ascertained, by the small circle denoting freshness, and the large circle the contrary.

FOR HATCHING.

You will recollect the eggs must be rendered reproductive, from previous treading of the cock, as well as being fresh, and not exposed to bad effluvia or moisture, and while collecting, previous to hatching, covered with bran. Some say pointed eggs produce cocks, and round ones hens; and others, that if the vacancy caused by the air-bag, at the blunt end of the egg, appear to be a little on one side, it will produce a hen; if this vacancy be exactly in the centre, it will produce a cock. Not having faith in the

above, I quote it for the advantage of those who may wish to test its authenticity. If fresh eggs are laid, after the hen begins to sit, they should be forthwith removed; and if she break any of her clutch, they should be carefully cleaned away, and her feathers, if soiled by the broken egg, made perfectly clean. Old hens are, in general, better sitters than pullets; and middle-sized plump hens better than the very large ones. The clucking of the hen, when she has an inclination to sit, cannot be mistaken. It is best to have a few valueless eggs to put under a hen, for a few days, to ascertain if she will sit steadily, before you intrust a valuable clutch to her; when you do, give her the eggs intended to be hatched; the time of incubation being twenty-one days, at which period you should expect the chickens to be appearing; but should any of them he heard in the shell, for 20 hours after they should come out, you will have to assist them, by breaking the top of the shell; and if found to be glued to the shell by the white of the egg, the bird must be assisted to extricate itself by the most gentle means, and but at small intervals, at a time, and during a lapse of from twelve to twenty hours—no hurry, no violence.

The day of their exclusion from the egg, the chickens do not want to eat, but should be left in a clean and comfortable nest. The next day they may be put into a coop or basket, with some clean and comfortable lining, and fed with soaked bread and milk, an egg boiled hard, and chopped fine; pure water is essential. When about a week old, turn them out in the sun, of a dry day, for a short time, and feed them with oatmeal, curd, chopped egg, and bread crumbs, with chickweed or lettuce cut small. When a fortnight old they may be permitted to follow the hen, where she will scratch up insects for them, which are most nutritious. Economists in poultry, frequently add two clutches together, by putting the second under the hen at night, and then giving another clutch of eggs to hatch, to the second hen, or permit her to lay. The care of the hen is continued to the chickens, till they are enabled to provide for themselves, after which you are to reserve the largest and finest to continue your stock, of both cocks and hens, and use at the table, or send to market, the inferior.

After rearing your chickens, your next consideration is

FATTENING

For table or market; it is best accomplished by cooping in a moderately warm, rather dark, quiet place, with good ventilation, and the fowl fed on boiled or steamed potatoes, into which oats or oatmeal is blended with sweet milk, and some fine sand added and given warm, but not hot—the fattening will be accomplished in a fortnight—or boiled carrots, with beans, peas, or barley and sweet milk; in all cases of cooping the fowl must be kept dry, clean, and warm.

Nothing is easier kept than fowl; they obtain their living promiscuously, and pick up everything that can be made use of as food, in the farm-yard, even the worms give them most nutritious food; since the blight has proved so destructive to the potato crop, it has been satisfactorily proved, there is no substitute for it, as a feeder or fattener of poultry, or a promoter of laying; if the potatoes are broken, and if a little corn be added, they will be the more palatable; the more varied the food the better; boiled carrots, turnips, parsnips. Jerusalem artichokes, or other roots mashed with bran, form a healthful variety: as to green food they are partial to lettuce, endive, cabbage, spinach, radish, turnip, mangel-wurzel, chickweed, grass seeds, &c., and if insectivorous food is wished for, there is nothing more easily procured at almost any season, by procuring a deep crock, into which put some bran, and on it lay a piece of carrion or other flesh, cover it with a glass cap so as to admit the light, but exclude the rain; in a few days it will be a moving mass of living insects, which you can throw out to your poultry; there is nothing they will so greedily devour; they should be sparingly given, as the fowl are so found of them, that if given abundantly it will prevent them taking their usual food.—*Farmer's Gazette.*

ON THE SAVING OF MANURE.

As your Society has offered a premium to the farmer who has displayed the most intelligence and economy in saving and making manure, and as I am convinced that upon this depends in a great measure the successful prosecution of agriculture in this country, I am induced to lay before you my experience in the matter. The exhausting process of farming hitherto carried on in this Province, cannot be improved, save by the production of a larger quantity of manure than heretofore. Convinced of this, I, in the month of July, three years since, hauled out of a bog eighty cart loads of bog earth to the end of the land where I intended to apply it, mixed it with eight hogsheads of quick lime, and let it remain until the following spring, when I spread it, broadcast, on about two and a-half acres of land, which had been ploughed about the time I hauled out the bog earth. I sowed it with oats, timothy, and red clover, and harrowed it properly. I had a good crop of oats that year, and an excellent crop of hay the next year. I did not, however, like the look of the heap; when I turned it over, the lime seemed dead, and the bog wet and cloggy. There was about thirteen or fourteen loads of the bog earth left, with which I had not sufficient lime to mix, and it laid over winter. I determined to try how barn manure would do to mix with it. I

accordingly put six cart loads of the barn manure to the bog and let it stand for four or five days, when I found it in a complete state of fermentation. I applied it to a piece of gound alongside the other, and I found the crops to be superior to the latter. The next year I hauled one hundred and seventy loads of peat to the field where I intended to apply it, and to every seventh load I added one of earth. I turned the heap over twice in the summer, which I found improved it very much. As soon as the frost left in the spring, I had the barn manure admixed, one load to two of the peat, with the latter finely pulverised, and thrown loosely in a compost heap, ten feet in width and five feet in height. I then left the heap to do for itself. I then harrowed the ground, picked off the stones, and struck out drills two feet apart, and left the ground prepared for the reception of the manure. In four days I found the compost in a proper state of fermentation. (It is necessary to have a few loads of earth convenient, lest the heap would overheat, to throw on the top, two or three inches, to prevent the escape of the ammonia or gas.) In a few days the compost packed down eight or ten inches into a solid mass of fertilizing matter. I let it stand for four days, then hauled it out on the land, thirty-four single horse-load to the acre, and covered it up with the plough in the drills. I put in carrot seed; the day following I found the manure had warmed the ground, and, notwithstanding the dry weather, the seed germinated, and in four days they appeared above the ground. I planted in the same acre of ground, potatoes, carrots, turnips, beets, cabbage, and corn, all of which grew abundantly. So, sir, like the Irish bog, there is something very extraordinary in the peat if properly manufactured, and I would strongly recommend that in all cases the peat should go through a thorough course of fermentation, and, if possible, be applied to the ground when warm. It may be asked why not add more earth to the heap? I answer, it would prevent fermentation. The manure that I mixed with the muck was that of six cows and two horses, which was evenly mixed through the winter, in the barn-yard But, sir, our farmers will think very hard to quit their old method, which was to haul out their manure and apply it to the ground cold, wet, and unmixed, which, if it never was to be put with a compost, it would improve it very much to turn it over, and let it stand for a few days to warm a little before being put in the ground. In our cold spring weather, care should be taken not to put any lime in the same compost with barn manure, as they never agree: the one is sure to eat up the other. It may be asked also, would not quick lime do to mix with peat; and I think it would, by preparing the peat the same as above described, and in the spring, break the lime into small pieces, and put it through the peat till it slacks; then turn it over and let it stand four or five days—say, put one load of lime to six loads of muck—this, I think, when put on the ground warm, would be a very good manure. But this is not the method followed by the farmers of this locality; they commonly mix the lime with the wet sour muck, without turning it over in the summer, or soaking it, or waiting for the required power of the atmosphere to manufacture it; in the spring the lime is dead, and, I think, can be very little service to the land. Charcoal would be another excellent ingredient to make manure, especially to the farmers in the interior parts of the country, who cut so much wood-land down annually and burn it on the ground. If the farmers would make charcoal of part of the wood they burn up, they would find it very much to their benefit. I think that sea-weed would be a very good ingredient to mix with peat for compost, but this article is only to be obtained along the sea board of this Province, and could not apply to the interest or benefit of the farmers generally, but only to those farmers who reside along the sea coast. Neither can lime be had except in particular places in this Province, and then it must be purchased at a very dear rate, placing it entirely out of the reach of small farmers, or of those living in the back settlements and interior parts of the Province. I think the simple method of making manure that I found out by experiment, would tend to the general good as well in the most remote parts of the Province as in those localities, as the article can be got almost on every farm, with no other cost than that of manufacturing it, and it is within the reach of the poor farmer as well as the rich; and although simple as this mode of making manure may appear, any farmer who will add to his manure heap twice the quantity he makes at his barn-yard, and follows it up annually, together with rotation cropping, may rest assured his farm would soon have a different appearance to that which it has this day. I have one hundred and seventy single horse loads of bog earth now prepared as above for the ensuing spring. I find this description of manure more nutritious to plants than any other I have yet used. Another good tendency fermentation has on manure is to destroy the foul seeds, such as dog-nettle, sorrel, and other seeds, which remain safe and sound through the winter about the barn-yard. The rough buck-wheat is a grain that is sown very much these last three or four years all over the country, the seed of which is almost imperishable, and gives the farmer a great deal of trouble in weeding out from amongst his crops; it might be destroyed by putting the manure heap through a thorough course of fermentation in the spring, before applying it to the ground. This description of grain the farmers heretofore hesitated in sowing,

in consequence of the great difficulty they had in clearing it out of the land; this difficulty can easily be removed by the following method: As soon as the grain is removed off the land where it has been grown, put on the harrow and harrow in all the fallen grain smoothly. In a few days a young breard will come up, which should not be interfered with. Now have it eaten down with cattle in order that the seed may be well exhausted before the frost sets in, which will kill the green breard, and the farmer may rest assured it will give him no more trouble.—*Nova Scotia paper.*

THE CHRISTMAS MARKETS.

SMITHFIELD.

One of the most important signs of the near approach of Christmas is the advent of the Smithfield Club Cattle Show. The great annual agricultural gathering is one of which the country has reason to be proud, for no other nation on the face of the earth can afford a similar spectacle. The exhibition for the present year in some respects excels all its predecessors, and certainly betrays no syptoms of depression in the rural districts, whatever may be said on that subject at public meetings or market dinners. One thing for which the present year was peculiarly praiseworthy was the general absence of that enormous obesity which it formerly seemed the grand aim of the breeders to produce. A better taste now prevails, and which, it is not assuming too much to assert, has been chiefly brought about by the press. While the animals in all the main points were no wise inferior to those displayed on previous occasions, they constituted this year the truest aud best exhibition ever witnessed. Although the different breeds exemplify divers peculiarities, they all furnish incontestible evidence of the care which has been taken in rearing them. It is in this rivalry or competition between counties that the principal value of these yearly re-unions is to be found. They stimulate constant endeavours to improve farming stock. The time, however, for eulogy on that head is past, and nothing more is now required than a just appreciation of the excellence of the institution. Let the managers continue to proceed in their noble career as they have hitherto done, and they will command, as they deserve, universal commendation. Without the slightest disposition to cavil or carp at the decision of the judges, it may be mentioned, *en passant*, that the distribution of the prizes was not exactly in accordance with all opinions; nor is this a theme for wonder, when it is considered that the general qualities were so nearly on an average as to render the task of discrimination extremely difficult. The grumblers, however, were but few, and the matter is hardly worth a passing remark.

Bearing in mind that the prime object is to put the greatest quantity of meat on the animal in the shortest space of time, and at the least possible expense, the show just terminated appears to have been eminently successful, and there never was known a quicker sale, most of the lots having been bought on the first day, and the remainder on the second day.

The cattle generally were capital specimens, and the Devons in particular remarkably fine. Of the sheep the Southdowns may be said to have borne off the palm. The Earl of Leicester's were superlative samples. The pigs were admirable. It may be here remarked, that the disinclination to patronize excessively fat animals was general, and it was observed that there was more butcher's meat and less for the tallow-chandlers than had been ever before known, and it is this circumstance that may be attributed the rapid sale of the various kinds of stock. It is not, indeed, the interest of the breeders to cultivate so much unnecessary fat, which will only realize 3d. per lb. to the butcher, whereas it has probably cost the breeder 1s. per lb. or more.

Upon the whole, without entering into minute comparisons between the present and past exhibitions, suffice it to state that the Bazaar never displayed a more interesting or excellent collection than that for the year 1849, both for quantity and quality.

The alterations projected last year were this year carried into effect, namely, the show commenced on Thursday and ended on Friday.

READING AND THINKING.—Those who have read everything are thought to understand everything too; but it is not always so. Reading furnishes the mind only with materials of knowledge; it is thinking makes what we read ours. We are animals of the ruminating kind, and it is not enough to cram ourselves with a great load of collections; unless we chew them over again they will not give us strength and nourishment.—*Locke.*

KNOWLEDGE AND COURAGE.—Knowledge without justice becomes craft; courage without reason becomes rashness.

THE COMPOSITION OF FRIENDSHIPS.—A mountain is made up of atoms, and friendship of little matters; and if the atoms hold not together, the mountain crumbles into dust.

SUCCESS AND FAILURE.—Nothing like success in this world—what dirty bread it will butter! Nothing so miserable as failure—what heroism it will blacken!

Agricultural Journal

AND

TRANSACTIONS

OF THE

LOWER CANADA AGRICULTURAL SOCIETY.

MONTREAL, FEBRUARY, 1850.

In one of the numbers of the Agricultural Journal for last year, we submitted some observations on the subject of "Associations of Agricultural Credit," and the principle upon which they are established in several of the European States, and humbly suggesting that such associations might be advantageously introduced in Canada in aid of the improvement of agriculture. If the reports of the prosperous working of these associations in other countries be correct, (and they have been established, in some instances, nearly a century,) it should be sufficient encouragement for the people of Canada to try the experiment. Indeed we cannot see that there would be any risk incurred by their establishment. In a new country like this, rich and fertile, capital is an essential requisite, to enable us to draw forth the rich resources of the soil. We should not be deterred from doing this, because we have lost the protection and preference of the British markets for our produce. Let us make our country rich in productions, and what we cannot advantageously export of these productions, we must strive to find customers for at home, by encouraging manufacturers of our own, who will exchange their goods for our produce. This course we shall have to adopt to some extent, and it is manifest we cannot purchase from Britain if she does not buy from us. We have hitherto exported our produce to England, at a very high expense of transport, to be sold to those who manufacture goods for us in that country, and which comes out to us, charged with the expenses of transport, revenue, &c., to this country. We may very well understand how these expenses of transport, back and forward to Britain and Canada, act in augmenting the cost of articles we purchase, and diminishing the price we obtain for our produce. Hence it would appear there would be a considerable encouragement for the establishment of manufactories, that would purchase on the spot our produce, saving all the expenses of a long transport to Britain, and sell us their manufactures on the spot also, free from all expenses of importation from Britain. We do not say that the establishment of manufactories here would do everything for us, because if they were able even to manufacture all the soft and hardware goods we now import, it would not, we believe, amount to £2,000,000 annually; but undoubtedly such establishments would greatly assist us, and we do not understand why they should not succeed under the circumstances we have mentioned. We hear constantly of the numbers of persons who emigrate from this country to the United States, in search of employment which they could not obtain here. Why is this the case? It is not certainly because we have not abundant employment for them and many more. Our lands are not drained or half cultivated for producing good crops, and we might have the manufactories we have alluded to above. If we had the "Associations of Agricultural Credit," it would give a new and beneficial impulse to our agriculture, and it would so greatly augment our productions, that they would afford us the means of establishing and supporting manufactories. Where a country is only yielding a scanty produce, there can be no sufficient support for manufactories, and they cannot succeed; but in a country of abundant productions, manufactories must flourish, and they will assist the farmer, as the farmer will support them. There is no

mode we are aware of that could be made available for affording farmers occasional accommodation to assist them in improving their lands, except by "Associations of Agricultural Credit." The security would be ample, as it would be founded upon the whole of the farmers' property throughout the country. There could be no better security than this. The amount of property in the hands of the farmers of the Province of Canada, including their lands, improvements, domestic animals, implements, &c., cannot be less than from fifty to sixty millions of pounds currency. Who then, we would ask, would be better entitled to have means of accommodation afforded them to carry on their business successfully? It is only such a system of accommodation as we have pointed out that would be suitable for them. It is generally admitted that the system of "Cash Credit," established in Scotland, has been the chief means of improving the agriculture of that country. This system has succeeded admirably for the banks and for the farmers, who were accommodated. No wonder the backward state of agriculture here, when so little has been done for its interests. The farmers possess a very large amount of property that is fixed in the country, and after all, they have no means of accommodation they could safely avail themselves of, however necessary and beneficial it might be, and they are very frequently brought to utter ruin for want of a trifling aid, and prevented making improvements that might double their produce annually. All these matters deserve great consideration, if the improvement and prosperity of the country is desirable. We may suggest measures which we humbly conceive would promote the welfare of the country, but if no further action is taken upon our suggestions, we might as well be silent. We can, at all events, safely state that it is not from any defect in our soil or our climate that any of our population, or emigrants coming to this country, desert us, and go to the United States. Notwithstanding that we have but one seaport, and even that closed for four or five months of the year by the severity of our winters, there is not a country on this continent that might be more productive and prosperous than Canada, if her vast resources were made available properly. As regards her agricultural capabilities, we take leave to say, that the labour of a man, or of a horse, judiciously employed in agriculture here, will create as much produce as it would in the British Isles, or in any part of North America that we have seen or heard of. What then should drive any of our population from hence to seek better fortune in the neighbouring States? A large portion of the produce raised in the United States, partly by emigrant labour, and emigrants from Canada, is exported to Britain. What is the cause that we should not employ those emigrants, and raise with their labour, on better soil, produce to export to Britain? We want capital and skill to employ it; but why do we want it, and what is it that prevents us from having, both as well as our friends on the other side of line 45°? There is as ample security here for any accommodation of capital necessary for the due improvement of the country, as can be had on this side of the atlantic; why then should it not be forthcoming?

If our country was situated ten degrees more to the north than it is, we might be excused for wishing to move southward; but what are our advantages? We have a most superior soil, and a climate proved to be genial, and favourable to agriculture, and capable of improvement, by clearing of our forests, and a more perfect drainage of our soil. We have water communication by rivers, lakes, and canals, not surpassed by any on earth, extending into the country a distance of fifteen hundred miles from the

sea, and branching off in all directions from the main line of navigation. All these branches may not be navigable, but they are capable of being made so, and thus affording employment to those who leave us for want of it. By what means do we expect to improve our country, and make the most of our natural advantages? We certainly cannot move it southward to improve our climate. If we want energy and capital to improve it, what prevents us from having both, when both are within our own power? We cannot import them from another country for our advantage, although parties possessing such valuable commodities coming to reside among us, may employ them very much for their own advantage, by making a proper use of what we neglect to improve. Are we children in Canada, unable to do anything for ourselves, or help ourselves? We should be ashamed to own it, if we are so. We derive our origin from the same nations that have peopled the United States, and we are no credit to our fatherlands if we do not strive to equal our neighbours in everything. What should make us inferior to them, unless we are so deficient in patriotism as to fancy it impossible for us to be so. If we want examples of improvement, and energy to accomplish them, where can we find them to exceed our father land? We are no better than the degenerate offspring of two great nations, while we see our people emigrating from us for want of employment, and only lament our condition, without taking immediate measures for employing those people, and improving our condition when the means are in our power. Suppose we imagine these means not to be in our power, under our present circumstances, where, we would ask, under Heaven, do we expect to obtain them? Canada must be improved by her own people, and they are unworthy the possession of such a noble country if they neglect to do so, or allow themselves to be persuaded that they are prevented, or incapable of doing so. If there exists any obstacle at this moment to the improvement and prosperity of our country, who but ourselves are capable, or should be employed, to remove or remedy them? We are not children—we are men—and should act as men, in adopting, at once, any measures necessary to promote the welfare of our country and our people. There is a thousandfold more difficulty to be apprehended in seeking to improve our condition by any other means, than those that are in our own power to employ without danger or hindrance. Let us create a capital for ourselves that we can rely upon and retain. Any other capital we could induce to come to our aid will leave us again, augmented by the produce of our industry. The amount of capital that would be required would not be very large for the due improvement of agriculture. It would not be advisable to make an extravagant expenditure, but so far as would be expedient, no employment of capital would be so advantageous to the country as that applied to the augmentation of our productions, as it is the fields of Canada that must support our trade and commerce, our cities and towns, and also our revenue for the support of our Government. It is a plain fact, requiring no proof, that no country or people can buy more than they can sell, if they pay for what they buy. Is it not manifest then, that if we wish to improve the condition of our trade and commerce, and of our cities and towns, we must first augment the quantity and value of the productions annually created from our lands. The grand error in our system is, that capital has been employed in building cities and towns instead of applying it to improve the country and increase her productions. We can now perceive the consequences in the number of houses and stores that are untenanted and unoccupied. It is an absurd opinion to entertain, that the prosperity of

trade and commerce is not chiefly dependent upon the prosperity of the country. Let the country produce largely the most valuable products she is capable of, and there is then, at our disposal, an actual amount of value to be exported, where it can be done to advantage, and what cannot be exported will be at our disposal for the encouragement of manufactories, and support of them when established. It is useless to build stores to sell goods in if there is no means to purchase. Manufactories cannot flourish in a country that is not in a prosperous condition, unless the goods manufactured can be sold to foreign customers, and we believe this could not be expected by our manufacturers. The most they could expect would be a home trade, and consequently there will be a limit to our manufactures—that they never can be our chief dependence until our population are vastly increased. Home manufactures may assist us to a certain extent, but those who would expect to raise the country to a high state of prosperity by them alone would be disappointed.

Our object in writing this article is, to endeavour to persuade all parties who may read it to think well of this country, and to rest satisfied that we possess within ourselves all the power and means that are necessary to make it as prosperous a country as any on this continent, if we only employ them judiciously. It is honorable for us to rely upon ourselves, and upon the vast resources within our power. We are highly favoured in the country and the advantages we possess, and if we have been hitherto disappointed in our expectations, it would be well for us to examine what these expectations were, and whether it was not our fault when we did not realize any expectations that were reasonable. What we are most anxious to see is, every member of the Canadian community uniting, heart and hand, in their exertions to find out what can be done to promote the general prosperity of the country, and to adopt promptly any measures most likely to effect this good for all. There is no hope for our country or its prosperity while agitated by parties whose views are as opposite as the Poles. Let the love of our country prevail over all other considerations. A united people can make it a most prosperous and happy country, but disunion and party strife may ruin everything. It is utterly hopeless that any measures can be introduced for the general good if we cannot agree as to what these measures should be. At some future time, it will be matter of astonishment with those who succeed us, that we should so long neglect to improve the opportunities we had to advance and secure our prosperity, and at a period when improvement made such advances in every other country. We hope these suggestions will induce some party more competent to discuss this subject than we are, to take it up, and do it justice. We disclaim any intention to give offence. Our only object is the general good of the land we live in—not by the means we suggest, if better and more honorable can be proposed and adapted by us as a portion of the British Empire. In our father lands, men of all parties can unite in the most cordial manner to advance the interest of agriculture—the general welfare of the whole people being so much dependent upon it.

Agricultural Report for January.

The month of January has sustained fully the character of a Canadian Winter, up to this date, and we do not regret it, as it will have completed the bridges over our rivers in all directions to admit of the farmers coming to market with the produce they may have for sale. We hope they will, however, have considered what we submitted in our last Report, respecting the sale of produce. We regret that the prices of produce at Montreal are not more encouraging to the farmers, particularly that of

wheat, beef, and pork, which are all exportable articles. The wheat is of fair average quality this year, and was harvested in good condition. Pork is, perhaps, of as good quality as any that can be had in North America, fattened principally on peas, and indian corn, and peas are considered excellent for making good pork. We have seen very good pork sold at 23s. 1½d. to 25s. the hundred pounds weight, and this price does not pay the farmer well. The best beef, we have been told, was worth 30s. the 100 lbs. and we believe it has been sold from that price downwards, to one penny half-penny per lb.; the latter price, it is said, farmers have sold quarters of beef for in the Montreal market the quality of course could not be very good. From the market prices in England lately reported for salted beef and pork, one would imagine, a higher price might be paid here for any beef fit for exportation, and pork, as we have it, being excellent. We believe, if our pork was made into good bacon and hams, cut and cured as they do in England, that it would find a better sale, and more certain market, and there would not be any difficulty in adopting this plan. The price of bacon at Liverpool is from 40s. to 48s., and hams 60s. to 62s.; in London, the prices are 62s. to 72s. for hams. Canadian pork, bacon and hams, might be made to equal any in the British Isles, the food upon which they are fatted here being generally of better quality, than what they are fed upon in these countries. The price that can be obtained for salt butter of good quality is not to be complained of, and we have no doubt if farmers were more careful of making it up, and packing it in the proper sort of kegs, made air-tight at each end, a higher price could be obtained for butter. It is a great fault in salt butter when not of uniform colour, and saltness, in the same cask, and also when it is not packed closely, without any openings between the butter. Any man experienced in the making and packing of butter, and the consequences of these objections, which we submit, will admit our objections to be well grounded. All this, however, can be remedied by the butter maker and packer, and when a large quantity of butter would be made, the difference in value of the butter for a season would be very considerable, perhaps from one to two pence per lb. These are matters of some consequence to farmers, as good butter may be made in Canada, by skill and attention, as is produced in any country, without exception. Undoubtedly milch cows require care, in their summer and winter feeding, and we could not expect to make good butter from them otherwise. Exposure to great heat in summer, without shelter, and driving them a long distance to and from pasture, is very injurious, and should be provided against. These circumstances may be considered by many as of no great importance, but such is not the case. Every day we may see ill tasted and bad coloured butter in our markets, while other butter is excellent in taste and colour. There can be no cause for this, except the more judicious management of the cows and the dairy by those who have good butter than those who have bad. While we despise trifles in any part of agricultural management, we shall not excel as farmers or producers. The quantity of fowl brought to market this winter has been very large, of good quality and at very moderate prices. They are, and might be, a considerable item of the farmer's products. They do not cost a great deal for their keep, and they are a pleasing appendage of every farm-yard. The feathers are useful to the famliy, and if not required, may be sold for a fair price. Fowl, doubtless, pick up vast numbers of the insect tribes, that are the pests of agriculture. If more fowls were kept, and wild birds not wantonly shot down, for the mere pleasure of *killing*, we should have less insects to trouble us, and injure our crops. The wild birds might certainly be allowed to visit us for the summer season. It is pleasing to see many articles of domestic manufacture brought to the market for sale

by farmers and their wives and daughters; and all manufactured by themselves, at their own houses, from the produce of their farms, in wool or flax. It shows great industry in the female part of the agricultural class. They offer for sale very good Canadian cloth, flannel and linen—not superfine, but very suitable for country use, and for the use of the labouring class. The linen and flannel are very strong and good, and if the linen was bleached by themselves, it would soften its texture and make it much more valuable. This bleaching might be readily accomplished by the farmer's family, but perhaps it would prevent them having the linen to dispose of the same year that the flax is produced. We believe, however, that the higher value given to the linen would amply pay the interest of the amount invested in the linen for one year. The stockings, socks, and mittens they sell, are much better for country use, and for the labouring class, than what can be had in stores generally, with the additional recommendation of being lower in price. It is very desirable to encourage this industry, and it might be extended so much as to assist considerably the farmer's families, and almost all the work is executed at the slack time of the year, and at night. Store-keepers accustomed to buy these articles from the farmers, should instruct them, when necessary, to make the articles in the manner that would be most suitable for the uses that store-keepers retail them for. We do not see them offer any blankets for sale of home manufacture, and we think they might make them of much better quality and more lasting, than a large proportion of those imported. It is easy to calculate what profit a pair of good blankets would leave a farmer, by weighing a pair, and ascertaining what quantity of their own wool it would take to make a pair. Farmers in the old country, up to the period of our leaving home, scarcely ever purchased blankets, sheets, or any other articles that could be made from their own products. All their linen and flannel goods, and most of the woollen cloth worn by them, was made in their own houses, except the weaving. They invariably found linen made and bleached by themselves was much better and more enduring than that made and bleached by manufacturers. Flannel goods they also found more durable when made by themselves, than any they could purchase. One cause of this difference was, that neither wool nor flax made use of by the farmer had the best portions taken out of them by manufacturers for finer fabrics. The farmers, on the contrary, made use of flax and wool of the best quality, as it came to them The use of linen we should be glad to see, become more general instead of cotton, and for working men who use flannel shirts the Canadian farmers might supply a very suitable article. All these matters would have a great influence on the success of agriculture, and they are therefore entitled to the serious consideration of the readers of this Journal. We simply submit our idea on the subject, for others to improve upon it. However public manufactories may fail of success, those carried on in private families cannot cause much loss; and although the time and labour of the farmer's family may not be very richly rewarded, what is received is the reward of hours spent industriously, when, if they were not so employed, this time might be spent in idleness, or in expenditure of the farmer's means, which perhaps he could ill spare. The money gained by the sale of domestic manufactures, should be highly valued by the industrious families who make the goods disposed of, and they may rest satisfied it is highly creditable to them. The principal work of the farmers during the winter, is to attend to the farm stock, thrashing, and taking manure out to the fields, where required for use in spring. Doing this latter work in winter will greatly facilitate the spring work, and the manure if properly made up in heaps in the field, will not be so liable to be washed by water as if scattered about the yard. Fence

and fire wood should be provided, when the farmer can procure it—indeed every work that is possible to execute in winter should be done, to save the spring and summer season for work that cannot be executed in winter. We have been told that the country roads are difficult to travel upon this winter, in consequence of the great depth of the snow, and the roads not being tracked or made sufficiently wide for double, or even single sleighs to pass each other without great difficulty. This, we can very well believe, as some of the Turnpike roads in the neighbourhood of Montreal have been neglected and not tracked, or made sufficiently wide. It is much to be regretted when a law was passed for preventing any but carriages of a certain make to be made use of upon the roads in winter, that the same law did not provide that the roads should be made or tracked of sufficient width, or that double roads should be made. It is exceedingly difficult to travel in the country roads where they are not of the necessary width, and some change is required to be made in the law, either by the Legislature or by the Municipal Councils. The roads being too narrow for the carriages that are to be made use of upon them, is something similar in inconsistency, to a farmer having a stable built for his cattle and horses, and the doors made of so small size, that the animals could not pass through them.

This Agricultural Report is the first for this year, and we hope the season will be so favorable, that we shall be enabled to report of excellent crops, and that the farmers have done all that was incumbent upon them to have good crops. If we do our part well, we may confidently hope for favourable results, and that our skill, industry and attention will be crowned with success in an abundant harvest. Before we conclude, we would recommend farmers to provide themselves with good seed for the spring if they can obtain it, and to get it of unmixed varieties, particularly of wheat. Perhaps it would be well to try some of the varieties of wheat that we were accustomed to grow in Canada before the ravages of the wheat fly. If sown early the experiment might be made, but we would think it very unsafe unless it could be sown early in April. In any case it might not be prudent to venture to sow more than a small quantity. We are unable to state as yet, whether there will be any new supply of Black Sea wheat imported in time for spring sowing, but any information we may obtain we shall give in this Journal.

There is some inconvenience incurred by farmers in having to put off to the latter end of May the sowing of wheat. The land being so long ploughed, (from the previous fall,) becomes hard, and is sure to have the roots of weeds and grass that are in it commence to vegetate before the wheat is sown. This cannot fail to injure the crop. The sowing of grass-seed with the wheat so late as the latter end of May, renders the grass-seed liable to failure, as it will not succeed well when sown so late, and exposed to the great drought of our summers. We have seen many failures of grass-seed, owing to this cause, and have heard complaints from many parties, of similar failures. When grass-seeds do not come up thick and well, it is a great disappointment and loss to a farmer. We would recommend that grass-seed should rather be sown with other grain, barley particularly, than sown with wheat after the middle of May. This matter is of some importance. It is a serious loss, after breaking up land to improve it for meadow or pasture, to have the grass-seeds fail in it, and have all the labour to do over again. There is, besides, the loss of a year generally. The farmer, expecting the grass to come up, does not wish to plough up the soil immediately; indeed the regular course of rotation is interrupted, and interferes very disadvantageously, where an improved system of husbandry is desired to be carried on.

January 29.

We would again solicit all subscribers to this Journal to pay up their subscriptions. The trifling amount of five shillings cannot be an object with any party who reserves it, and the subscribers are so very much scattered throughout the country that it would take a large per centage to send to collect it all. Where agents have been named, we beg they will send us returns of the subscribers, and of those who have paid. It is a waste of money to be addressing the journal to any parties who will not take it from the Post Office, or pay for it. As this may be the case with School Commissioners to whom it is addressed, that they do not in all places take it from the Post Office, the Journal will be discontinued to any School Commissioners who do not apply to the Society to have them continued for the use of the Schools. We particularly request of agents to make their returns of all who wish to have the Journal addressed to them, and to strike off any of the School Commissioners who they know do not take the Journal from the Post Office.

We have seen from our exchange papers that sowing mixed crops is advocated by parties who have made the experiment, and we have no doubt this mode might be advantageously adopted in many cases, particularly with beans, peas, indian corn, potatoes, carrots, parsnips, mangel-wurtzel and turnips. These grain and root crops might be very well cultivated in alternate drills, as all except turnips require early sowing and might receive the after culture and weeding without injury to any of the crops. The young turnip plants are said to be preserved from the fly by having barley or oats sown in every alternate row, and considerably grown up, previous to sowing the turnips. If the rows were not too far apart, perhaps it would be better when the turnip plants were safe from the fly, to pull up the barley and oat plants to feed the cattle and not allow them to go to maturity. In sowing beans, peas, and indian corn, they will succeed well, with the roots we have named above in alternate rows; and there is no doubt that the soil will produce a greater weight of crop, than it would if any of these crops were cultivated alone. There is not much doubt that wheat or barley, sowed in alternate rows with root crops, might also succeed. The distance between the rows need not be great, as the wheat or barley coming to maturity long before the root crops would be taken up, would give the roots a much better chance to grow, the greatest difficulty would be to gather and harvest the grain crop without injury to the root crops. Experiment, however, would be worth making upon a small scale, to determine, whether mixed crops would succeed better, than if grown separately. It would appear to us that they must do so, as it is a well established fact, that different plants do not extract from the soil or from the atmosphere the same ingredients, or require the same for their perfection. We have seen a report of an experiment made with wheat, barley, and oats, sown in rows from 7½ inches to 30 inches apart, and some broad-cast, and the former was found to produce the best grain, and the rows farthest apart the most weight of grain to the same quantity of land. We would strongly recommend farmers to make some experiments in this matter, on a small scale that would not injure them, and to report the result to us. Sowing in rows allows air to the crop, and this is most necessary to wheat and barley, both of which grains are scarcely ever sown in England except in rows in any good farming. The sowing machines are regularly hired out to sow for farmers by the acre, who have not a machine of their own, and this they do cheaply, and expediciously. We do not expect to see this mode of sowing adopted generally in Canada for many years, but those who have means and opportunity might do a little in this way to show the advantage, if any, or to prove the disadvantage. We only offer suggestions to be acted upon by those who could afford to make a trial.

We should be sorry to lead farmers into expensive experiments, or to do anything that would be injurious to them.

Manure is of great consequence to the profitable cultivation of a farm—indeed no farm can be long cultivated to advantage that has not manure applied to supply the ingredients taken from the soil by crops. Every farmer may not have it in his power to apply a sufficiency of farm yard manure to keep his land in condition, but there is means of greatly augmenting the quantity of manure, by mixing that of the farm-yard with other substances, such as bog or moss, the cleaning from drains—and in fact any waste earth. The moss should be exposed to the air for some time before mixing with the dung, and when mixed, it should be suffered to remain for some time to ferment before applying it to the soil. Turning over the heap after mixing, once or twice improves the manure very considerably. Moss mixes better with dung than clay will, and is sooner fit for use. Moss, clay and lime, will, without any dung, make a good dressing for land, by mixing and turning over the heap several times. It should not be applied to the soil, however, until all the substances are thoroughly mixed and incorporated with each other. It is a very good plan to cover the farm-yard with moss, if to be had conveniently, after the manure is removed in the spring. Exposure to the sun and air, and the treading of cattle upon it, improves it very much for mixing with manure or with clay—and if lime was mixed with it, while remaining in this state, so much the better. There is abundance of moss to be had in Canada, but we are sorry to say it is not made much use of for manure, although, we believe, no substance in our power to obtain so cheaply, could be more advantageously employed for the improvement of our soil, both heavy clay, and sandy soil. Moss, mixed with either of these, has a very beneficial effect. It opens the heavy clay, and it increases the fertility of the sand. Compost, in a proper state of preparation, is one of the best applications as a top-dressing for meadow or grass—but of course its value will depend upon the materials and management of the compost before it is made use of as top-dressing. In Canada, we think that in winter the liquid manure can be best preserved by littering the animals with straw abundantly—or by box-feeding where the animal will have the manure remain under it for several weeks furnishing litter to it daily. This plan is very suitable to our climate—so far as the saving of liquid manure. Warm stables, with a box for each animal of three years old and upwards, would, we have no doubt, pay the farmer for the extra expense. Any animal will do better and thrive better loose in a stall, than tied and confined in one position.

The best service we ever can render to our country is by endeavouring to improve its natural resources, and augmenting the amount and value of its productions. These are advantages we never could be deprived of, and would not depend upon our trade with other nations. It is by large and valuable productions of our own, we can obtain the certain means of trade and commerce with other countries, and the poor farmer who only raises a scanty produce annually, has little interest in the trade or commerce of Canada. A well stocked and productive farm, gives the owner a station and respectability in the community which cannot belong to him, while he has only an ill-stocked farm yielding a produce too scanty to afford himself and his family common necessaries. It requires that a farm of 100 arpents should be well-stocked, well-cropped, and well-managed every way to produce sufficient for the comfortable support

of a family of the average number of individuals; and we believe this proposition will not be disputed. It may be imagined then, that an ill-managed and badly stocked farm cannot do much for an ordinary family, in providing them with what is considered necessary to constitute the comforts and conveniencies of life. It makes a vast difference whether a farm should produce annually what was worth one hundred pounds currency, or two or three times that amount. It not only would make a great difference to the farmer and his family, but to the whole country, because it augments the whole means of the country for expenditure. We are not an advocate for the extravagant expenditure of a family or of a country, particularly an agricultural one, but means of expenditure to a reasonable extent is necessary for our comfort and happiness, and should be the constant ambition of every man to attain. We would be very sorry by any remarks or suggestions of ours to cause farmers to be dissatisfied with their situation, except so far as to induce them to improve their condition if in their power, and to offer them our humble advice how this is to be accomplished. They may rest assured that the publication of this Journal has no other object than the improvement of agriculture, the prosperity of farmers and of the whole country. We may be mistaken in many of our propositions and suggestions, but there cannot be any mistake in stating that it would be advantageous for every farmer to have his lands produce good crops and have suitable and good horses, cattle, sheep and swine. These advantages can only be obtained by sufficiently draining the soil first—cultivating it properly—keeping down every species of weeds in the crops—not allowing any plant to come to seed, but what is produced from the seed sown—keeping the soil in a state of fertility fit to produce good crops—and disposing of the produce judiciously. The farm stock should be carefully attended to in breeding and feeding—no male animals kept entire more than to a few days old, except those required for breed—and having a good stock of agricultural implements for use.

At the great Smithfield Club Cattle Show held in December last, in London, it is said that the stock exhibited were generally superior to those of any previous Show. Although the cattle were not so *excessively* fat as at former Shows, they were considered better adapted for the food of man, and worth a higher price for the same weights. This was as it should be. The South Down sheep appear to have been the favourites. One lot was sold at the Christmas Market at £5 5s. sterling each. We have seen reports, that even the working men employed in Collieries of the North of England, who, heretofore, were accustomed to buy the fattest mutton of the Leicester sheep, reject this extremely fat mutton now, and buy in preference, meat that is of moderate fatness. Much money has been wasted in fattening cattle and sheep to excess. We do not say exactly by farmers, but by the public. Extreme fat in animals, may have cost at least one shilling the lb. weight, when if not made use of as food, it was only worth about three pence the lb. for making soap. In the Montreal Market, we have both beef, mutton, veal and lamb of sufficient fatness, and rarely too fat, and this will always be best for us. We do not pretend that the whole of these articles exposed for sale at our markets are of sufficient fatness, because they are not so; but there is constantly a good supply of good meat to be had in Montreal, and although some parties find fault with our beef and mutton as not being so well flavoured as that of the British Isles, we beg to differ with them. Our beef, mutton, lamb, and veal, when sufficiently fat, is exceedingly well flavoured, and seldom has that strong rank flavour, which these articles of food partake of so frequently in the British Isles from very

high feeding. Cattle or sheep, stall fed principally upon ground oats or barley, will always produce well flavoured and sweet meat—but of course the farmer who raises root crops will also feed them to his stock, and every farmer should raise some. Mixed food will be the best and most profitable, and keep the stock in better health than if fed on any one kind of food.

We give insertion to the communication of our respected correspondent, "An Upper Canada Farmer," on the subject of Lectures on Agriculture, which he recommends to be delivered in Montreal. We have always been anxious that some parties might be found to take up this matter, and deliver such a Course of Lectures in this city. Our correspondent is so favourably disposed towards us as to suggest that we should commence these Lectures. We are however, obliged to decline this honour, as we find sufficent occupation in editing this Journal, and acting in the capacity of Secretary to the Lower Canada Agricultural Society; and perhaps the subcribers to the Journal would think they have a sufficent share of our Lectures in the original articles published in it, without offering them any more in any other character. Our correspondent, we beg to propose, should commence these Lectures himself, and induce other parties to come forward and assist him to complete the Course. There should not be any difficulty in finding many competent men, in Montreal and the neighbourhood, to lecture on this subject, if they would condescend to do so, and take time to prepare and deliver lectures. We are confident that we can serve the cause more effectually by attending to the duties we have assumed, and endeavouring to make this Journal as useful as possible so far as we are capable of doing. Our correspondent, we hope, will give us credit for a sincere desire to advance the improvement of Canadian Agriculture, notwithstanding our declining to take any part in delivering the Course of Lectures he proposes. We shall be very glad to copy into this Journal the Lectures that may be delivered on this subject by other parties. The subscribers will thus have the advantage of reading other lectures besides those we constantly have to submit for their consideration, and it will assist us in providing useful matters for the Journal.

The President of the United States appears disposed to give every possible encouragement to agriculture, as the principal source of the wealth of that country. Canada is most unquestionably as much, if not more, dependant upon her agriculture than the States of the Union. A few thousand pounds granted annually by the Legislature to Agricultural Societies to distribute as they may think proper, has not yet advanced very much the improvement of Agriculture, or the instruction of agriculturists where they most required it. The most of those who participate in the funds distributed by Agricultural Societies, are exactly the class or portion of farmers who are the best instructed in their business, and who require no stimulant to induce them to adopt improved modes of husbandry, being already aware of the advantage of doing so. What we require is to instruct and encourage as much as possible, that class or portion of farmers who never had an opportunity of seeing or knowing the advantages of better systems of agriculture than they practice. Agricultural Schools and Model-Farms, we believe, would be best calculated to promote the general improvement of Canadian agriculture. Would it not be desirable also, to have the interests of agriculture under the charge of a special Department of the Government, that would give it some importance in the estimation of the people? We may be in error, but we humbly conceive, there is not any Department of the Government of more importance to the welfare of Canada

than a Department specially devoted to agriculture would be; provided it was ably filled, and efficiently conducted. France and Belgium have a Minister of agriculture. It is a matter of much more importance to every country to teach the people how to produce, than to appropriate the money after it is produced. A country rich in abundant productions is sure to be prosperous, while one that is not so cannot be made prosperous, until it becomes abundant in valuable production by all that Government or Legislatures can do for them.

At a late meeting of the Royal English Agricultural Society, the Report of the Council concluded in the following terms:—

"The Council congratulate the Society on the improvements successively made each year in the various departments of its operations, and on the general recognition of the value of its influence, in animating and sustaining the cause of practical farming; and they cannot entertain a doubt that, by the united exertions of all parties connected with agriculture, such a progressive improvement will be made in the alteration of the soil and the economy of British husbandry, as will promote the greatest production at the least cost, and thus be found contributing to the mutual interest of the parties more immediately concerned, and to the increased resources of the country."

Such is the opinion of the benefits produced to English agriculture by the action of that great Society, and we believe they are fully justified in their conclusions. There have been greater improvements produced in English agriculture, and all that is connected with it, since the organization of this Society, a period of less than ten years, than for the previous century. In Canada, Associations are formed for the advancement of improvements in agriculture, and for other beneficial objects, but we constantly see them soon lose their interest with the public, and their objects seldom carried out with that degree of energy necessary to ensure their success The same necessity that existed at the first formation of these associations, and which induced their organization, continues to exist in full force, when a manifest indifference, nevertheless, appeared to influence the members, and check their useful action. This has been the cause of failure with many a Society formed in Canada for a beneficial object. Unless the members feel continually interested, there is not much good to be expected, however important the object of their first organization.

We have received a "Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, roses," &c., &c., cultivated at Andre Leroy's Nurseries. Near the Rail-road, at Angers, Maine and Loire, France, 1849.

This Catalogue, both in English and French, may be seen at the Rooms of the Lower Canada Agricultural Society, 25 Notre Dame street, Montreal. An immense number and variety of ornamental and fruit trees, shrubs, and roses, &c,. are described, and advertised for sale at very low prices indeed; but the principal expense and difficulty is to get them from France to this country in a safe and growing state. If the proprietor of these nurseries would have a good variety brought out here under careful management, and at the proper season for transplanting, no doubt he might make a profitable business of it, but few parties here would venture to send to France for plants, that if not properly packed and taken care of on the voyage might be worthless on their arrival. Any parties, however, who may desire information on the subject may obtain it at the Rooms of the Society, and see the prices charged for each species, and variety. We believe plants grown in France would succeed very well in Canada. As we before observed, the great difficulty is to be able to get the plants required out here in a proper state for growing, and without paying too high a price for their transport to this

country. We copy the following introduction to the Catalogue referred to :—

The sweetness of the climate of Angers, the fertility of its soil, its position near the junction of four large rivers, and a rail-road, have made this city a place where every kind of cultivation is treated with the greatest care, and which has caused the city to be called "the Nursery of France." Every branch of Horticulture has there taken place to such an extent, that the Nurserymen formed, under the direction of the National Agricultural Society, a garden and school for instruction in gardening, in which exist a specimen of every kind of fruit-tree. The Society named a Committee for studying and classifying these fruits. When they are ascertained, cuttings are given to every Fellow of the Society. The organization and the extent of our establishment being very convenient, we have also formed, not only a school for the study of fruit-trees, but another for ornamental trees and shrubs, which stand the winter well in our climate. We have already collected about 1500 varieties of fruit-trees of different kinds. The largest number have fruited, and the fruits have been tasted, drawn, and described with the greatest attention. This operation procures us the means to furnish with a guarantee all the varieties described upon our Catalogue. As to those where the columns are blank, and which are of the largest number in the category of the new species, we will furnish them as we have received them, without guarantee. We could have filled those blanks in making the description from other books; but we have preferred to wait until those species have fruited in our Nursery. Those kinds so ascertained have farther the great advantage to give always sure cuttings for the propagation, and could compare with the divers varieties that we receive under different names, though being the same.

We have established, from our experience, and the best pomological works from France, Belgium, and those of the Horticultural Society of London, a synonymize, which became necessary for avoiding the repetition of the same species under different names.

In order to aid the purchaser in the choice of the kinds, and put it in his power to form a list of good fruits, the ripeness of which succeeds each other, we have indicated on our Catalogue the quality, size, texture, use, and the season of maturity; and farther, the fertility of the kind, and the form under which it grows best: finally, we have added some remarks as respects their modes of vegetation or other peculiar circumstances.

We have explained under every kind of fruit the meaning of the columns and abbreviations. Persons who address us with orders are respectfully requested to indicate very exactly under what form they desire their trees; that is, if they are for standard, pyramid, greenhouse, or for wall. The trees will be packed and shipped with the greatest care, and the expense will be added to the account of the purchaser. The charges of the voyage, insurance, and all risks and perils, are also on the account of the purchaser.

In case of damage, the reclamations ought to be addressed to the Agent charged with the transportation.

Terms :—Six months, on a bill of exchange, accepted by a bank, at Paris, Havre, or Liverpool.

Advice: If the trees arrive during the frosts, they should be put under cover, and not unpacked till after thaw; if they are dry, lay them down in a hole, covered wholly with earth, water them much, and keep them so during five or six days. By this means, dried trees will be restored to health,

Notice: In the orders that may be addressed to us, in order to avoid copying the names of the species, only state the number and quantity of each sort.

We have seen a very simple recipe for preventing rats or mice in stacks or barns of grain, which we give below. We cannot answer for its being a perfect remedy against them, but it is not expensive to try the experiment, and it will not injure the grain or straw :—

"Take one pound of nitre or saltpetre, and one pound of alum, dissolve them together in two pints of spring well-water, get a firlot of bran and make a mash thereof, putting in two pints of the above liquid, and mixing up all together. When you build a stack, every second course, take a handful or two of the mixture and throw upon them till they come to the easing—allowing your stacks to stand twenty years, rats or mice will not come near them."

Another receipt:—

"Make a paste of flour, a few sweet almonds powdered fine, and a little treacle, add a few drops of oil of aniseed, and to a pound of paste, add about a tea-spoonful of carbonate of barytes. make small holes in pieces of turf fuel, put in a small portion of the paste, and run in the pieces of turf here and there all round the stacks; examine them twice or thrice during the season, and renew them when the paste is consumed."

Effects produced by the Rains as they descend through the Soil.—1st. *It causes air to be renewed.*—It is believed that the access of frequently renewed supplies of air into the soil is favorable to its fertility. This descent of air

the rain promotes. When it falls upon the soil, it makes its way into the pores or fissures, expelling, of course, the air which previously filled them. When the rain ceases, the water runs off by the drains, and as it leaves the pores of the soil empty above it, the air follows and fills with a renewed supply the numerous cavities from which the descent of the rain had driven it. Where land remains full of water, no such renewal of air can take place.

2nd. *It warms the under soil.*—As the rain falls through the air, it acquires the temperature of the atmosphere; if this be higher than of the surface soil, the latter is warmed by it, and if the rains be copious and sink easily into the subsoil, they will carry this warmth with them to the depth of the drains. Thus the under soil in well drained land is not only warmer, because the evaporation is less, but because the rains in the summer season actually bring down warmth from the Heavens to add to their natural heat.

3rd. *It equalises the temperature of the soil during the season of growth.*—The sun beats upon the surface of the soil, and gradually warms it; but even in summer, this direct heat descends only a few inches beneath the surface. But when the rain falls upon the warm surface and has an easy descent, as in open soils, it becomes itself warmer and carries its heat down to the under soil. Then the roots of the plants are warmer, and general growth is stimulated.

It has been proved by experiments with the thermometer, that the under as well as the upper soil is warmer in drained than in undrained land, and the above are some of the ways by which heat seems actually to be added to drained land.

4th. *It carries down soluble substances to the roots.*—When rain falls upon heavy undrained land, or upon any land into which it does not readily sink, it rises over the surface, dissolves any soluble matter it may meet with, and carries it into the nearest ditch or brook. Rain thus robs and impoverishes such land; but let it sink where it falls, and if it dissolves anything, it will carry it downwards to the roots, will distribute uniformly the saline matters which have a natural tendency to rise to the surface, and will thus promote growth by bringing food everywhere within the reach of plants.—*Johnston's Agricultural Chemistry.*

Caution to Poultry Breeders.—Perhaps it may not be generally known that if chickens, fowls, or ducks eat a quantity of new vetches, it will inevitably cause death. A case of this kind occurred a short time ago at Mr. Thomas Lane's, of Radford, in this county, which swept away a large quantity of young fowls. Mr. Lane had been thrashing some vetches with the machine, and the straw, being very good, was put on two waggons to be drawn and made into a stack; but a heavy rain falling in the meantime, which penetrated through the loads, it was obliged to be thrown into the yard. The straw had some loose vetches mixed among it, which were made soft by the rain, and of which the fowls partook plentifully, and this caused the death of upwards of 100 very fine fowls. On examination after death their gall-bladders were found to be much swollen and surcharged. Old vetches are not supposed to be deleterious.—*Worcester Chronicle.*

Mrs. Fry's Rules.—1. Never lose any time. I do not think that lost which is spent in amusement or recreation some time every day; but always be in the habit of being employed. 2. Never err the least in truth. 3. Never say an ill thing of a person when thou canst say a good thing of him; not only speak charitably, but feel so. 4. Never be irritable or unkind to anybody. 5. Never indulge thyself in luxuries that are not necessary. 6. Do all things with consideration, and when thy path to act right is most difficult, feel confidence in that Power alone which is able to assist thee, and exert thy own powers as far they go.—*Memoir of Elizabeth Fry.*

Description of a Farm-yard and Farm Buildings.—I have drained and subsoiled, at my own expense, 150 acres of my farm, the whole of which, amounting to 800 acres, I am in progress of fencing and dividing into 15 and 20 acre fields, on the highest point of which I have built a farm-yard, which gives accommodation to 15 working horses, 126 cows, for the pail and butcher, 300 sheep, 50 pigs, with all that follow them. The yard forms a parallelogram, and being on the slope of an eminence in the farm, the lower or ground story has been excavated—that is, I had 4,097 cubic yards of cutting to make the yard even; the haggard is, therefore, on a level with my barn-loft, which is 114 feet long, 18 feet wide, and 12½ feet high, to the wall-plate, on the north side of which is my thrashing-machine; so that I thrash on one loft, winnow on the one underneath, and drive the chaff into a third house which adjoins the granary, and all is done at the same time, by four horses. From the north side of the barn runs east a straw loft, 127 feet long, over dairy, piggery, and fowl-house; and at the opposite side runs a hay-loft, over stable, cow-houses, &c., of equal dimensions; so that a horse and cart can, from the haggard, enter the barn, and traverse a loft of 127 feet east, 114 feet south, and 127 feet west again, the floors being made of such materials as to bear, without injury, the heaviest load a horse can carry, and all covered in with the best Queen slates. This will give Mr. Friar an

idea of my farm-yard, out of which, and to the south is my manure-pit, ten feet lower than the farm-yard, and into which, by means of conducting drains, all the liquids are conducted, and at the lowest point of which is the manure-pump. Farmer's Gazette.

Government encouragement to Agriculture in Belgium.—The Belgian Government has taken measures to propagate in the country the methodical improvement of the land by means of subsoil drainage, which has latterly been found so beneficial in England. Machines have been constructed and conveyed to different points of the kingdom for the manufacture of the tiles necessary for carrying off the water, as well as the tools required for the construction of the trenches. A complete treatise on drainage has been written, and will shortly be published. Lastly, an engineer (M. Leclerc), from the first School of Civil Engineers of Ghent, has been sent into this country to study all the details of the new system; after a sojourn of some months this officer has just returned to Belgium, furnished with all the necessary knowledge; he will be in communication with all landowners or farmers who may desire to make trial of his plans. A decree issued by the Minister of the Interior regulates the conditions under which the works are to be carried on. A society has been formed to demonstrate the good effects of subsoil drainage, to enable proprietors more easily to construct the works, and to collect information treating of the new system; some of the richest landed proprietors have already enrolled their names as members. The Minister of the Interior has placed M. Leclerc at the disposition of this society.

Sex of Eggs.—A correspondent of the *Agricultural Gazette* says:—"I am induced to tell you that, without pretending to any knowledge of abstruse mysteries, I have learned to discover which eggs will produce pullets, and have pursued the practice through this season with uniform success. It consists simply in this—to avoid setting the long shaped eggs, which always produce cocks, choosing the rounder and plumper ones. Generally, too, I have found that the very largest eggs produce male birds. I select, therefore, the most promising rounder shaped eggs, without taking the very largest. It is certainly an important matter to succeed in this department, having myself often had the mortification to have a whole brood of cocks, or nearly so; theavoidance of this inconvenience is truly a desideratum."

Hints about Fire.—Incase of fire, whatever may be the heat of the moment, keep cool; let nothing put you out, but find something to put out the fire; keep yourself collected, and then collect your family. After putting on our shoes and stockings, call out for pumps and hose to the firemen. Don't think about saving your watch and rings, for while you stand wringing your hands, you may be neglecting the turn-cock, who is a jewel of the first water at such a moment. Bid him, with all your might, turn on the main.

Smoky chimneys.—A correspondent of the *Builder* says—"I have built many chimneys in all possible situations, and have found one simple plan everywhere succeed, the secret being only to construct the throat of the chimney, or that part of it just above the fire-place, so small that a man or boy can scarcely pass through. Immediately above this, the chimney shaft should be enlarged to double its width, like a purse, to the extent of about two feet in height, and then diminish again to it usual proportions. No chimney that I ever constructed thus smoked."

SONG OF THE PLOUGHMAN.

WRITTEN AT THE REQUEST OF ONE OF THE MEMBERS OF THE TRAFALGAR AGRICULTURAL SOCIETY.

See the morning breaks away,
Waken ploughman to your toil;
From early dawn till gloamin' grey,
Guide the plough and turn the soil.

Draw the furrow long and deep,
Scatter widely—never spare;
Let the harrow o'er it sweep—
The faith of future bread is there.

Nature now her aid is bringing,
Green the dewy braird is springing;
Hear the lark above it singing—
The faith of future bread is there.

The summer sun all brightly glows,
Diffusing life and joy around;
The genial showers so mildly flow,
Imparting freshness to the ground.

On lowly strath, on rising bank,
The ploughman's fostering care we find;
Where fertile fields, so strong and rank,
Charm the eye and cheer the mind.

Cattle on the lea are feeding,
Fleecy flocks the hills are cleading;
Beauteous flowers their blossoms spreading.
Charm the eye and cheer the mind.

'Tis autumn, and like burnished gold,
All radiant shine the treasure-fields;
How fair the prospect to behold—
What precious promises it yields.

An empire views with grateful eyes,
And harvest songs afar resound;
Behold the ploughman's glorious prize:
See all his toils with blessings crowned.

Myriads to his aid are flying,
Reaper bands their sickles plying;
Sheaves and shocks behind them lying,
See all his toils with blessings crowned.

May plenty fill the rural hall,
And honoured be its owner's worth.
At morning's rise, at evening's fall,
Be love and joy around the hearth.

While workshops jail their sickly bands,
Engaged in competition's strife,
The ploughman, with judicious hands,
Wields the stay and staff of life.

Unmoved he hears what crowds are saying,
Of battles fought, of foemen slaying;
But on the plough his powers laying,
Wields the stay and staff of life.

JAMES PRINGLE.

Craigmill, October, 1849.

FARMING IMPLEMENTS.

WE, the undersigned, certify that we have carefully inspected a variety of Farming Implements manufactured by Mr. A. Fleck of St. Peter Street, and we feel great pleasure in recording our unqualified opinion that they are very much superior to any article of the kind which we have seen manufactured in the country, and equal to any imported.

And we would particularly recommend to the notice of Agriculturists throughout the Province his Subsoil Grubber, which he has improved upon from one which took a premium of £10 from the Highland Society of Scotland. This implement seems well adapted to improve and facilitate the labours of the Farmer, and we cannot doubt that it will soon be extensively used in improved cultivation. His Scotch and Drill Ploughs are also very superior, and well worthy of the inspection of every one desirous of possessing a valuable article.

M. J. HAYS, Cote St. Antoine,
President M. C. Agricultural Society.
P. P. LACHAPELLE, Sault au Recollet.
WM. EVANS, Sec. L. C. Ag. Society.
JAMES SOMERVILLE, Lachine.
EDWARD QUINN, Long Point.
T. E. CAMPBELL, Major, Civil Secretary.
HUGH BRODIE, Cote St. Pierre.
P. F. MASSON, Vaudreuil.
JAMES ALLAN, Pointe aux Trembles.
GEORGE CROSS, Durham.

CANADIAN GLASS MANUFACTORY,

NEAR SNYDER'S LANDING, VAUDREUIL,

Erected and carried on by Messrs. Boden & Le Bert.

THE Proprietors of this establishment are prepared to Manufacture LOOKING GLASS PLATE and WINDOW GLASS, of every size, coloured and fancy, according to patterns or orders. Shades for Oil and Gas Lamps, plain, tinted, or coloured, in the richest hues—Coloured Glass of any pattern for Churches, similar to those of European Churches; also, for Cottages, Gardens, Houses, and Steamers—Bottles and Vials for Druggists made to order.

—ALSO,—

SODA, GINGER, and ROOT BEER BOTTLES, with or without the maker's name.

—AND,—

MILK CANS, of suitable sizes.

All these articles shall be of the very best quality and disposed of on reasonable terms; and the proprietors solicit a share of public patronage, and the examination of their Manufactures.

For orders or further particulars enquire of the proprietor, at the People's Hotel, No. 205 and 207, Notre Dame Street, Montreal.

Vaudreuil, January, 1850.

AUCTION SALE OF FRUIT TREES, &c.

THE undersigned is authorised by the Proprietor of ROSEBANK NURSERY to state, that, as early after the opening of the navigation in spring as possible, there will be a Sale by Auction, in this City, (similar to that which took place this fall) of

Apple Trees,	a fine assortment of suitable named sorts.			
Pear	do	do	do	do
Plum	do	do	do	do
Cherry	do	do	do	do

TOGETHER WITH

Raspberry Bushes, Strawberry Plants of fine named sorts, Roses, and various Ornamental Trees and Shrubs.

The healthy condition of these Trees and Plants, and the accuracy of their names, may be depended upon, and the sale will take place in good time for subsequent spring planting, which is the safest, at any rate, in all northern climates.

JOHN DOUGALL,
Montreal Witness Office.
Agent for Rosebank Nursery.

Montreal, November 30, 1849.

REAPING MACHINES.

THE Subscriber has on hand three REAPING MACHINES of the latest and most improved construction, *capable of cutting twenty-two acres per day.* Being manufactured by himself, he is prepared to warrant both material and workmanship as of the best order. Price moderate.

MATTHEW MOODY, *Manufacturer.*

Terrebonne, July, 1848.

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