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AGRICULTURAL JOURNAL,

AND

TRANSACTIONS

OF THE

Lower Canada Agricultural Society.

VOL. 5

MONTREAL, JUNE, 1852.

No. 6.

The agriculturists of Lower Canada should do all in their power to produce such articles as will meet a ready sale, at remunerating prices. Articles that are produced for export, as well as for home consumption, will be most likely to pay the producer, because there will not be much probability of the market becoming glutted. We are glad to perceive an active sale of articles that may not certainly be of great value, but they sell for money, when, without this demand for them, they might be wasted or neglected. We allude particularly to the extensive sale of eggs and of oats to pack them in, for the United States, also common straw hats, which are a new article of exportation to the same country. Fowls, we believe, are purchased for the same purpose, and if not, they might be, to a great advantage, considering the prices we have seen paid for fowls in the markets of New York and Boston. Butter, if good and packed in a proper manner, would generally pay well for exportation, and now that the price of fresh butter has fallen considerably in the market, farmers would do well to prepare it in another way for sale, by packing it in suitable casks or crocks. It is not profitable to take fresh butter to market and not be able to dispose of it for a fair price, and the butter is not improved by such exposure and packed subsequently. It would be much better to pack the butter at once from the churn when it cools and is made up; handling too often is an injury to the quality and appearance. We have most excellent butter made in Lower Canada, and all of it might be equally good if properly managed. The articles we have enu-

merated above might be produced to supply almost any demand that would be for them, and though they may not appear of great consequence, they are well deserving of the attention of farmers, and might be found more profitable than other branches of husbandry. The cultivation of flax and hemp for Canadian manufacture, and for home use, we have long recommended, but these plants are still neglected, and not grown to any extent. The cause, however, is the uncertainty of finding a sure and remunerative market, which we cannot expect until mills are erected for dressing flax and hemp, and parties found who will purchase the crop when produced. These crops cannot be grown without considerable expense to the farmer, and it would be unreasonable to expect him to incur this expense without some chance of selling the produce. Manufacturing sugar from the beet is another branch of industry we should encourage. This climate and soil would be very suitable for producing the sugar beet, and as good sugar might be made from it as from the sugar cane. This manufacture has been introduced into Ireland, and we have seen late accounts of the produce of sugar being very superior, equal to any made from the sugar cane. We refer our readers to an article we copy below from the "London Illustrated News," on this subject.

BEET-ROOT SUGAR FACTORY AT MOUNT-MELLIICK, QUEEN'S COUNTY, IRELAND.

We are indebted to modern chemistry for the knowledge that the sweetness of many vegetable substances is due to the sugar contained in them, and for the art of extracting it from them in its crystallised form. Till the commencement of this century, all the sugar of commerce

—then amounting in Europe to between 250,000 and 300,000 tons, as well as all that was consumed in Asia—(probably a much larger quantity)—was obtained from the cane, and that was supposed to be the only substance from which art could extract sufficient to supply the wants of mankind. To cultivate it and manufacture sugar for the market of Europe was for many years the principal inducement for continuing and extending the slave trade. Two lines of Cowper express at once the general belief, and the horrors to which it led:—

Has God then given its sweetness to the cane,
Unless his laws be trampled on, in vain?

Soon after the commencement of this century, when the war prevented France and the Continent in general from obtaining colonial produce, some French chemists thought of applying the knowledge they had acquired of the nature of sugar to producing it from vegetables grown in their own country; and being encouraged by Napoleon, as well as by the enormous price of the article (upwards of 2s. per pound), they succeeded in producing a coarse and weak sugar from beet-root. This occurred about 1810, and from that period the manufacture of sugar from beet has been continued and extended. Though it was much checked on the return of peace, and the free importation again of sugar from the colonies into Europe, the manufacture had become so important, that the Government of France and some of the Governments of Germany encouraged and protected it by imposing high duties on cane sugar. From that beginning, promoted by being in the centre of all the knowledge of Europe, having at its service all the arts of Europe and an unlimited command of free labor, it has come to rival cane sugar, and beet-root is now one principal source of supplying sugar—not only for France, but for Belgium, Germany, Russia, and indeed the whole Continent of Europe. It has improved agriculture and given employment to a great number of people. In 1830 the whole produce of France was estimated at about 8000 tons; in 1851 at nearly 80,000 tons. The beet-root sugar made in the Zollverein was estimated in 1840 at about 15,000 tons; and in 1851, at about 45,000 tons. Probably, half as much more at least as is made in France and in the Zollverein is made in all the other parts of the Continent. In Belgium the quantity made is said to be 7000 tons, in Russia 45,000 tons; making a total of beet-root now manufactured in Europe at least 150,000, and probably 180,000 tons, or nearly one-seventh part of the present consumption of Europe, America, and our various colonies. In 1847 this was estimated at upwards of 1,000,000 tons; and, as the production has increased considerably since that period, it is now probably not less than 1,100,000 tons.

The most extraordinary fact, however, in connexion with the manufacture is, that the price at which beet-root sugar can now be produced

enables the manufacturer to compete with sugar made from cane by slave labor without protecting duties, though they are still continued both in France and Germany. The quantities of sugar made from beet, and the low price at which, by the help of the protecting duties, it is enabled to be sold, are amongst the causes of the great reduction in the price of sugar, by which our community and the whole of Europe benefit, and of which the West India planters bitterly complain. According to a parliamentary return, the average price of Cuban and Brazilian sugar in Europe in 1842-44 (but since then several improvements have been made in the manufacture) was 17s. 5½d. per cwt., equivalent to £17 9s. 4d. per ton. Mr. Sullivan, the great scientific guide to those who are undertaking to make beet-root sugar in Ireland, in his pamphlet on the subject, puts it down at £21 or £22, which may, perchance, lead his sanguine countrymen into error. It is right to add that Mr. Sullivan's estimates are made from the selling price at Hamburg, where these foreign sugars had a market, and they did not, on account of the high duties, find a market here at the period of the return. At the same time we must state that the present price of Havannah sugars in the London markets varies between 17s. 6d. and 21s. per cwt., in proportion to their fineness; and the price of Brazilian sugars varies between 13s. 6d. and 21s. 6d.: and we are not in a position to judge of the relative goodness of beet-root and these other sugars, but some of them are very fine.

We may also notice that Mr. Sullivan puts down the rate of freight at too high a figure; and he may be incorrect in other statements which we have no power to verify. He says, "the usual freight from the East Indies and Penang is £5 per ton." Now, the average freight from Calcutta for the eleven years 1841-1851, as stated by Mr. Lindsay, in his work on the Navigation Laws, was £4 10s. 6d.; but the average of the last four years was only £3 7s. 11d.; and £10, which Mr. Sullivan says it sometimes amounts to, has not been once reached in the last twenty years. Within the last year, however, freights from Calcutta have been down to 15s.; some of the latest advices speak of them as having risen to £2 2s., which is more likely to be about the average hereafter than £5. This is of great importance to the Irish manufacturer, because sugar can, we believe, be imported from India at a lower price than from any other country. We will not, however, enter further into criticisms that might damp the ardour of those who are engaged in what promises to be a very useful, and, we may hope, profitable enterprise. Not pretending to say exactly at what price cane sugar can now or may hereafter be imported into England, it is a certain fact that beet-root sugar has fairly competed with it on the Continent, where the cost of carriage from the seaboard has hitherto been very considerable; and it is estimated that

beet-root sugar can be manufactured in many parts of Europe at a less price than must be given for cane sugar. In Mr. Sullivan's elaborate pamphlet he insists very strongly on the great advantages possessed by Ireland for growing beet; and he estimates the cost of obtaining pure sugar at from £16 17s. to £19 18s. per ton, according to the quantity of sugar in the root. We are afraid that this comparative estimate is too sanguine in favor of Ireland; but certainly enough has been done on the Continent, and there is so much probability of the expense of the manufacture being still further reduced, that the experiment now making in Ireland on a grand scale to manufacture sugar from beet-root, to compete with sugar manufactured from cane in our own colonies and paying equal duties, seems fully warranted. There is at least a probability of success.

Of all Bonaparte's mighty schemes and conquests, it is singular that none have had such abiding and important results as his temporary prohibitions of trade—intended to be only temporary, but to effect the ruin of England. From his Berlin and Milan decrees there has sprung a great manufacture, which is giving a permanent direction to the industry and improvement of Europe, and has done more than all our squadrons on the coast of Africa to suppress the slave trade, by reducing the price of sugar and rendering slave labor unprofitable by bringing it into competition with free labor. Of such consequences none of the men of 1810 had the most remote conception; and we every day see similar instances, more distinctly proving of nations than of individuals, that the Divinity "points our actions rough hew them as we will." Another important truth is made manifest by this great change, viz. that all the supposed advantages of soil and climate are of little importance in creating wealth, compared with industry, knowledge, and skill.

Following the examples, of which we have given a rough and brief sketch, a company has been formed for manufacturing beet-root into sugar in Ireland, and a factory, erected after the designs of Mr. Ashenurst, of Dublin, covers a large area at the entrance of the town of Mountmellick, in Queen's County, sixty miles from Dublin, and six miles from Portarlington railway station. In little more than three months the first building has been completed. It is the first step for introducing the manufacture into Ireland. It is erected with a refinery, replete with all the appliances necessary to produce sugar of the first quality by the most approved continental methods, combined with some improvements which will ultimately reduce the cost of manufacture much below that on the Continent. The cost of the building, inclusive of machinery, was £10,000. It has two steam-engines, together of 40 horse power, and employs 160 laborers. In addition, the company's operations afford occupation to a considerable number of laborers in cultivating beet—in-

creasing their resources, and finding a market for the produce of the land. From the superior quality of the root produced, Ireland appears admirably adapted to the growth of the beet. At present the supply is limited, and the price enhanced by the company's demands. They were not anticipated, and the farmers of the locality were not prepared for them. The company requires 300 tons of beet-root per week, which will soon exhaust all the produce of the neighbourhood. It is feared, therefore, that they will be limited in their operations by wanting the raw material, of which, however, an abundant supply is expected next spring. The average produce is said to be 26 tons per acre, at 16s. per ton, which is 10 tons per acre more than is produced on the Continent. The price, however, is 3s. higher than on the Continent; but the company has made contracts for next season at the continental prices. The results already attained promise ultimate success. The promoters have had the courage to brave popular prejudice, and prove to sceptics, that results effected in continental Europe could be attained in Ireland, where climate and soil are favorable to the object. The company have also erected an auxiliary establishment at Donnyhouse, Queen's County, for the purpose of cutting and drying the beet-root, by which its saccharine property is retained uninjured for an indefinite period, enabling, which is one of its advantages, the manufacture to be continuously carried on. The maximum strength in saccharine matter of the continental roots is 7 per cent. raw, or 6½ per cent. refined sugar. The trials of the root of Ireland of this year gave 7½ per cent. in raw sugar. Refined sugar was to be made in the first week of April, although not largely, in consequence of the excellent quality of the grain of the raw sugar.

The cost of manufacturing the sugar from the root on the Continent averages £9 per ton; at Mountmellick the cost has been £7 5s. per ton. This result has been attained by superior machinery and superior arrangements to those of the Continent; and it is reasonable to hope even for further economy in cost of production. The total cost of manufacturing raw sugar on the continent averages £17 15s. per ton at the present price of roots. At Mountmellick the total cost is £17 per ton. There is no reason, therefore, why the company may not succeed. It is incorporated by Royal charter, and has a capital of £120,000, with the privilege of extending it to £300,000. The company purpose to erect in the present year six factories more in Ireland, which will be indebted to the company for the successful introduction of a new and important manufacture, suited to her climate and her wants.

The difficulties to be overcome were not merely mechanical: the laborers required instruction in the details of the various processes. The results now attained, after a few weeks' instruction, are full of encouragement. The

sugar receives a high character in the markets, planters and brokers admitting that it cannot be distinguished from the best cane sugar—a reputation never before achieved by beet sugar. As the details of making beet sugar will doubtless be interesting, we publish sectional Views of the Factory at Mountmellick. A reference to the ground on plan and the sectional Views will enable the reader to form a pretty clear idea of the different stages of the process through which the beet passes before it becomes sugar; but, in order that the matter may be fully understood, we also give the details of the manufacture, as pursued at Mountmellick, which have been furnished us by the company.

PROCESS OF MANUFACTURE.

The roots are topped and tailed, re-weighed, and then washed in the cylindrical washing machine, from which they are thrown into the rasping machine, from which they pass at the rate of two half tons per hour, being converted into a soft pulp. This pulp is filled into woollen bags, and receives its first pressing, which is given by a machine like Nasmyth's steam hammer: from thence it is passed to one of a number of powerful hydrostatic presses, capable of exerting a pressure of many hundred tons. All the juices are received into a tank communicating with a *mon'juis*, or juice elevator, which by steam pressure raises all the fluid to the third story of the building. Here are four successive coppers called defecators; into one of these the juice is poured, while within is a copper coil or worm heated by steam of sixty degrees to the inch pressure derived from the nine different steam generators in another part of the establishment: the heat being applied, a quantity of lime mixed with water is poured in, when a filthy scum rises, while clear juice runs down through the filters, previously filled with charcoal, of which there are twelve in all. After passing through it is raised by another *mon'juis* to a large iron tank, and drawn off as required into another range of coppers similar to those above. The juice here loses by evaporation four-fifths of its water, runs again through the filters into another *mon'juis*, is again elevated into great iron tanks, and passes into the vacuum pan, where the remaining water is evaporated. It is then run into a soft grainy state into the heater, where it is raised to a higher temperature, and next run into the crystallisers. When sufficiently cold it is passed through a sort of mill, and finally into one of the newly improved centrifugal machines, where the separation of the molasses takes place. This centrifugal machine is self-feeding and self-discharging, and will do more work in an hour than four of the old machines in six hours. The sugar is now perfect. To make loaf or refined sugar, the raw sugar is dissolved and passed through the filters a third time, again boiled in the vacuum pan, and when nearly cold in the crystallisers it is poured into cones, which are put (fifty in num-

ber at one time) into a rotatory cage, and by the centrifugal force the molasses is thrown out of them. After the sugar is taken out of the cone, the top and base of the pyramids is finished by rotatory cutting-machines: they are then allowed to stand for a few hours, and packed in blue paper, as seen in the shops. Some operations and some machinery we are not permitted to describe, but the above will give a fair idea of the various processes necessary to convert the root into the crystallised grain or snow lumps, of which specimens can be seen at almost any broker's in Mincing-lane.—*Illustrated London Times.*

CULTIVATION OF THE POTATO.

The mode of Planting or Setting.—This must vary according to the nature and condition of the land to be planted. If it is naturally rich in quality, or is artificially worked up to a highly fertile state, the planting may be at wide intervals from row to row, and thin along the rows; if the land is poor or ill-conditioned, the planting may be proportionably thinner. The same rule will hold good as respects the varieties of potato to be planted, and the choice should be made accordingly—the smaller and dwarf growing sorts for rich soils, the larger and freer growing sorts for the poorer soils. We have no room for remarks upon varieties; but would, in passing, say that the *regents*, the *pink kidneys*, the *white ruffs*, the *red ruffs*, the *Devonshire reds*, the *York reds*, and some others, are known to us as good general varieties for the best soils; as are also those early varieties, the ash-leaved kidney and the Yorkshire kidney; and we also know the *ox-noble*, the *white blossom*, the *snother ground*, the *early shaw*, the *poor man's profit* (blue,) and the *mangold wurzel* (this is for cattle exclusively), to be good varieties, and well adapted for inferior soils.

The Sets.—These should be prepared immediately prior to planting. The smaller potatoes may be advantageously planted whole, but the larger ones should be cut into proper sized sets, none being smaller than a very large walnut; and care must be taken to see that each set has at least two perfect eyes. We think the best crops are to be obtained from planting large sets cut from the best and finest potatoes. This, however, is seldom done owing to the great difference in value between the *marketable* and the *chat or seed potato*.

Planting.—On soil's recently broken up from pastures or seeds, where it is desirable to prevent the grassy sod from being turned up and exposed on the surface, it is customary to set by the spade or by a kind of dibbling. In setting with the common spade the usual course is to lay lines along the field; a number of men, each attended by a setter, work along the line at given distances, so that all finish at the same time, and are prepared to remove the lines for the next row; the men make a hole with the spade by

digging it into the soil, and slightly turning it so as to admit the potato set; and as they proceed rapidly down the line, they make the holes, the lad or setter drops in the set, upon which the man puts his foot on passing, and it is done.—This mode we frequently practise; and our sets are put in at ten-inch intervals, and about four inches in depth, in rows about twenty-seven inches apart. On the old cultivated lands the customary mode of planting, is on the furrow sole made by the plough. The usual course we pursue is as follows:—The land being properly prepared, and the manure ready for spreading, two lines are drawn or points are set out about 45 to 50 yards asunder at each end of the field—from point to point the whole length of the field the spreading of the manure commences, being thrown out of the cart, and is well shaken about by lads, the cart being led as straight from point to point, or down the line, as possible, and the spreading is just wide enough to give room for the next operation, and no wider; as we hold it to be of very great importance that the manure be put in fresh, the potato set upon it, and the whole covered in at once. As soon as this is done the whole business proceeds together: the ploughman draws out two ridges along these manured lines, going a round or “*bou*” on each, by which he will leave the edges of the furrows nearly 28 inches wide, the setters proceeding to set the one as soon as ready, whilst the ploughman is setting out the other; and thus the work goes on throughout the field—the setters are setting one ridge or furrows around it whilst the ploughman is preparing the others; our usual practice being to set on the sole of the land side of every third furrow, the width of each furrow being in accordance with the desired width between the rows. The manuring is also arranged in a similar way; each ploughman has a lad to follow and draw into the furrow the manure as equally as possible, and along the rows to be planted more particularly. The sets are planted on the furrow sole with their eyes downward—if possible, and at about 10-inch intervals, according to the condition or fertility of the field; a light harrow is drawn over, and occasionally a light roll—either may be done without injury to the crop. Another common course is to ridge the field, as on the Northumberland plan for swedes, deposit the manure in the same manner, and plant the potato on the manure, and cover in and roll down as for turnips; we have frequently seen this done, but never to much advantage, possibly owing to the looseness of the soil around the sets, and the larger vacuum caused by the decay of the manure, and also the set in the ridge.

Subsequent Culture.—The first operation on the potato plant appearing above ground is to give the crop a light harrowing across the rows; in a few days the first horse-hoeing may take place, taking care to pass the side coulters as near to the plants as possible; in a day or two the ridge harrow should follow: both these operations should be repeated, if the weather is fa-

vorable, in about a fortnight afterwards; the great object is to keep up a thorough good pulverisation, as well as to promote cleanliness.—As the plants grow, the next process is to pass the mould plough between the rows, and just throw upon, or rather in amongst the plants, sufficient loose mould to keep them from exposure, and aid their growth. The next horse-hoeing may follow in a week or two, this to be followed in a few days by the ridge-harrow; this will generally make a fine loose mould, which the mould plough in the next operation should finally throw up and around the plants sufficiently high to make one regular ridge, from the top of which the plants should appear to grow free and unconfined, not being too closely pressed together, nor yet covered too high up their stems. *Hand weeding*, filling up by sets with dibble or spade, should take place immediately after the second horse-hoeing, and *hand-hoeing* should immediately precede the last moulking up. As our paper has reached the limit we allot to ourselves, we will just say that in the autumn we may offer a few remarks upon the stowing and preservation of the crop during winter, and the mode of preservation for sale or market. We offer with diffidence.

A few words upon the Potato Disease.—Amidst the various and conflicting ideas relative to the origin and nature of the potato disease put forth by the scientific world, as also the suggestions to be adopted to remedy such a singular and distressing visitation, we do not feel competent to offer any well-digested opinion. We are painfully conversant with the fact, and we only profess to take a common business-like practical view of the question as it stands: there it is—we must make the best of it. We are by no means partial to the adoption of nostrums of any kind; but as it is a certain fact that this is a progressive disease, from some cause yet to be discovered, our desire is that preventives may be attempted, and that our great assistants in modern agriculture—the agricultural chemists—will, as they have ever done, give us their best aid. We know what smut in wheat is—we know that smut-balls will infect the seed—we know that the same field that has been affected by smut or blacks in oats will produce smut in the wheat crop following it; we therefore dress our seed with various supposed specifics. We therefore venture to suggest a similar course with potato sets—something likely to retard or arrest the flow of impregnated matter from set to stem, or to destroy it in its progress either from stem to set, or vice versa. Lime, sulphur, charcoal, vitriolized solutions, salt, chalk, gypsum, and a hundred other things might be judiciously mingled with the sets, and possibly some might be found to destroy the pestiferous virus, supposing the seat of the disease may ultimately be discovered to be in the root. We merely suggest—we urge general effort—something must be attempted on a large and broad principle—discard not because you can't foresee the

result—try. When the disease has extensively prevailed in a crop, the best practice we have seen pursued is, early in the autumn, to pull up all the tops or stalks, and hill up as closely as possible with the hand hoe, so as to keep the roots from atmospheric or other influences.

ON THE GROWTH OF WHEAT.

TO THE EDITOR OF THE NORTHAMPTON MERCURY.

SIR,—I beg permission to reply to your correspondent's letter on my plan of growing wheat. He is very good natured and very shrewd; and when he reads the following plain statement of facts, he will, I am persuaded, see, without taking offence, that he has passed judgment on the scheme before he had fully mastered its merits.

The plan is simply this:—To have at one and the same time a fallow and a crop of wheat on the same acre of land; so that, while each triple row has the benefit of a broad interval of three feet, the interval itself is becoming ready for the next year's sowing.

Does this practice pay? For all turns upon that; and upon that point you and your years shall judge for yourselves from this reader's balance-sheet of outlay and profit on a four-acre piece of wheat at Milthorpe, in the parish of Lois Weedon, in this county. I name the place and the field (a field which is by the road-side and always open to inspection) because every detail of my farming is here well-known, and any approach to exaggeration, either as to the amount of produce or as to cheapness of labor, would be fatal to the credit of my plan.

net profits on this plan of growing it the present year have been to the proprietor £9 per acre; to the tenant, of course, according to his rent.

Now, if this can be accomplished, as it has been by myself, what earthly reason is there why, upon wheat land, the same thing could not be done by others? I cannot see why, with such implements as I use for expeditious sowing and tillage, the same profitable system could not be carried out to the greatest extent. My profession, my pursuits, and my inclination, are all opposed to any enlargement of my operations in farming; but, had it been otherwise, and supposing I had taken in hand 100 acres of fresh land instead of four, my profits the present year, at present prices, would have been £900.

But, perhaps, it may be thought there is something peculiarly generous in the quality and condition of my soil. Here, also, you shall judge for yourself. The field I speak of is a gravelly loam, with a subsoil of the same, varied here and there with sharp gravel and sandy clay. When I took it from my tenant in October, 1850, it had been in wheat the same year, and was, in fact, exhausted, no manure having been laid on it for four years, since the swedes, which were eaten off the land. I did nothing but clean and level it, and plough it one inch deeper than it ever had been ploughed before, and so got in my seed. When the wheat came up in November, I trenched the intervals two shallow spits deep, bringing up to the top six inches of the subsoil, making altogether, with the ploughing, thirteen inches, and in this most important point (as well as others) differing in practice from Jethro Tull.

I lay a stress upon shallow digging at the outset, the principle being to increase the staple by degrees. For, were I to begin with two full spits deep, I should do a very foolish thing, foolish in two ways. I should bring up more of the crude subsoil than could be decomposed and tempered by the summer fallow for the coming crop; and, at the same time, I should be paying, perhaps, double price for this uncalled-for and injurious expenditure of labor. Acting upon this principle, I pay for two shallow spits, 34s. the half portion of the acre, inclusive of cleaning. I have paid that sum this year, the spadesman earning 12s. a week.

Is not this worth thinking about? Here we have wheat after wheat on exhausted land, without manure, and with little more than a peck of seed to the acre, and yet the yield is upwards of five quarters to the half acre. How is this?

There is no mystery or magic in it. For, when I said I had no manure for my wheat, I spoke incorrectly; for I have manure in abundance, organic and inorganic manure, for wheat crops on the same field *ad infinitum*; manure of the very same description, containing, that is, the very same elements of fertility with that which the farmer carries from his yard, or buys

	£	s.	d.
Ploughing (12s.) the half portion of the acre.....	6	0	0
Harrowing, levelling and cleaning the foul stubble.....	0	10	0
Pressing the channels	0	1	0
Dropping the seed by hand.....	0	5	0
One pack and a-half of seed (in round numbers)	0	2	0
Rolling	0	0	6
Hoeing the rows, scarifying the intervals, bird-keeping, and all the operations down to harvesting and marketing	2	0	0
Rates, taxes, and interest.....	0	10	0
Total amount of outlay.....	3	15	0
Five quarters and one bushel of wheat (at 35s.).....	8	15	0
Two tons of straw (at 40s.).....	4	0	0
	12	15	0
Deduct outlay.....	3	0	0
Total amount of profit to proprietor...	9	15	0
You thus see that, with wheat at 35s., the			

in the market. For, in the subsoil of all loams, and of almost every description of clay, there is so much inorganic food for the plant as to be practically inexhaustible. And, if you ask where is the organic food, the ammonia, and carbon? I point to the atmosphere, and remind you of the proved fact, that both are found there, and with every shower of rain, every descent of the dew, and every fall of snow, are brought down on the porous soil and there retained, either for future use, or to be taken up at once by the growing plant. All that is wanted is, to give to each well-separated plant fair play, by letting in upon it the sun and the air, to afford its roots width and depth to revel in, and to keep the surface of the soil open and free from weeds. Do this, and Dame Nature will do the rest.

"This only is the witchcraft I have used.
Send for the lady, let her witness it."

But, if I use no yard manure for my wheat, what becomes of the straw? I do not sell it. No good farmer, I conceive, would do so, though he could get for it £2 a ton, because he knows that its intrinsic value is much beyond that. Purchased it I have for many years, and never could get it under 40s. But, when it is turned into manure, I carry it to my land, fresh and unexhausted of its riches, and bury it deep in the well-tilled and retentive clay. With what result?

My winter beans, and all my principal root crops, are planted in single rows five feet apart; and a few weeks ago, I weighed my swedes taken from a measured rood of ground, and the amount was six tons 15 cwt., being upwards of 27 tons to the acre. Before the swedes were down I cut from the spot on which they grew a heavy crop of early rye. From the intervals between the swedes I drew 60 bushels of potatoes. And in the lines from which they were taken there is now in vigorous growth a crop of winter beans.

In another part of the field there was an acre of winter beans, which yielded this year between seven and eight quarters; and in the intervals turnip, also a heavy crop.

With results like these I do not hesitate to fix the price of 40s. on good wheat-straw, as fodder and litter, and thus convert into rich, forcing manure.

I request your correspondent's attention to the foregoing plain statement of facts, and am, Sir,
Your obedient servant,

THE AUTHOR OF "A WORD IN SEASON."
Dec. 31, 1851.

AGRICULTURAL EDUCATION.—THE VALUE OF CHEMISTRY.

To avoid a recapitulation, we advise our readers to refer with care to our last article; they will then be better able to follow us through the present paper.

The question put by observant, thoughtful people, to each other and to the scientific, concerning this ash, suggested to the analytical chemist two inquiries, first, "What is the general composition of the ash?" and, second, "What special differences exist among the ashes of different plants, and of different parts of the same plant?" We will endeavour to answer these in order.

First, then, *the nature of the ash*. It will be remembered that in our former paper we said that the inorganic part of well-constituted soils consists of 10 or 11 different substances, namely, potash, soda, lime, magnesia, silica, iron, manganese, sulphur, phosphorus, and chlorine. This fact alone is comparatively uninteresting, because of itself it is not significant. When, however, we learn that upon analysis the ash of all our cultivated plants yields these same substances in greater or less proportion, the solution instantly flashes across our minds, and our reason brings us at once to the conclusion, that as these substances are necessary to the plant, and can only be obtained from the soil, the soil must contain them in the proportion necessary to the vitality or health of the plant.

Second, With regard to the *special differences in the quality of the ash*, we remark that though these elements are all present in our cultivated plants, the ash of different plants, and of different parts of the same plant, exhibit them in very different proportions.

It has been proved that the quantities of ash left by the leaves and stem, the straw and the grain of different plants, vary considerably; and it is also proved the ash left by these various parts varies not more in quantity than it does in nature. From an analysis given by Professor Fownes, of the Hopetoun oat, we shall see this to be the case.

"One hundred pounds of the Hopetoun oat contained of sulphuric acid and of alkaline matter respectively the following very different proportions:—

	Potash and Soda	Sulphuric Acid
Grain.....	31.15.....	2.54
Straw.....	18.24.....	23.00
Leaf.....	15.68.....	15.23
Chaff.....	4.36.....	6.51

And not only are the proportions of the several substances unlike, but in certain parts of the plant some of them are almost entirely absent. Thus, the grain and the straw of wheat have an ash which contains phosphoric acid and silica respectively:—

	Phosphoric Acid	Silica
Grain.....	50 per cent....	None.
Straw.....	1 to 3	30 to 60 per cent.

The presence of phosphoric acid in large proportion characterises the grain, while that of silica in large proportion characterises the straw."

The analysis of the ash of different plants gives precisely similar results. And we infer, from the results of chemical research and from the

intelligent observation of the growth and habits of plants, that one kind of crop under the same circumstances will take from the soil more of one kind of inorganic matter, another crop more of another.

Let no one be sceptical of the value of chemistry to the farmer, if in its relation to practical agriculture such experiments as we have adduced involve conclusions like the following:—

First, "As different parts of the same plant require different proportions of these inorganic substances, they must, at different seasons of their growth, draw these substances from the soil, more of one thing at one time, more of another thing at another. They may flourish, therefore, on a given soil at one period of their growth, and not at another. That sod which clothes the tree with luxuriant verdure, may yet not be able to ripen its fruit; that which causes the straw to rush up to early maturity, may refuse to fill the ear.

Secondly, "As different plants also draw from the soil the same substances in unlike proportions, they will grow with unlike vigour in different soils. Hence that which bears a profitable crop of one kind is often unable to yield a good return of another; hence, also, the varied flowers and herbage which diversify the surface of all our fields."

"Well," some market-table gentleman may say, "you have done nothing but to throw into two conclusions all the facts that have led the farmer to the system of rotation of crops: our observation and experience have taught us as much as your chemistry." "Truly, the observation and experience of centuries," we reply, "have given you as a great barren fact what chemistry the moment it was applied to agriculture gave as a fact, and with this difference, that it gave it as an intelligent fact accompanied by its proper solution. The elucidation of one fact like this is invaluable, throwing, as it does, a broad glare of light upon others, as in the case of the principle involved in the above conclusions, which furnishes a key to so many practical points of husbandry long known, though never understood. It may be as well to stop, and view the principal of these points that have thus suddenly fallen under illumination.

Repeated observation and long experience, both upon the naturally poor, the impoverished, and the virgin soils, taught the lesson that there was a process of exhaustion at work when continued cropping was resorted to, and to some extent enabled the farmer to counteract its operation. Now with respect to exhaustion the principle in question affords a definite notion of that process; and, furthermore, divides it into two kinds. Not only may there be a general exhaustion, *i. e.*, as under a systematic rotation, where the soil may be impoverished in all its ten or eleven elements, but there may be likewise the special exhaustion springing from the abstraction of one or more of those substances, as in the case of the continuous growth of any

particular plant. These exhaustive processes are both fatal to the fertility of the soil. It will be remembered what we said above of the constituents that characterized the grain and the straw respectively. Supposing that corn is grown, therefore, and both straw and grain taken to market year by year, general exhaustion is produced, *i. e.*, the soil is robbed of those substances that go to form both ear and straw. Return the straw to the land in the shape of manure, but still dispose of the grain at market, and you only abstract to any extent one substance; it is that one which feeds the ear, however, and without which there will grow only straw. In England the high price of wheat has tempted our farmers thus to exhibit in a striking manner the evil of this system. No country, however fertile, with a flourishing commerce, which for centuries exports its produce in the shape of grain and cattle, can retain its fertility unless the same commerce makes restitution to the soil in some sort. We see the disastrous effects of this policy in the present exhausted state of the originally-fine soil in the world, that of Virginia, which can now no longer furnish its staple productions—wheat and tobacco. From such a discovery as this springs, of course, the theory of manuring, or, as it may be called, the theory of renovation, which shows the importance of returning to the soil the essential substances that have been taken from it. Hence the increasing attention paid by men of sense to artificial manures; hence the immense sums of money expended in the same (in 1827 40,000 tons of bones were imported into this country, valued from £100,000 to £200,000 sterling); and hence the repeated discussions taking place at club dinners and elsewhere, as to the comparative merits of the various families of the phosphates, sulphates, nitrates, minute, and carbonates, in all their natural or affianced relationships. The sheer nonsense that is talked on the majority of such occasions, together with the ignorance and carelessness so frequently displayed in application, or rather misapplication, of these substitutes, proves plainly how little this theory even yet is understood. The knowledge of the composition of the ash—a knowledge which science only can give—aided by a calculation of the exact quantity of the component parts of the soil that are exported from our land in the shape of beef, mutton, or grain, teaches us that in certain cases a small supply of lime or phosphorus or silica would do more to restore lost fertility than a large supply of farm-yard manure. We heard of a farmer, not two days ago, who, determined on a very heavy crop of turnips, manured his land twice—in October, and again in May—applying twenty-five loads per acre each time. The result was a surpassing crop of chickweed. Supposing that he had not done enough, the next spring for oats, he added a third dressing of twenty-five loads. The result was an immense bulk of straw, but not one oat. Of all bad farming this is the worst; and verily, when

we think of it, our crops of wheat, &c., of which we are most sanguine, frequently, from the very same reason, disappoint us.

For judiciously regulating the application of power and the expenditure of capital, we must depend upon an intimate acquaintance with the theory of the restitution of a disturbed equilibrium, involving a close investigation of the constituents of soils and plants.

The principle in question throws light on the rotation of crops. It is a system that may well claim the dignity of a natural law. A writer of considerable talent observes of forest trees, "In the wide forest many generations of broad-leaved trees live and die, and succeed each other; but the time comes at last when a general pestilence seems to assail them all—their tops droop and wither, their branches fall off, their trunks rot. They die out, and a narrow-leaved race succeeds them. This race again has its life of centuries perhaps, but death seizes it too, and the expanded leaf of the beech, the ash, and the oak, again cheers the eye." Just so do the grasses of our meadows succeed each other, and we are wise in imitating this beautiful arrangement.

It is from the fact that different plants carry off different substances (those cultivated for their grain taking phosphorus, and those grown for their straw and their bulbs extracting respectively silica and alkaline matter), and not from the notion that one crop takes more in quantity than another of all those things that our crops derive from the soil, upon which the intelligent practice of rotation is founded. But by no system of this kind, however skillfully worked, can we avoid the ultimate exhaustion of the soil. The direct restitution of its abstracted constituents is the only means by which we can economically re-establish the equilibrium that has been disturbed. We are aware, on the one hand, that it is easy to de-fertilize a soil by the repeated growth of any one plant; while, on the other, the facts already adduced assure us that we may distance this undesirable result by a judicious alternation of crops, and thus work up all the available materials of the soil to advantage, and by a very slow process. How frequently is it the case that some farms get a bad name, and are abandoned again and again, being regarded as bottomless pits to the investment of capital, until some cunning fellow astonishes the neighbourhood by the unexpected development of hitherto latent resources! It has been the fate of some men to dig and delve, their lives long, a few feet above a silver vein. The gift of the divining rod is not made to every one. The successful man of business owes his profits, perhaps mainly, to the inaptitude, ignorance, or carelessness, of his fellows. From what to many an unthinking person would appear a heap of worthless cinder rubbish, the scavenger speedily riddles an ample fortune, and trundles a carriage; and in the universal and toilsome search for

gold, our successors will extract wealth out of the very refuse rejected by ourselves as valueless.

Our principle may find an illustration in the manner in which some few of the elements of the soil have been directly supplied. In some parts of England the effect of lime is very marked in the improved tone it gives to the soil.* Yet many of our readers will have seen the truth of the old proverb exemplified—"Lime enriches the father and impoverishes the son"—i. e., they will have witnessed from the application of lime a temporary fertility, followed by a sterility the more obstinate (past a certain point), in proportion to the frequency of the dressing. This has been the experience also of those who have applied gypsum, nitrate of soda, bone dust, &c.† For a certain number of years their effect was good; beyond this they were thrown away, and were even found to be injurious. An abused stimulus in time ceases to act. This is the case in the human subject with opium; and it may be remembered that water will hold a definite quantity of salt in solution, and no more. In the smelting of iron also, lime in certain quantity is invaluable to produce a running of metal: beyond that it is valueless. No farming can succeed that acts upon the principle of restoring periodically one or two substances, while nine or ten others are being ruthlessly reduced year by year; and success will become but the more speedy and entire as we bend our practical investigations to this subject. Under the combined influence of atmosphere, rain, mineral springs, and vegetable decay, an exhausted soil may be repaired in the course of years; but then a man who pays 30s. or 40s. an acre rent, cannot afford to give his land such respite; and there are comparatively few men that keep up the old practice of dead fallowing.

In the commencement of our preceding paper we noticed the mutual dependence subsisting between the soil, the plant, and the animal, and the close resemblance actually to be traced between them. It will suit our purpose to bear out this analogy yet further.

The inorganic part of the soil, or the ash, yields eleven certain substances; the ash of the plant likewise yields the same; and upon analyzing the ash that remains from the burning of both flesh and bone, the same are again discovered. As in the plant, to confirm the analogy, the proportion of this ash varies in different parts of the animal—"The fresh bone leaves one-half of its weight when burned, the fresh muscle not more

* Its principal use we conceive to lie in the power it possesses to dissolve those components of the soil that are not soluble in water, and thus to present them to the roots of plants in an appreciable form.

† The expenditure in such manures as the latter two is not sufficiently great to show the effect we describe; and even in the case of lime, when we know that the addition of 400 bushels per acre to a soil 12 inches deep will only add 1 per cent., the farmer may find benefit for a very long time.

than one hundredth part;" yet the proportion present in the muscle is as essential to its healthy existence as the larger quantity to the bone. Mr. Fownes remarks—"There is a striking difference among the three in respect to their inorganic part. Thus it may be given as a general characteristic of each, that the soil contains silica and alumina—the plant contains silica, and no alumina—the animal contains neither silica nor alumina.

The alumina gives consistence and tenacity to the soil; the silica gives strength and firmness to the stem of the plant. For such purposes the animal does not require their aid, and is therefore destitute of them. The question, why must the soil contain these certain substances? meets, then, with the following reply, which goes yet further to establish the analogy we are considering, by showing that the animal organism is only a *higher kind of vegetable*, as Liebig expresses it, the development of which begins with those substances, with the production of which vegetable life usually terminates. The soil *must* contain them because they are essential to the vitality of the plant; and the plant *must* contain them because they are essential to the animal life which it is its function to support. There are then certain given substances, necessary to the structure and support of bone and muscle, to be found in the soil. How can the animal obtain them? It cannot eat earth; if it did, its digestive apparatus is not fitted to desintegrate nor assimilate the specific ingredients. There must then be a medium. That medium is given in the plant, whose roots penetrate into the earth, and diligently collect and present to the animal certain principles identical with the chief constituents of blood! The life of the plant is therefore subsidiary to the life of the animal.

And it is also imperative that the substances of which bone and muscle are composed are yielded to the young animal in the milk of its mother. The processes of combustion and transformation demand in the case of the adult animal very large supplies. In the young animal, however, these processes are far more energetic. Notwithstanding that the metamorphosis of organized parts goes on more slowly than in the adult, there is a more active respiration and a rapid growth that claim an incessant and increased supply, and a supply also that shall be concentrated: this claim is recognised in the nature of the mother's milk. Nor is this demand by any means relinquished, although materially reduced, after the structure is matured; for in the lowest as well as in the highest class of the animal kingdom there is a constant change, a decay and renewal, or, as we have before termed it, a metamorphosis of organized tissues going on. So much so is this the case with man that he is supposed at the end of every seven years to bear no very unfair resemblance to poor Pat's stockings, which were so darned and redarned "that sure not a thread of the original remain-

ed." It is impossible to conceive what some rogues might not make of this in a court of law, where the identity of their persons were concealed! Surely it is the fear that such facts as this shall get abroad, and enter into silly people's heads, to the subversion of all order and constitutional security, that leads certain personsages to talk about the danger of educating the "dangerous classes?" Silly people.

It is then evident that the animal is bound by an indissoluble bond to the earth—a bond which, if broken, death will ensue. A hazardous experiment is tried whenever an attempt is made to loosen this bond; and this is virtually done when the animal is ill supplied, through the soil or plant, with those principles on which it depends. What is the meaning of distinguishing certain grass lands as breeding, suckling, and feeding lands, if it is not that experience teaches that the peculiarity of one is to rear fine lambs, &c.—of the other to produce fat beasts, &c.? This right and judicious discrimination is a main secret of successful grazing; but it is only gained after a series of losses when gained only by natural observation, totally unaided by scientific investigation. How so? Why, owing to the constant consumption of those substances that characterize these different pastures, the fact of this year may be untrue ten years hence; and ten to one that extensive loss has supervened between the change and the discovery of it. All farmers are aware of this, and hundreds, for want of the aid that chemistry could render them (and in numerous instances common sense only), are floundering about in uncertainty with a radically diseased flock, and a stunted herd, cursing free trade instead of their own ignorance.

We veritably believe that much of what is called "local disease" may be traced to the exhaustion that has taken place in one or more of the substances so often mentioned. Some farms are known to have had names because of the peculiar maladies that attack, at certain stages of their growth, the stock reared or fed upon them. And at different stages of growth we know that different elements are assimilated.

Suppose, now, that a tenant has exhausted the land of its phosphate by the growth of wheat year after year, but with little intermission, and, determined upon affording it relief, he lays it down with grass. As phosphorus cannot be restored by the atmosphere, we know that unless it is restored by some other means, no plants, none at least that require it, will grow where it is not. A cow turned upon the pasture such a course would insure, might possibly keep herself alive, but should she have to support a calf she would do so, so long as she was able, from her own system (Is this not a beautiful provision?), and then death to both would ensue. "The animal," says Fownes, "cannot long be independent of the quality of the dead earth on which it treads." The cheapest and most expeditious mode of restoring the used-up phosphates to the land is to dress with bone-dust. Phosphates enter largely

into, and indeed are the chief constituents of bone; therefore, curious as the fact may seem, it is still true, that by supplying bone-dust to the soil you give bone to the animal.

Nothing has yet been said concerning the organic parts of soils, plants, and animals. For the most part, these subserv the purposes of respiration, and are obtained from the atmosphere. They have little to do with the formation of blood, and, being of minor importance, we will leave the consideration of them for another occasion, and return to the solution of the agricultural problem, viz., *How can those substances be replaced which have been taken from the soil, and which cannot be furnished by the atmosphere?* In farm-yard manure? No; because a very small proportion of the elements necessary to the vitality of the animal will be thus returned: they are assimilated by the animal, and exported from the farm at some time. To arrive at any valuable reply to the question there are many things to be ascertained. We will mention three:

First, we must ascertain definitely what substances are abstracted from the soil by different plants. Thanks to chemistry, we have pretty correct information on this subject; and our information teaches us to divide vegetables into three or more classes: 1st, *polash plants*, which includes the best mangold-wurtzel, turnips, and maize; 2nd, *lime plants*, comprehending clover, beans, peas, &c.; 3rd, *succous plants*, including wheat, oats, rye and barley—i. e. silica goes principally to form the straw of these.

Secondly, we must know in what quantity or proportion these substances are abstracted from the soil by different plants. The results of many experiments are before us. The celebrated chemist Liebig gives us, in the matter of phosphates removed from a surface of land equal to four acres, the following data: Peas 117lbs., wheat 112-43lbs., rye 77-05lbs., turnips 37-84 lbs.

Thirdly, we must arrive at some approximate proportion of the ingredients returned to the soil in the animal manure. Chemistry a third time lends us its effective aid, and the researches of Dr. Liebig prove how full he has overcome this difficulty. So much so is this the case, in each of the three requisites to a successful practice of agriculture just mentioned, that he (Dr. Liebig) anticipates the time when the farmer may be able to keep an exact record of the produce of his fields; the waste that has taken place in certain substances, and in the measure in which they may be supplied, will then be a matter only of easy calculation.

None of these questions—the practical comprehension of which is so essential to success in the economic cultivation of the soil—can be answered by art.

In all experiments made by men who are not guided by scientific principles the chance of success is very small; and just because they are usually failures, they are seldom tried. The

ground indicated by science, and which exposes us to no danger of falling, is the only safe footing; and in bringing this interesting inquiry to a close, we would advise all who have their own interest at heart to effect some stand upon it. Liebig concludes one of his chapters with these words, "It is confidently looked for that, by the united efforts of the chemists of all countries, we shall arrive at a *rational system of gardening, horticulture, and agriculture, applicable to every country, and to all kinds of soil; and which will be based upon the immutable foundation of observed facts and philosophical induction.*" So be it. S. R. F.

A FEW REMARKS ON FOREST TREES.

SIR,—Trees, though perhaps not the most useful, are, certainly, the grandest objects which adorn the face of Nature. Surely nothing can be more agreeable to eye of man than the pleasure experienced in viewing luxuriant masses of foliage, such as are presented by the "monarch of the forest," the oak, the sycamore, the elm, and, very frequently, by the chestnut. Again, we must feel considerable delight in viewing some of the lonely-looking description of trees—such as the polar, the willow, the yew, the cypress, &c. The mind, when dwelling on them, is led into such a pleasing contemplation, that we often prefer walking on the bank of a river overshadowed by those sad and melancholy emblems of destiny, yet highly-ornamental objects.

To the man of science and the lover of nature, no time is more agreeably spent than that which is devoted to the study of the magnificent which induces the growth of the seed or acorn to a mighty tree, which guides the sap through the capillary channels, and produces, with unerring certainty, the development and expansion of the leaves. What extraordinary wonder they are! What beautiful and delicate tracery they exhibit! How perfectly adapted they are to inhale the gases requisite for the nourishment of vegetation; and, by doing so, how decidedly they preserve the balance of creation! All is the work of incomprehensible and consummate wisdom; and how beautiful is the outline!

"Stern lawgiver, yet thou dost wear
The Godhead's most benignant grace,
Nor know we anything so fair
As is the smile upon thy face;

Flowers laugh before thee on their beds,
And fragrance on thy footing treads;
Thou dost preserve the stars from wrong.

And the most ancient heavens, thro' thee, are fresh
and strong."

WORDSWORTH.

The limits or difference between trees and shrubs have never been accurately decided on, as trees, even of the same description, vary so much in different countries, and even in various parts of the same climate—as an example, we may recognise the arbutus which is common

climates, attains to the size of a large tree, whilst, in Killarney, it is never more than a considerable shrub. However, as a general rule, we may remark, that most shrubs have but one single skin or covering on the stems; whilst trees are covered with two barks. Some have asserted that shrubs invariably have the outer and inner skins, called by botanists cortex and liber. I am not skilled enough to decide on this; yet, even if they differ from trees in this particular, the disagreement is so slight or inconsiderable, that it scarcely merits the attention of any, except those skilled in vegetable anatomy.

It is by no means improbable that trees were originally all of the same kind, but have become different, according to the different soil and climate they have been distributed in. American trees and shrubs, when brought and planted in this country, will become, in time, like our own of the same species; and British specimens, planted in America, will, in time, assume the appearance presented by their species.

To determine the age of trees has always been a particular desideratum with botanists. The rings or concentric circles visible in sections of the trunk are supposed to be produced by the alternations of the seasons; yet this method is very uncertain, and cannot be at all relied on, except in examples of timber grown in temperate climates. Dr. Lindley gives, in his "Introduction to Botany," results founded on the measurement and calculation of the zones of some trees, which are quite at variance with the known age of the trees. Most of the trees growing in Great Britain are of the class called Exogens, or such as have a regular growth or increase of the stem; the age of those may be determined with sufficient accuracy, excepting where old age has destroyed the heart; then, though the tree may still flourish for years, the periodical increase will not take place. Those rings are most observable in transverse sections of ash and larch; and they afford an index of the warmth or coldness of the season, as they increase in proportion as the year is favorable. The difference of thickness of the same zone is also remarkable: this is caused by the prevalence of cold winds on the side of the tree opposite to that on which the circle is thickest; thus, wind blowing constantly from the north, during the summer, will interrupt the function of the leaves on that side, and cause an accumulation of wood to take place on the south side.

The rapidity of the growth of trees usually depends on three important circumstances—viz., climate, soil, and situation; yet, taking all things into consideration, there are trees which will grow with more than twice the rapidity of others; and the following table, showing the proportionate increase, has been calculated:—

	Circumference.		
	1st year.	2nd year.	3rd year.
	ft. in.	ft. in.	ft. in.
Oak . . .	0 10½	0 11½	1 0½

	Circumference.		
	1st year.	2nd year.	3rd year.
	ft. in.	ft. in.	ft. in.
Larch . . .	1 0½	1 3	1 4
Elm . . .	0 27½	2 9	2 11
Lombardy poplar	1 8	1 0	1 3½
Lime . . .	1 8½	1 10½	2 0

The age to which some trees will live is remarkable. There are cedars on Lebanon which, because of their immense bulk—measuring 36 feet in circumference—are supposed to have existed in the time of Solomon. Adamson has asserted that some of Barbab trees (*Adamsonia digitata*) of Africa, are fully 5,000 years old.—Yours, &c., E. F., Templebredin, January 6, 1851.

KIDNEY BEANS.

KIDNEY BEANS grow best in a light dry soil, in which respect they differ from the common field and garden beans, and may thus be cultivated successfully for their green pods, where other legumes could not. There are numerous varieties of the kidney bean at present in cultivation. We select the following from Lawson's *Manual*:—

DWARFS (*Phaseolus vulgaris*.)

1. *Common White Kidney Bean*.—Cultivated in the field in France, for its ripe seeds, but not adapted for using green, in consequence of the toughness of the inner skin of the pod. Pods long and cylindrical; seeds white, round, and small, weighing 5·6 grains each, on an average. Proportions per cent. of the seed kernel, 93·33; husk, 6·67.

2. *Dwarf Canterbury*.—A much esteemed sort for using in a green state, the pods being remarkably tender; and good also for pickling. Pods straight and narrow; seeds white, straight and slightly flattened, weighing 6·7 grains each. Proportions per cent. of the seed kernel, 92·8; husk, 7·2. Very early sort.

3. *Round Light-dun Kidney Bean*.—Grows very low and close. Pods short, with a tough skin, on which account it is disliked, and therefore seldom cultivated in this country. The seeds are small (7·6 grains each), and of a light dun color.

4. *Common white Runner*.—This is considered by Lawson as occupying an intermediate position between the true dwarf kidney bean (*P. vulgaris*) and the runner (*P. multiflorus*.) The seeds of the common white runner are large, flat, and kidney-shaped. The plant grows about three feet high.

5. *Scarlet Runner Kidney Bean*.—This is included in the species *P. multiflorus*. The scarlet runner is the best known of all the kidney beans, and probably the best bearer. It is cultivated for the beauty of its flowers, as well as for the economical uses to which its pods and seeds can be applied. The seeds are remarkably plump, kidney-shaped, and the color is of a deep purple, almost approaching to black on the sides, sparingly interspersed with cream-

colored patches, which predominate on the edges. An averaged sized seed weighs 18 grains.—*Cyclopediu of Agriculture.*

OBSERVATIONS ON SEEDS.

NO. I.

In February and March, 1848, I inserted two papers in the *Farmers' Herald* on the "Management of Seed," in which I gave details on the growth of seeds, of fallow, and green crops, *i. e.* such as turnip, carrot, clover, ryegrass, &c., with opinions that such cultivation was particularly suitable to small occupiers.

This opinion is strengthened by the exorbitant prices charged by most seedsmen for really good seed, and the immense quantity of rubbish thrown upon the market at a low price to catch the unwary.

But I think that it would be quite as interesting and useful to treat the subject in a more general manner, and endeavour to show how the produce of our seeds could be improved in quantity and quality. To this end I shall devote a few papers, of which this may be considered the introductory one.

In the first place, it may strike some as a novelty, although perfectly true, that the improvement of live stock and crops may be brought about by precisely similar means, although that of the vegetable kingdom may, from their lower scale of organization, and greater means of reproduction, be carried out in much less time, at much less expense, and to a far greater development than in the animal kingdom. I make these remarks because the improvement of stock, and the means by which it is attained, are well understood by almost every farmer, although few are in a position to carry out their views. But that of seeds, although precisely identical, is little thought of, and left almost entirely to accident.

1. And first by selection: taking live stock as an example.—A farmer selects animals possessing particular points; breeds from these, and keeps the produce constantly and plentifully supplied with the most nutritious food. His stock becomes noted for early maturity, form, &c.; he sells them at a high price: a few of the buyers employ similar means with their purchases, and have almost equal quality—the majority by injudicious crossing and neglect, stinting of food, &c., deteriorate their stock and its produce; but the original selector still obtains high prices, for the superiority of his stock is obvious.

The seed improver has no such advantage. He selects plants—say turnips for a few years, and saves the seed; sells it at a remunerating price for a year or two; the purchasers produce seed from this without selecting, transplanting, or taking care to prevent crossing, however they sell it as the real article at a low price, sufficient to prevent the original selector getting a remunerating price for his own. He leaves off

growing it; the cheap seed gains the variety an ill name. People say—"O, that sort has degenerated," and run to buy a new selected sort of some one else; and this because the quality of the produce cannot be judged of from the seeds.

2. The second improvement is by Hybridization, called crossing in animals.

The advantage this has been to our breeds of animals is well known; probably all our improved breeds derive much of their superiority from it. Animals have one advantage over vegetables,—that this crossing can take place on a large scale yearly, by procuring a few male animals, and that a kind of perpetual crossing can be kept up, where the numerous females can be of a kind hardier, coarser, and coming to less early maturity; while the few males required can be tended with greater care, and the produce be kept entirely for fattening purposes.

However, the axiom *Omne ex ovo*, is true both of animals and vegetables, and the method of reproduction identical. Most plants are hermaphrodites, that is, have stamens and pistil, *i. e.* male and female organs in the same flower,—the pollen or dust from the first falls upon the last and fertilizes it. Some plants, as Indian corn, have the stamens and pistils in different parts of the same plant; in others, as the hemp, in different plants. In both these latter cases, it is easy to hybridize, by pulling up or off the male plants a portion, and placing plants of another variety of the same species near and intermixed with them. But in plants where the stamens and pistil are in the same flower, (as they are in all farm plants, except those mentioned) and the flower itself is minute, it becomes a difficult process. Each bud must be carefully opened before the pollen is developed, and the stamens removed in minute flowers with the point of a needle; in larger ones, with a fine pair of scissors: and when the flowers open of themselves, pollen of the required variety procured to fertilize the pistils.

3. Importation, or change of climate, is a third means of obtaining improved animals and plants. Both these derive peculiar impressions and systems of growth, from a long continuance in a peculiar climate and soil—these their produce retain for a few years in other situations. The Arabian horse is enabled, by a hot climate, —exercises required and scanty food through many generations—to bear fatigue, and become swift and hardy, and has improved under our sky into our matchless breed of race horses—less continuous exertion being here required, and more generous food being given.

And so with plants. The flax grown continuously during short hot Russian summers, when the seed from it is removed to the moister and cooler ones of Great Britain, produces the finest fibre in the world. Here the contrast, being too great, completely changes the produce;—the same seed that would have produced

coarse branching flax if sown in Russia, produces the finest fibre when sown in Ireland. This is a defect in the plant, but a defect which suits our purpose. But, as in other cases, when this plant acclimatizes itself, *i. e.* produces a plant in greater natural perfection, it is less suitable to our purpose, and we say it degenerates. This it does very quickly; so that Riga seed, or seed grown from Riga seed, is only sown to produce fine flax.

Most of our cultivated plants are in some degree the result of an infringement of nature, originally produced in climates where what we should consider an excess of summer heat, winter cold, or great dryness or moisture exists. This excess in the portion we wish to exceed in, whether leaf, seed, or root, we perpetuate as much as we can: if a plant is removed to another spot not very different in climate and soil, this peculiarity will be permanent; if it differs materially, it will only last a few years; and, if altogether opposite in climate, quite the reverse quality may be set up. Thus the fine Spanish wheat would, it is likely, be mildewed and shrivelled in the cold damp climate of Scotland.

To show that foreign countries have supplied us with important varieties of plants, I need only mention the Belgian carrot, the Swedish turnip, the Swedish alsike or hybrid clover, the Italian ryegrass, and the French giant or double-cut sainfoin; but I think that if their peculiarities are to be permanent, we must continue to import the seed from the places where indigenous, — except the Belgian carrot, the climate there resembling ours.

Our change of climate may be beneficial for a time, but the varieties gradually tend to assimilate themselves to our more native kinds. Thus the Swede turnip in the richer soil and milder climate of England, has grown much larger, but is far less hardy. No seed is more apt to be hybridized in its growth, and more liable to be adulterated afterwards than Swede turnips; and carrots ought to be grown from selected and transplanted roots, so that every root is seen to be true, and grown by those who cultivate a large breadth, and can thus select only the best roots.

Italian ryegrass seed is distinguished from common by the presence of an awn or beard, any considerable absence of which may be detected by sprinkling a few of the seeds on a black surface as sleeve of a coat. Yet, as in other grasses, the absence of the awn is often caused by soil and climate and proves nothing against the trueness of the sample. Italian will probably "degenerate," or rather assimilate, in time, to the common English. It was introduced by Lawson, of Edinburgh, about twenty years back, into Britain.

The French double-cut or giant sainfoin is a still more recent introduction, although mentioned by Lawson in his *Manual*, in 1836; it grows quicker and higher than the common kind, and

affords two crops of hay, or one of hay and one of seed annually. The seed crop had better be the second cut, as in the first the quantity of seed is often but trifling. The seed is regularly imported from France, and may be obtained rough or milled at a mere trifle above the price of English. From its peculiar advantages, it is at present exciting considerable interest among sainfoin growers.

Swedish clover is apparently a hybrid between the perennial white and the broad red clover; its produce is not so large as the last kind, but exceeds the first: and is particularly useful when lands are sick of red clover. I say apparently a hybrid, because it is the common clover of the Swedish meadows, and was not produced by artificial means. In this country it seems inclined gradually to assimilate to the perennial white, or native clover of England.

All these seeds are easily obtained; but should a difficulty arise in procuring pure and genuine, I should be happy in affording further information through the editor of this paper.—*W.*, 25th March.

REPORT ON POULTRY EXHIBITION.

THE POULTRY

Were more numerous than on former occasions, and consisted of some first-rate specimens in each class. The show-yard was thronged with brilliancy and fashion, and the whole appearance superior to anything of the kind we have before witnessed. Our gracious Sovereign has set an example to the ladies, whose taste seems more centred than formerly in the profit and economy of domestic arrangements. We were glad to perceive that our excellent Viceroy particularly remarked our poultry collection; and as he has promised his fostering care to all our agricultural pursuits, we have every reason to hope it will cause a better understanding between the Dublin Society and the exhibitors.

The Cochin China were absolutely superb and deservedly attractive; unmixed specimens are new to us. It is our opinion that finer birds, or of higher breeding, could not be produced than those exhibited. Mrs. Cartan was the successful competitor, and took the premium for dark-colored birds; at the Birmingham show, at which there were 158 lots of Cochin China, and thirteen premiums given to that class, they were all awarded to the red yellows, since which nothing else would be looked at in England; some fine young birds of this color were exhibited by Mr. Nolan, and, we understand, sold at a very high figure. There were some few good Dorkings; Lieutenant-Colonel Hill took the premium; but though of high breeding, we have seen them of much larger size. They do not seem to be sufficiently appreciated here; there is no better table-fowl, nor do any chickens come so soon to perfection. To ascertain the value of the Dorkings, or other large fowl, they

should be handled, otherwise the premium may be awarded to feathers instead of flesh.

We understand that the Dorking cock, exhibited by Mr. Nolan, at the last agricultural show, and awarded a premium, as the best of all poultry, was again exhibited; if the judgment were left to us, we would say Lieutenant-Colonel Shaw's birds were the best in that class.

The beautiful black Polish, with white top-knots, were few, and not of first class; there were but two pens of them; Mrs. Victory was the successful competitor. The spangled Polish were not noticed by the judges. We would not like to be at variance with the judgment, but are of opinion there were several lots of Spanish superior to those awarded the premium. When gentlemen undertake to judge, they should consider the age as well as the breeding of the birds, and make the award to the young and vigorous, instead of the old and debilitated, a circumstance which has not been observed in the present instance; lots 72, 78, 95, 106, and 110, were each, in our opinion, superior to the prize birds. A variety, new to us, white Spanish, was recommended. We do not think the Hamburg have, by any means, kept their position; in former years we have had some fine specimens: they have, unquestionably, degenerated. The Malays were numerous and very good. We regret that not being more frequently crossed on the common poultry; the introduction of fresh blood, and increase of size, being an important improvement in the cottagers' fowl.

Among the late introductions we observed the Columbian. Those are what a facetious person observed, that "one of their eggs was enough for two ordinary gentlemen for breakfast." They are certainly enormous. The Sebrights were particularly attractive, and for the first time recommended by the judges; they are beautiful little creatures. The American turkeys were superb. Mr. Nolan's cock was of gigantic size, and said to be twice the weight of the bird awarded the premium, but disqualified by one of his hens meeting with an accident. His Norfolk carried off the prize. The large Chinese geese were awarded the premium. The judges should be in possession of the fact, that those geese are but half reclaimed, and their flesh black, dry, and carrion. The Toulouse, on the contrary, are domestic, unobtrusive in a stack-yard, fleshy, fair, and tender; they are those so much in request by the French gourmand. The Aylesbury ducks were numerous, and but few first-rate specimens; the Rouens were middling.

Although our poultry show has taken the precedence of most others, yet we find that recently commenced shows in England have entirely distanced us; and although we stand in a position peculiarly calculated for the propagation of poultry, our list consists of only 227 lots, while the Birmingham show, established but three years since, counts 1,055 lots. Can this great difference be attributed to the public or the

Society? We have heard murmurs, as to the exposure of first-rate fowl to the inclemency of the weather, and know there has been material losses by it. There is no English show that is not under the shelter of a building, and conducted by experienced, practical persons; and we would strongly suggest a like course to be adopted by our Irish societies, which, no doubt, would give general satisfaction, and remove the present causes of complaint, both as to the nomenclature and introduction of new and valuable varieties into their list. It is a branch of the industrial resources of this country that deserves particular attention: our export of eggs, notwithstanding the potato blight, has been enormous; and being reduced to an agricultural country, this branch of it requires all our fostering.—*Irish Farmer's Gazette.*

EXPEDITIOUS CULTURE OF CUCUMBERS.—A gentleman's gardener, near Burford, being very short of manure, got permission to have some rough grass cut in the park, and made with it a cucumber bed for two lights, on the 28th of February, with a small quantity of manure on the top of the grass put in the soil; the same day, planted two "Manchester Hero" cucumber plants out of 60-size pots; cut a cucumber on the 27th of March, 11½ inches; on the 29th, one 16 inches; on the 30th, one 15 inches with another 13 inches left to cut.—*Oxford Journal.*

BE KIND.

BY SPENCER T. HALL.

Be kind to the old man, while strong in thy youth—
Be kind, not in seeming alone, but in truth;
He once was as young and as hopeful as thou,
With a bosom as light, as unwrinkled a brow!

Be kind to the poor man, and give of thy bread,
With shelter and pillow to comfort his head;
His lot and thine own may be one ere he dieth,
Or neighbour to thine the low grave where he lieth!

Be kind to the crooked, the lame, and the blind;
What's lack'd in the body they feel in the mind;
And while virtue through trial and pain cometh forth,
In the mind, not the body, is man's truest worth.

Be kind to the fallen, who lives but to mourn;
Be kind to the outcast, who seeks to return;
Be kind to the harden'd, who never hath pray'd;
Be kind to the timid, who still is afraid!

The injured, who down by oppression is borne;
The slighted, who withers; the victim of scorn;
The flattered, who tropples aloft but to fall;
The wronger and wrong'd—O! be kind to them all!

For vast is the world of the generous mind,
But narrow the sphere to the selfish assign'd;
And clear is the path of the gentle and true—
Of the haughty and vain, how delusive the view!

Then unto the old show respect while thou mayest—
The poor, while to Him who gives all things thou
prayest—

The weak or the lost, 'neath the load of his sorrow,
And thy own cup of joy shall o'erflow ere the morrow!

Agricultural Journal,

AND
TRANSACTIONS

OF THE
LOWER CANADA AGRICULTURAL SOCIETY.

MONTREAL, JUNE, 1852.

We beg to remind the Directors of the Lower Canada Agricultural Society that the Monthly Meeting takes place at their Rooms in this City, on Wednesday the 9th day of June instant, and that a full attendance would be desirable.

The Annual General Meeting of the Lower Canada Agricultural Society took place 19th May, 1852. Gentlemen present:—

Right Rev. Dr. Fulford, Lord Bishop of Montreal, Hon. Mr. DeBeaujeu, Hon. Mr. DeBleury, Alfred Pinsonneault, P. L. Le Tourneau, P. E. Leclere, Mr. Fulford, L. H. Moreau, Rev. Mr. Morin, David Laurent, Dr. Valois, M. P. P., M. Bibaud, Major Campbell, John Yule, Captain Walker, L. A. H. Latour, J. DeWitt, J. G. Gilbault, A. Kierskowski, John Fraser, J. Hurteau, Major Lauchlan, Dr. Leprohon, St. Charles, Rev. M. Desau'niers, and Wm. Evans.

P. L. LeTourneau, Esq., V. P., being called to the Chair, Wm. Evans, Esq., was appointed to act as Secretary. The Secretary read from the Transaction Book of the Society the Resolution of last Quarterly Meeting, directing him to give notice for the Annual General Meeting to take place this day. The Secretary had given notice in several of the newspapers, both in English and French, in Montreal, and had written to H. L. Langevin, Esq., of Quebec, one of the Directors of the Society, requesting that he would have notice given of the Meeting in some of the Quebec papers.

The Accounts were laid upon the table, and a Balance Sheet, containing a general statement of the Funds of the Society, placed before the Meeting. A letter from H. L. Langevin, Esq., of Quebec, was read, and the Secretary was instructed to reply to it, that some of the Directors would probably be chosen this day from Quebec and that District, who would represent in the Society that section of

the country, and that already, through the election of Presidents of the County Agricultural Societies as Honorary Members of the Lower Canada Agricultural Society, all parts of Lower Canada would be amply represented in this Society, if those gentlemen wished to avail themselves of the opportunity, and maintain friendly relations with the Lower Canada Agricultural Society. The latter Society have at this moment printed circulars inviting the formation of Agricultural Committees throughout the country to act in concert with this Society in promoting agricultural improvement, and circulars have also been ordered to be addressed to Agricultural Societies, School Commissioners, Municipalities, &c., upon the same subject.

The proposed hearty co-operation of all parties interested in the improvement and prosperous condition of Agriculture, this Meeting conceives, would be a preferable course to a division of the Lower Canada Agricultural Society into two separate Boards of Directors. If Committees are formed and put themselves in communication with the Lower Canada Agricultural Society, a very great impulse might be given to agricultural improvement, by publishing the reports, suggestions, and recommendations of Local Committees in the Agricultural Journal, and thus uniting the whole country in one Association for the improvement of husbandry. All this machinery might be put in active operations without creating any feelings of jealousy, if Agriculturists were disposed to unite in such a good work for the interest of their country.

The following Report was submitted and read by the Secretary, Mr. Evans:—

Annual Report of the Directors of the Lower Canada Agricultural Society.

Five years have now elapsed since the first organization of the Lower Canada Agricultural Society, and the Directors for the past year rejoice to have it in their power, from their personal observations as well as from reports from every section of the country, to assure this Meeting of the steady progress of agricultural improvement in Lower Canada.

This progress may be slow, but it is very satisfactory to know that an improved system of husbandry has been introduced in almost every parish, and from the circumstance that this improvement has been adopted as well by Canadian as by British farmers, we may confidently anticipate that it will extend, particularly when the favorable results produced by an improved system are manifest in the neighborhood where introduced. The success of a good system of husbandry will always be the strongest recommendation to its general adoption by the rural population. We have ample experience, that, in all countries, farmers are slow to adopt new systems until they are proved to be beneficial, and, therefore, we should not be surprised or disappointed that improvement does not make such rapid progress in agriculture as in other manufactures and occupations. A suitable education would probably overcome this difficulty, as it would enable men to estimate more correctly the value of changes proposed to them, free from the prejudice of former habits and local customs.

It may be expected that the Directors of the Lower Canada Agricultural Society should offer some further proof, than that of reports and their own opinion, of the progress of agricultural improvement in Lower Canada.

The cultivation of green crops and sowing of clover and grass seeds are considered most essential in all good systems of husbandry, and it was the greatest defect in Canadian farming heretofore that the cultivation of these crops was neglected. The Directors are happy to state that the case is different now, and for the last few years, and particularly this year, there is a vastly increased demand for, and sale of, English, French, Dutch and American red and white clover seed, timothy seed, beans, tares, mangel-wurzel, and beet seed, turnip, carrot, and parsnip seed, and all for field culture. It is a well established fact that a few years back the quantity of these seeds sown in the country (with the exception of American clover and timothy seed) was very trifling, and rarely cultivated, except in gardens. The

Seedsman of the Lower Canada Agricultural Society, Mr. George Shepherd, has sold all the foreign clover and mangel-wurzel seeds he imported for this year, and the quantity was far short of the demand. He has also sold a large quantity of Canadian clover, timothy, carrot, parsnip, and other seeds. To the Agricultural Society of the County of Saguenay he has sold over 1000 lbs. of clover seed, and other seeds in proportion. The Directors believe that other vendors of agricultural seeds have also sold large quantities this spring. Several of the Directors have raised superior samples of red clover seed last year, and many farmers have commenced saving of turnip, mangel-wurzel, carrot, parsnip, tares, and other agricultural seeds. There is a considerable demand from all parts of the country for the most improved implements of husbandry, and the best are sought for, whatever the price, and by Canadian farmers. The Directors conceive that these unquestionable facts leave no doubt whatever that our system of husbandry is improving, and will improve. There is another proof—the anxiety of many Canadian farmers to improve their neat-cattle, sheep, and swine. This feeling may not be general, because the means are wanting, and the lands are not yet generally in a state to keep a good stock of neat-cattle or sheep. It is satisfactory, however, that this desire for improvement exists, and when the success of those who endeavor to improve their live stock is made manifest by experience, it is to be hoped the desire will become general. We should not forget that some years back there was a large importation of beef, mutton, pork, cheese, butter, and fowls, into Canada from the United States. Now we export to that country horses, neat-cattle, sheep, butter, fowls, and eggs, barley and oats, to a large amount, notwithstanding a heavy duty is payable upon all these articles. The quantity of cheese manufactured in Lower Canada is greatly increased, and some is of as good quality as any made in North America, proving that our climate and pastures are well adapted for dairy purposes. Excellent butter is manufactur-

ed, though a considerable proportion is not so carefully managed as would be necessary, and this circumstance diminishes considerably the value of the produce of dairy cows, which a little skill and attention would remedy.

It is only necessary to compare the meat markets of our cities now with what they were thirty years ago, to have further proof of the improvement of agriculture in Lower Canada. In beef and mutton particularly the improvement is surprising. In what was formerly the staple produce of Canada, wheat, we cannot, unfortunately, boast of much improvement, chiefly in consequence of the ravages of the wheat-fly, which prevents the sowing of the grain at an early season as heretofore. Every exertion is, however, making to remedy this evil, by the introduction of new varieties of seed that are capable of cultivation so as to escape damage from the fly. The disappointment in regard to wheat is not, perhaps, an unmitigated evil, as probably it had considerable influence in changing the system of husbandry, and inducing farmers to pay some attention to rotation and the cultivation of a greater variety of crops. Under existing circumstances, live stock and their products, judiciously managed, would pay as well as wheat. There is encouragement to grow barley and oats, and by careful cultivation and weeding of the crops (and the Directors regret to report that the latter duty is too much neglected by farmers), excellent crops of these grains might be raised in Lower Canada, the climate and soil being favorable for them.

In regard to the publication of the Agricultural Journals, the Directors, in December, 1850, made an arrangement with Mr. R. W. Lay, of this city, to publish the Journals for a period of five years, and to collect the subscriptions due to the Society for the Journals, previous to the 1st of January, 1851. Mr. Lay published the Journals only for one year, and discontinued it from the 31st December last, and has not yet paid to the Directors any part of the amount he collected for them, or made any regular statement to them. The

Directors, in consequence, were obliged to have the Journals published on their own account, and arranged with Mr. John Lovell for the present to publish it for them from the 1st of January last. The expense of publishing 1000 copies in English and 1500 in French, for this year, will be about £300, exclusive of the editor, translator and wood engravings. The Directors rely upon the support of the friends of agriculture, that they will sustain the Journal and secure the Society against any loss by its publication. It would not be unreasonable to expect that subscribers would be obtained for every number published, in a population of one million, chiefly agricultural, and this would pay all expenses of publication, and enable the Directors to apply the Legislative grant to an annual exhibition. It is difficult to reconcile in the same individual the desire to promote the improvement of agriculture in Lower Canada, and the refusal to contribute five shillings annually towards the support of the only Agricultural Journal published in the country, whatever might be its merits, and it is scarcely possible that such an inconsistency can exist. Mr. Cherrier has been employed by the Directors to make a tour through the country in order to obtain subscribers to the Journals and to collect subscriptions, and circulars have been printed to be addressed to Presidents of County Agricultural Societies, to the Clergy, School Commissioners, Municipalities, and influential parties throughout Lower Canada, and there is every reason to hope that the Journals will pay their own expenses this year. At all events, the Directors considered they had no option but to publish the Journals in conformity to the terms of the Act of Incorporation, and for the benefit of agriculturists, and if it could be made self-supporting, it would be better to have it entirely under their own control than in the hands of any other parties.

The Directors of the Lower Canada Agricultural Society have applied the means at their disposal chiefly to the circulation of useful information throughout the country, with a view of exciting a general interest in agriculture, and a desire for its improvement. They

were of opinion that this course, considering the peculiar circumstances of Lower Canada, was calculated to produce more general benefit to the rural population than any exhibition they could have held up to this period, and they appeal with confidence to this Meeting for approval of their proceedings. Last fall they held two Provincial Ploughing Matches, one at Quebec, and one at Varennes, paying £50 in premiums at each place. The application of this amount of their funds, the Directors conceive, will have a good effect in encouraging a laudable desire to excel in the operation of ploughing, so necessary to good and successful farming.

From a desire to form a friendly intercourse and hearty co-operation with the County Agricultural Societies, the Directors elected the Presidents of these Societies Honorary Members of the Lower Canada Agricultural Society, (a measure, they hope, you will approve this day,) and invited them to a general Agricultural Congress, which took place on the 10th of February last in this city, to assist in the discussions and deliberations which might take place. Several of these gentlemen were at that Meeting, and others had written interesting letters accounting for their absence, and expressing their satisfaction and willingness to unite with this Society in forwarding the objects for which, it is presumed, all Agricultural Societies are organized. For the information of Presidents who were not present at the Congress, the Agricultural Journals, containing reports of the proceedings at the Congress, have been forwarded, with a respectful request that they would acquaint the Directors of this Society with their opinions and views upon these different subjects, and make any other suggestions they might conceive to be expedient.

The opinion of the Directors of the Lower Canada Agricultural Society remains unchanged in regard to the necessity and expediency of providing means for imparting an agricultural education to the children of the rural population of Lower Canada, and they conceive a commencement might be made by the intro-

duction into the country schools of suitable books, such as Agricultural Catechisms and Class Books, prepared or selected for the purpose, for the reading and study of the pupils. But they conceive it would also be expedient to establish in the District of Montreal and Quebec an Agricultural School connected with a Model Farm, where youths over 14 years of age would be received, educated, and instructed in the science and practical art of agriculture. This would encourage men of education and capital to become agriculturists, and be the means of saving much capital that would otherwise be wasted when employed in agriculture by those who would be inexperienced in the business. All other professions and businesses have the advantage of a suitable education and training, but agriculture never had this common justice that was so essentially necessary to its interests and prosperous progress. The expense of the first establishment of these Institutions is the great objection, and the agricultural population are not in a position to enable them to establish them from their own means. Their introduction would, therefore, appear to be hopeless, unless through Legislative aid. If once established under judicious superintendence and proper management, there is no reasonable cause to doubt that they would be self-supporting, or otherwise the system of husbandry adopted at these places would not be advantageous as an example, and the land live stock and implements, would be good security for the expenditure on their purchase.

The Directors of the Lower Canada Agricultural Society would recommend to the Members of the Society, who may be engaged in agricultural pursuits, have adopted a good system of husbandry, and are interested in the prosperity of agriculture, to make reports of their experiments, cultivation, management, and the results, for publication in the Society's Agricultural Journals. Such reports, carefully made, from whatever quarter they may come, would have a very beneficial influence in recommendation of good systems of husbandry, and in extending agricultural improvement.

Dr. Johnson is reported to have said, "He who wants to do a great deal of good at once, will never do any," and perhaps this saying should be a warning to us not to attempt to do too much good at once. The Directors of the Lower Canada Agricultural Society confidently hope that the Agriculture of Lower Canada will ultimately attain a high state of perfection and prosperity, though this desirable change may not be generally effected so rapidly as they would wish. A new and perfect system cannot be forced upon the people, but will be sure to recommend itself gradually, chiefly by the successful results obtained by those who practise it first.

The Directors of the Lower Canada Agricultural Society in August last had a proposition made to them by one of their Members, Alfred Pinsonneault, Esq., to place at their disposal a farm at La Tortue, containing about 500 acres, with the live stock, implements, hay, oats, and straw then upon it, for the term of five years, on favorable terms, to be managed by them as a Model Farm. This offer was accepted, with one condition, that if the Legislature did not grant a sufficient aid for the establishment of an Agricultural School to be in connection and attached to the Model Farm, the Directors would have the power to surrender the farm to Mr. Pinsonneault at the termination of the first year, being the 1st of September next. A Committee of Directors were appointed to visit and superintend the Farm. Contracts were perfected between the Directors and Mr. Pinsonneault, and a French gentleman, Mr. Ossaye, an experienced agriculturist, was engaged to superintend and manage the Farm. The live stock, implements and produce were estimated by arbitrators, and passed over to the Directors on the 1st day of September last, with possession of the Farm. Mr. Pinsonneault was appointed Treasurer of the Model Farm, and has received £300, currency, to be applied to the cultivation of the Farm this year, and to pay the salary of Mr. Ossaye, but this amount was to be refunded to the Society in case the Farm should be given up at the end of the first

year of the lease. At the last Quarterly Meeting of the Directors, on the 12th instant, Mr. Pinsonneault stated that he was anxious to know as early as possible, if the Directors would continue to hold the Farm to the end of the term of five years, and from the uncertainty that existed of the Legislature granting a sufficient aid for the establishment of an Agricultural School connected with the Farm, as first proposed, he thought it would be best at once to propose to the Directors to take the Farm off their hands on the 1st of September next ensuing, and accordingly handed to the Chairman of the Meeting a written proposition to that effect, which was acceded to by a Resolution adopted at that Meeting, and the Farm, live stock, implements, and produce are to be given up to Mr. Pinsonneault on the 1st of September next, on such terms as may be arranged between the Directors and that gentleman. Mr. Ossaye's engagement with the Directors is to terminate at the same period.

The Directors of the Lower Canada Agricultural Society have entered into a long detail of their doings, submitted a faithful account of their stewardship, and, perhaps, speculated too sanguinely on the favorable future prospects of Agriculture in Lower Canada. It is in the power of this Society to do much to secure the favorable results now anticipated. The Directors, whom you may elect this day, incur considerable responsibility to their country in assuming the duties which that Office imposes upon them. The intention of the framers of the Act for Incorporating the Lower Canada Agricultural Society was, that every gentleman who might in future be elected as a Director of that Society *would do his duty* in that capacity to promote, by every means in his power, the improvement of Agriculture in Lower Canada.

It may be imagined what a vast amount of good might be produced by thirty-three gentlemen selected from all parts of the country that compose the Board of Directors acting constantly while in Office, in conformity to this implied engagement, when they undertake the duties of Directors.

The Directors have refrained from offering you any exciting picture of the pleasures and happiness of rural life, in order to induce you to be more ardently attached and favorably disposed to agriculture. The most eloquent language they could employ would not make agriculture any thing more or less than what it is, and always has been, from the Creation of the human race, the most necessary, most useful, and, therefore, the most honorable occupation practised by mankind, and this fact alone should be sufficient motive and recommendation to all agriculturists to endeavour to attain to the highest perfection possible, in the practice of this the noblest of arts and pursuits.

The Directors of the Lower Canada Agricultural Society beg to submit a statement of their funds for the past year. At the last Annual General Meeting they owed a balance of about £320; this year all has been paid up to the 1st instant, except what is due for printing the Journals this year, upon which £50 has been paid, and the subscriptions are nearly all due, and the Directors have paid £320 in every way upon the Model Farm, including Insurance and expenses of making contracts. By the annexed statement referred to above, there is a balance remaining in the Montreal Bank of £62 6s. 7d., currency.

The Hon. C. S. De Bleury then moved, seconded by L. A. Moreau, Esq., that the Report then read by the Secretary be received and adopted, which was carried unanimously.

Major Campbell submitted the names of several members of the Society for election as Directors for the ensuing year. When, after due consideration, the following gentlemen were elected:—

Hon. A. N. Morin, Provincial Secretary, Hon. G. R. S. DeBeaujeu, Hon. A. Ferrie, Hon. C. S. DeBleury, the Rev. M. Désaulniers, Rev. M. Morin, Major Campbell, Alfred Pinsonneault, John Yule, P. E. Leclère, M. Valois, M. P. P., —Chapais, M. P. P., Kamouraska, Charles Taché, M. P. P., Rimonski, Alfred Turgeau, F. A. LaRocque, David Laurent, D. Leprohon, St. Charles, G. Hurteau, J. Vincent, F. Armand, P. L.

LeTourneau, L. A. H. Latour, G. Gillbault, G. Chagnon, Wm. Evans, Dr. Meilleur, Capt. Rhodes, Quebec, H. L. Langevin, Quebec, L. A. Moreau, T. F. Allard, John Drummond, A. Kierskowski, and John Fraser, Esquires.

The thanks of the meeting were then moved to the Chairman, P. L. LeTourneau, Esq.—which was carried unanimously.

A vote of thanks was subsequently passed to the Secretary and Treasurer, Wm. Evans, Esq., for his services in that capacity.

When the election of Directors was completed, the business of the Annual General Meeting was concluded.

By order,

WM. EVANS,

Secretary to the General Meeting.

Montreal, 19th May, 1852.

THE LOWER CANADA AGRICULTURAL SOCIETY.

Dr.

1851.			
Sept. 20.	To Government Grant,		
	£1000, less commission charged		
	by Bank of Montreal, £5.....	£995	0 0
Oct. 10.	To balance of grant of 1850		
	remaining in the hands of		
	Alfred Pinsonneault, Esq.,.....	17	10 1½
	To Subscriptions for Journals		
	previous to 1851.....	3	6 3
	To Subscriptions of annual mem-		
	bers, received from 20th May,		
	1851, to 1st January, 1852.....	3	5 0
1852.			
May 12.	To subscriptions received		
	for English Journal, for this		
	year, up to this date.....	22	12 6
	To do. do. French Journal do.	20	12 6
	To Donation and Subscriptions of		
	Life members this year.....	10	0 0
	To Subscriptions from Annual		
	Members, do.	1	5 0
	To Subscriptions received by		
	Post Office for Journal of 1851,		
	to be allowed Mr. Lay.....	2	0 0
		£1076	16 4½

May 19, 1852.

WM. EVANS,

Sec. and Treas. L. C. Agricultural Society.

Cr.

1851.			
Sept. 20.	By balance to Secretary		
	and Editor, due up to 1st May,		
	1851.....	£118	8 4

Oct. 10, By Mr. Bibaud, paid him for Translation.....	35	17	6
By paid R. & A. Miller as per Accounts.....	4	0	10
By paid Mr. John Lovell, on account of Printing Journals, previous to 1st January, 1851.	174	5	3
By paid Alfred Pinsoneault, Esq., as Treasurer of the Model Farm, as per Cash Book.....	300	0	0
By paid for Insurance, and for making contracts for Model Farm, as per Cash Book.....	19	1	0
By paid Provincial Ploughing Matches in the District of Quebec and Montreal, Oct., 1851.....	100	0	0
By paid Mr. Shepherd rent of rooms, to May, 1852.....	7	10	0
By paid Mr. Lajoie for translation, August, 1851.....	4	3	4
By paid Mr. Cherrier for do. Sept. and Oct., 1851.....	9	3	4
1852.			
May 12, By allowance to Secretary and Editor for the past year, ending 1st May, 1852, and for travelling expenses.....	156	0	0
By paid advertising, hand-bills, &c., as per Cash Book.....	7	17	3
By paid Postage, Stationery, incidental expenses as per Cash Book and vouchers.....	10	6	2½
By paid Mr. John Lovell on account of Printing Agricultural Journal for this year.....	50	0	0
By commission to Mr. Cherrier for collecting Subscriptions....	6	15	0
By paid distributing Journals in Montreal.....	3	13	9
By paid for wood-engraving and blank receipts.....	4	17	6
By paid M. Beauchemin for Office Books.....	1	5	6
By paid Translator Mr. Ossaye's Report, and Dr. Taché's communication	1	5	0
May 19, By balance in Montreal Bank.....	62	6	7
	£1076	16	4½

May, 19, 1852.

WM. EVANS,
Sec. and Treas. L. C. Agricultural Society.

In the afternoon of the 19th May, 1852; a meeting of the Directors of the Lower Canada Agricultural Society, elected in the forenoon of the same day, took place at their Rooms in this City.

Gentlemen present:—Major Campbell, Rev. M. Désaulniers, Rev. M. Morin, Al-

fred Pinsoneault, John Yule, David Laurent, P. E. Leclère, John Fraser, Dr. Valois, M. P. P., P. L. LeTourneux, L. A. Moreau, L. A. H. Latour, J. G. Gilbault, A. Kierskowski, G. Hurteau, Dr. Leprohon, and Wm. Evans, Esquires.

John Yule, Esq., being called to the Chair, Major Campbell proposed, seconded by Dr. Valois, M. P. P.:—

That P. E. Leclère, Esq., of St. Hyacinthe, be elected President of the Lower Canada Agricultural Society for the present year.—Which was carried unanimously.

Mr. Yule then left the Chair, and Mr. Leclère, the new President, was conducted to it by Major Campbell; who, upon taking the Chair, returned thanks for the honor done him, and assured the Director that he would do all in his power to fulfil the duties of his Office as President.

The following Gentlemen was elected Vice-Presidents of the Society:—

Capt. Rhodes, P. L. LeTourneux, Esq., David Laurent, Esq., Dr. Valois, M. P. P., John Drummond, Esq., and John Fraser, Esq.

Proposed by the Rev. M. Désaulniers, seconded by the Rev. M. Morin:—

That Wm. Evans, Esq., late Secretary and Treasurer of the Society, be re-elected to the same offices for the present year.—Carried unanimously.

Proposed by L. A. H. Latour, Esq., seconded by David Laurent, Esq., that the following Gentlemen compose the Journal Committee: P. L. LeTourneux, Alfred Pinsoneault and John Yule, Esquires.—Adopted.

Proposed by A. Kierskowski, Esq., seconded by John Fraser, Esq.:—

That the following Gentlemen compose the Executive Committee:—The Ex-Presidents of the Society; Major Campbell, John Fraser, and A. Kierskowski, Esquires.—Adopted.

Proposed by John Yule, Esq., seconded by S. Hurteau, Esq., and adopted unanimously:—

That the following Gentlemen compose the Committee to visit and superintend the Model Farm at La Tortue:—Rev. M. Désaulniers, Major Campbell, John Fraser, David

Laurent, G. Hurteau, John Yule, Alfred Pineseault, John Drummond, A. Kierskowski, P.L. LeTourneau, L.A. Moreau, Esquires, the Rev. M. Morin, and the Secretary of the Society.

It was then determined that John Fraser, G. Hurteau, John Drummond, Esquires, accompanied by the Secretary, do visit the Model Farm immediately, make a particular inspection of the whole concern, accounts, &c., and on doing so, the Secretary is instructed to call a Meeting of the Farm Committee to whom the Report of the visitors is to be submitted.

The business of the day having then concluded, the thanks of the meeting were voted to the Chairman. By order,

WM. EVANS,

Sec. & Treas. L. C. A. S.

Montreal 19th May, 1852.

The Quarterly Meeting of the Directors of the Lower Canada Agricultural Society took place, pursuant to written notices addressed to the Members by the Secretary, on Wednesday, the 12th day of May, 1852, at 11 o'clock, A.M. Gentlemen present:—The Hon. G. R. S. DeBeaujeu, Major Campbell, John Yule, A. Pineseault, P. L. LeTourneau, D. E. Leclere, D. Laurent, J. Fraser, Wm. Valois, M. P. P., L. A. H. Latour, J. G. Gilmont, and Wm. Evans, Esquires.

P. L. LeTourneau, Esq., V. P., took the Chair. The Secretary submitted several letters and other documents, and the accounts, vouchers &c., for the past year, were placed before the meeting.

The first subject brought forward was the letter of Mr. Dorion, proposing to publish the Agricultural Journals, and the Directors thought it most advisable not to make any change for the present in regard to the publication of the Journal, until an effort would be made to increase the number of Subscribers, and the Secretary was instructed to acquaint Mr. Dorion of this decision of the Directors.

The next was a letter from Mr. Lajoie,

upon the same subject, and the Secretary was instructed to return thanks to that gentleman for his excellent suggestions, but that the Directors could not publish the Journal upon the terms proposed.

Proposed by Major Campbell, seconded by John Fraser, Esq., and adopted:—

That P. L. LeTourneau be added to the Journal Committee.

Proposed by A. Kierskowski, Esq., seconded by A. Pineseault, Esq., and adopted:—

That the Society of Agriculture of Lower Canada, having already expressed upon a former occasion the great interest it takes in the formation of a Department of Agriculture, (*Bureau Officiel d'Agriculture*), and confident in the solicitude of Government to provide for the true interest of agriculture in the province, believes it to be its duty as well towards the governing, as the governed, to suggest from time to time to the said Department such practical measures as would be best calculated to promote the said interests of agriculture.

At the head of these measures, the Society believes it ought to place, as deserving of encouragement on the part of the Department, the publication of a Journal of Agriculture. This publication being made without any view to speculation, and experience having already demonstrated to the Society the numerous difficulties in the way of augmenting its circulation, and by this way, in proving its moral and material condition, they would respectfully recommend to the solicitude of the Agricultural Department the presentation of a law, having for aim to oblige the different Societies of Agriculture of the Counties to consider the said Journal as their official organ in future, and that all notices of exhibitions of agricultural productions be published in the said Agricultural Journals, and the effect of such a law would immediately make it necessary to publish the Journal *weekly* instead of monthly, as at present.

Proposed by P. E. Leclere, Esq., seconded by David Laurent Esq., and approved unanimously:—

That the following Circular, of which Mr. Leclere read and presented a copy in French, should be printed in the Agricultural Journal, and also in the form of a Circular, to be addressed by the Secretary to the Presidents of County Agricultural Societies, the Commissioners of Education, and to the Mayors or Presidents of Municipalities throughout the country.

OFFICE OF THE LOWER CANADA AGRICULTURAL SOCIETY.

SIR,—The Lower Canada Agricultural

Society publishes a monthly Journal, devoted exclusively to the advancement of this important branch of industry. This Journal has now existed for some years, but unfortunately, owing to the apathy which has hitherto prevailed among a great number of our fellow citizens, the circulation has failed to compensate for the industry and outlay expended in its circulation, in a manner to satisfy the general wish. It devolves of necessity, therefore, upon us to devise means for promoting the circulation of the Agricultural Journal as extensively as possible throughout the Province, and even for its introduction into the houses of the poorer class of farmers.

With this view the Directors of the Society of Agriculture of Lower Canada have come to the conclusion that, by addressing the Presidents of the different Societies of Agriculture in this part of the Province, also the Presidents of the various Municipal and Educational bodies, their combined efforts in support of the present project might be found attended with complete success. Convinced as the Directors are that from the high position of influence occupied by these gentlemen, their council would be found to influence the several Associations over which they preside, to the extent of inducing them to subscribe for a certain number of copies for distribution among the farmers, after their perusal by themselves.

The Directors might cite many examples where this project has been put into execution with success, in many of our Municipal and Educational Institutions; and in every case the President had merely to propose the measure to have it instantly adopted. The Directors, therefore, take the liberty in addressing you, to pray you will bring before the body over which you preside, the necessity of encouraging the circulation of their Journal, by subscribing for a certain number of copies. The Journal, as you are aware, is published monthly and costs merely five shillings yearly, the expenses of postage are not exacted by Government.

The Directors of the Lower Canada Agricultural Society, in conclusion, would inform you that they have named as Agent of their Journal, an active and intelligent man, who will shortly visit each of your localities to collect the fruits of your efforts. The different Presidents are respectfully requested to address a copy of this

circular to the different members of the bodies over which they preside.

By order,
WM. EVANS, Secy.

Montreal, May, 1852.

Moved by L. A. II. Latour, seconded by P. E. Leclere, Esq.:—

That the thanks of this Society are due to Dr. Meilleur, S. E., for the interest he has taken in the cause of Agriculture, by recommending in his "Circulars" to the School Commissioners the importance of their having the art of Agriculture taught in the Model and Elementary Schools, of their causing to be distributed copies of the Agricultural Journals in all the parishes, and of their doing all in their power to place at the disposal of the teachers and school-mistresses grounds, as spacious as possible, in order that they may be cultivated by themselves and their pupils under their (the Commissioners) superintendence; and, finally, for continuing to favor the progress of Agricultural knowledge on all occasions; trusting that the School Commissioners may continue to be guided by his instructions and advice.

This being the day for the Meeting of the Model Farm Committee, and all the gentlemen present being members of that Committee, except Mr. Latour, the subject of the Model Farm at La Tortue was brought forward for consideration, and, after considerable discussion, Alfred Pineseault, Esq., submitted a written document bearing his signature, of which the following is a copy, and handed it to the Chairman:

Having learned from Persons well informed that the Government will not grant money for the establishment of an Agricultural College at La Tortue, I ask the Directors of the Lower Canada Agricultural Society, that my farm be returned to me on the 1st September next, under the same conditions it would have been returned, if the Government, after being duly petitioned, had refused to give a grant of money.

(Signed.) A. PINSEAUULT.

Montreal, 12th May, 1852.

In consequence of the above request, I hereby consent to the agreement (between me and the Society) becoming null and void, on and after the first day of September next.

(Signed.) OSSAYE.

12th May, 1852.

It was then proposed by John Yule, Esq.,

seconded by Dr. Valois, M. P. P., and adopted unanimously:—

That the offer of Mr. Pinsoncault, to take his Farm at La Tortue, and annul the lease, be accepted.

Proposed by Major Campbell, seconded by John Fraser, Esq., and adopted:—

That notice be given for the Annual General Meeting of the Lower Canada Agricultural Society, to take place at their Rooms in this city, on Wednesday next, the 19th inst., at 11 o'clock, A. M., and that the Secretary prepare this Report, and a statement of the Funds of the Society, to be submitted on that day.

The meeting then separated.

By order,

WM. EVANS,

Sec. & Treas. L. C. A. S.

Montreal, May 12, 1852.

We have received the communication of "An English Translator," but think it objectionable, unless the writer will consent to revise it, and omit any part that has not reference to agriculture, or agricultural education. We shall be glad to insert the letter with these alterations, as it is well written.

New Members proposed by L. A. H. Latour:—

Dr. J. G. Bibaud, of Montreal; C. E. Belle, N. P., of Montreal; R. Bellemare, Esq., of Montreal; Dr. T. Huguet Latour, of Boucherville; Dr. C. Huguet Latour, of St. Rémi; P. R. Lafrenaye, of Montreal; L. Labrèche Viger, of Montreal; Edouard Lefavre, of Vaudreuil; R. Trudeau, Esq., Ovid Peltier, Esq., Annual Members.

LIFE.—A modern philosopher has apportioned man's full existence as follows:—

Seven years in childhood's sports and play	— 7
Seven years in school from day to day	—14
Seven years at a trade or college life	—21
Seven years to find a place and a wife	—28
Seven years to pleasure's follies given	—35
Seven years by business hardly driven	—42
Seven years for some, a wild goose chase	—49
Seven years for wealth, a bootless race	—56
Seven years for hoarding to your heir	—63
Seven years in weakness spent and care	—70
Then die, and go—you should know where!	

Absence and other engagements prevented us from visiting the Panorama of the Crystal

Palace, previous to Friday last, and we regret that the circumstance of this Journal being published on the first day of each month only prevented us from rendering any service to Mr. Barnum, by any notice we could give of it until now, in recommendation of this highly interesting picture of the Crystal Palace, and the Great Exhibition of the Industry and productions of all Nations. Panoramas, well got up, and that of the Crystal Palace is especially entitled to this character, are both interesting and instructive to young and old.

Mr. Barnum deserves general patronage, for having chosen such a subject for a Panorama, and thus affording an opportunity to those who did not see the original, to see the exact representation of, unquestionably, the most interesting Exhibition that has ever taken place, and one in which all Nations were interested, and we hope Mr. Barnum will be amply remunerated for the rich treat he has afforded to the citizens of Montreal by his splendid Panorama.

AGRICULTURAL REPORT FOR MAY.

The month of May commenced with a cold rainy day, but was succeeded by dry cold weather, very suitable for spring work, but not very favorable for vegetation. Had the spring commenced early in April we might have expected cold in May, but after so long and severe a winter, we did hope that the month of May would be beautifully fine, which we regret, it has not been. A cold, harsh wind has prevailed that rendered the soil dry and hard, and in many places difficult to work or plough, and up to the 29th there was scarcely any dew at nights. On the night of the 6th we had some rain, succeeded by very high and cold winds. Rain fell again on the 20th and 21st, accompanied by a very low temperature and a harsh wind. This sort of weather is not by any means favorable for grain lately sown, and just appearing over ground. We have been told that in many places it was very difficult to plough, and we believe a large portion of the land intended to be ploughed last fall was not done, in consequence of the

early commencement of winter. This circumstance will greatly retard the spring sowing. It is most desirable that fall ploughing should be finished if possible before the winter, and the land well drained, and the furrows cleaned out. When this is done, the soil will be in much better condition for spring sowing, and for producing a good crop, and if farmers used due diligence, and had their land properly drained, the fall ploughing might be finished generally before the winter commenced, and had it been done last fall, most of the sowing and planting might be finished before the end of May, as it always should be. When the spring sowing and planting is extended into the month of June, the chance of good crops is very doubtful, unless in a most favorable season, that is neither very moist nor very dry. There has been a considerable demand this spring for Fife wheat, or what is known by that name. We have been told it succeeds well in Upper Canada. We conceive it to be a great inconvenience, and has an injurious tendency, to give new names to wheat or other grain. Farmers do not know what kind of grain they sow, when new names are applied to them. It may be very proper for a farmer, who, by great attention, raises a distinct variety of grain, not known before, to give it what new name he pleases, but it creates much confusion, when we give a new name to an old variety of grain that has been long cultivated, and is known by another name. If the cultivators of such grain wish to give it a new name, they should let farmers know what was the former name by which it was designated, or inform the public how they had raised a new variety not known or distinctly described before. We do not wish to give offence by these remarks, but several enquiries have been made of us as to the correct designation of wheat advertised for seed, and the names and description published by Lawson & Sons, of Edinburgh, is the only one that we refer to in answering these queries, as we consider it the very best authority. We know that very few farmers have raised new varie-

ties of seed in this country, because there is not sufficient attention given to such matters. In the United States it is scarcely possible to know any particular variety of grain by their old proper names, as described by Lawson. We should recommend that when it is desired to give a new name to varieties of seeds, the old name should also be retained, and let the new one be an addition to it. This would prevent confusion and uncertainty. In importing seeds from any country, it is very proper and necessary to give the name of the country that has produced them, because, by these means, we shall be able to determine what country produces the best and most suitable seeds for our cultivation in Lower Canada. It is quite necessary in a perfect system of agriculture that the greatest attention should be given to all these matters, though trifling they may appear. It is also very necessary to have clean and unmixed varieties of every description of seeds.

Whatever we may expect from merchants, who have themselves to buy the seed they sell for sowing, farmers who sell grain for sowing should have it clean, or they should not advertise it *for sale*, because when it is so advertised, we have reason to expect it to be fit for seed, which it cannot be, if mixed with different varieties, and with seeds of weeds. These matters should be well understood, as to the obligation there is upon vendors of agricultural seeds, to sell only such as are fit for seed, and profitable for farmers to purchase. If farmers sell seeds to purchasers in the market, or to persons coming to their farm to purchase, they may sell it as it is, without any warranty, and this will be perfectly fair, but no seeds should be advertised for sale that are not clean and fit to sow.

In top-dressing for grain crops with farm-yard manure, it is almost impossible to have a clean crop. If for oats or peas it is not of so much consequence, but for wheat or barley, the sample will not be clean or fit for seed. Well fermented manure should be employed when top-dressing for grain crops, or even when ploughing it in

for them, unless they are in drills and hoed, and that is seldom done in Canada. Indeed, unfermented manure is very unsafe to use, except for drilled crops where any weeds that grow from it may be destroyed by hoeing. Summer fallow is very little practised in Lower Canada, and it cannot certainly be from any objection to waste the land for a year, because we see almost upon every farm some land little better than waste. An acre properly summer-fallowed would produce a crop of double the value of an acre that was not so cultivated, and the expense would not be very great. It is not one good crop only that it would give, but perhaps three or four, and the land would certainly be clean. It is of very little benefit to grow crops that are not free from weeds, and it is altogether inconsistent with good farming to allow them to grow in cultivated crops. Fall wheat is far from being an even crop this year. The last winter has left fall wheat very patchy, and we believe there are not many fields of it in Lower Canada that have not suffered more or less. Where it was deeply covered with snow, last winter, we have been told the plant has been destroyed, we suppose from being too deeply, and too long, covered from air and light. It is very annoying to a farmer to see a field which he had done all he could to cultivate well, and sow in time, have many spots or patches in spring, where the plants are destroyed by the frost. This circumstance is a great discouragement to the sowing fall wheat to any great extent, though we think it might be successfully cultivated, by adopting a proper plan on summer-fallowed land. The land should be formed into small drills, at about 9 or 10 inches from centre to centre, so as to make about 10 or 12 drills on each ridge of 9 feet wide. The seed might then be sowed broadcast, and the land lightly harrowed, so as to cover the seed, but not to level the drills. We have repeatedly recommended this plan, but it cannot be adopted except on land that has been summer-fallowed. If fall wheat would succeed, it would be a great advantage

to farmers, as they would have so much of their work done before the hurry produced by our short spring. This year we had no spring weather in April, the transition was at once from winter to summer, though the temperature has not ranged high up to this period. Potatoes have brought high prices lately, 5s. the bag, said to contain one minot and a half. They would pay well if even a moderate crop could be raised, at these prices. Farmers do not like to give up the cultivation of potatoes, notwithstanding the uncertainty of the crop, and the danger of rotting in the cellars or root-house. The best variety of the potato for the table are the safest to plant. The driest and smallest potatoes are less liable to the rot than the larger and softer varieties, and special manures, such as compost ashes, charcoal, and salt, though the latter cannot be considered a manure, are considered better and safer than that of the farm-yard. Composts are not attended to as they should be. The quantity of manure might be greatly increased by composts formed of cleanings of drains, moss, ashes, lime, salt, and any spare farm-yard manure, liquid manure might also be thrown over it, and all should be turned over and well mixed. This would be good for top-dressing, and for potatoes or other root crops, sugar, beet, and even the mangel wurzel, and carrot, are said to succeed better, but particularly the former, after a crop of grain, (oats or barley,) manured had been taken off the land, and we have no doubt but it would prove so in practice. The manure gets to be well rotted and incorporated with the soil, and hence more suitable for these sort of crops. We perceive by our exchange papers that a steam plough has made several experimental trials lately near Edinburgh, and is reported to have succeeded very well. It will plough 7 acres (Scotch we believe, which is considerably larger than the English acre), in ten hours, at an expense of from 16 to 18 shillings, or about 2s. 6d. the acre. It turns four furrows at a time, and may be made to turn six. The first cost of the implement is about £300, but the engine can

be employed to trash, and do all other work upon the farm that is usually executed by straw machinery. Further improvements were expected to be made in this machine, to make it more suitable to the common purposes of ploughing. It was tried on ploughed land, and moved over it without difficulty, and ploughed it a second time. We have a plan of the implement, but cannot judge sufficiently of its merit by that alone. It is only when seen in operation that a correct opinion can be formed of it.

We have seen many parts of the neighbourhood, and there cannot be any doubt that the country is suffering for the want of rain, particularly the young crops, meadows, and pastures; indeed the meadows have not yet much appearance of grass, and probably will not produce a heavy crop this year. When clay soil becomes very dry at this season, as at present, it requires considerable rain to soften it sufficiently. Dry weather will have some effect in checking weeds, and in land cultivating for green crops, farmers will have it in their power to dry up and destroy roots of weeds to a considerable extent, if they use proper exertion. We had an opportunity this spring of knowing the great desire of Canadian farmers particularly, to obtain new varieties of seed wheat, and to pay high prices, if they could only obtain samples that were clean, unmixed, and of good quality. We had several applications this spring for seeds, but all later than they should be. Parties requiring seeds should apply in time, previous to the 1st of February, and then we would be able to make the best selections, and be certain that the orders would be strictly complied with. When deferred to a late period, both the price and the quality are at the option of the seller instead of the purchaser. The market prices of agricultural products, generally, are not to be complained of by either seller or buyer, though the price of butter has fallen considerably. We hope, in conclusion, our next report will be more favorable, and that we shall have it in our power to

state the very promising appearance of the crops of every description. If man does his part WELL he may rely with perfect confidence upon the Giver of all Good that the result will be favorable.

Montreal, 29th May.

POINT LEVI, May 20, 1852.

To Wm. Evans, Esq., Secretary to the L. C. A. S.

DEAR SIR,—I have received yours of the 15th instant, by which the Directors of the Lower Canada Agricultural Society do me the honor to ask my opinion and advice relative to certain questions, and especially with regard to Agricultural Schools, with or without Model Farms attached. My opinion I shall give with pleasure, and to be as concise as possible, I generally approve of your plan of Agricultural Schools and Model Farms, as proposed in the April number of the Agricultural Journal; however, I am far from thinking 200 acres sufficient for the Farm: five or six hundred would, at least, be necessary, in my opinion, in order to try different rotations of cropping and to see what will be most advantageous in the climate. We ought not to forget that the turnip crop, which seems to be the hinge on which almost all rotations are made to turn in Great Britain, cannot be followed here but in a very limited extent, and that for numerous reasons, which are too well known to practical farmers to need mention. It is also necessary to have a pretty extensive Farm, in order to keep different breeds of cattle through the year. I am of opinion that the land to form the Farm should be bought by Government. Land being so cheap here, and although such an establishment would necessarily cost a good deal to begin with, its value in a few years would be great. As so small Model Farms in each Municipality, at a cost of £150 a year, I am of opinion it would be so much waste; and that the knowledge to be acquired by visiting such a Farm after it has been in operation several years, would be more likely to be obtained by visiting some of the numerous Farms in the vicinity of Québec or Montreal, belonging to wealthy and public spirited merchants, and generally conducted by European practical farmers, and which may be seen any day. I am afraid that we farmers do not sufficiently reflect how much we owe to those merchant farmers. It is they who have im-

ported improved breeds of all kinds of animals and seeds; it is they who set before the farmers' eyes many new modes of culture recently discovered in Europe, and which on account of the expenses required, and the uncertainty of the result in this climate, makes it necessary for him who lives by farming to adopt with great caution. In fact they in some degree supply in this country the place of those rich landed proprietors, who in Great Britain make experiments, and lead the way to farmers.

But it is only on a *proper Model Farm* that we can expect to see experiments followed out and made public, with that degree of precision which we see has been done by many great farmers in Great Britain, and which we find detailed in Stephen's Book of the Farm, and which *detail and exactness in every particular* is absolutely necessary to make experiments useful.

Where else are the public to see a fair trial of thorough draining; subsequent ploughing, special manures, &c. I cannot help again referring you to that part of my last letter in February, which mentions the state of the roads in this county, for no European farmer, whose knowledge and experience might be so useful to us, will venture to come to settle here until we have good Turnpike road established. I am certain that if the minister, whose particular charge is the advancement of agricultural improvement, was to favour this very extensive, populous, and important County—important not only on account of its agricultural capabilities, but also for its gold and other productions, and especially for its situation, with a visit, he would immediately lend his aid to all those in the County who know and wish the prosperity of the County, to enable them to get Turnpike roads. No doubt there are many other localities where such roads would be beneficial, but none where they are more needed than here. I remain very respectfully,

Your very obedient servant,

CHARLES ROBERTSON,

President A. S., No. 2, Dorchester.

Extract from a letter directed to L. A. H. Latour, Esq., by a friend at Boston.

Although on all hands we hear only of the complaints of subscribers at want of punctuality, I must say that I receive your Agricultural Journal very regularly—perhaps it is because monthly and not weekly or oftener. But why not weekly? Is Lower Canada not able to publish a single

weekly Journal devoted to this most important interest of society, while every little commercial and political interest we know have their numbers daily? Nothing can better indicate the state of feeling on any matter than the press, and not alone by what is said thereon, but by the very fact of being spoken of at all. And no interest need claim a hearing which speaks out not weekly at least, and which will not have a word in it of general news to vary the entertainment of its columns. A monthly Journal will never be supported, as we here in these States know, nor even be able to advance an interest or promote a view. I look forward, therefore, as a friend, to the publication of a weekly Journal, embracing the agricultural operations of your province, and, from observing the erection of an Agricultural Department in Canada, I conceived this hope.

Other gentlemen* of this Union have been elected Honorary Members of your Society, I perceive from this. (May number) I approve of these elections as tending to extend the interest taken in your agricultural affairs, as well as the fraternity of good men in their own peaceful domain.

Boston, 22nd May, 1852.

* Messrs. Henry Wager, John Delafield, and Alexander H. Johnson.

METEOROLOGICAL RESULTS MADE AT ST. MARTIN, ISLE JESUS, C. E.,

BY CHARLES SMALLWOOD, M. D.,

For April, 1852.

BAROMETER.		inches.
Mean Reading of the Barometer corrected and reduced to 12,..... F.		29,470
Highest do. the 4th day,		29,804
Lowest do. the 21st day,		28,890
Monthly Range,.....		0,914
THERMOMETER.		
Mean Reading of the Standard Thermometer,.....		38,38
Highest do. do. Maximum do.,.....		65,50
Lowest do. do. Minimum do.,.....		22,00
Monthly Range,.....		43,50
Mean Temperature of Evaporation, ..		36,17
Snow fell on 3 days, amounting to inches,.....		3,41
Rain fell on 7 days do		1,60
Most prevalent Wind,		N.E.
Least do. do.,		E.S.E.
Most windy day the 21st day, mean miles per hour,.....		25,20
Least do. do. the 26th day, mean miles per hour inappreciable,		
Greatest Intensity of the Sun's Rays.		92,00

NEW FLAX MILL.

Mr. Ludolf, of Leeds, in a letter to Mr. Watkins, of Ombersley, Worcestershire, who has interested himself in the growth of flax, makes the following offer to take the straw:—"I would agree to give 60s. per ton for all flax straw that is grown next season in Worcestershire, if at least 800 acres are grown, so that I can fill a mill in your quarter. My other friends in Lincolnshire and North Riding of Yorkshire send a sheet of paper round to the farmers asking them to put down upon it how many acres they are likely to grow next season. Do you think this plan could be adopted with you? If you would let me know in March if a sufficiency of acres will be grown, I will take such measures as to be ready with the mill for the season. Taking the weight of flax straw per acre at 28 cwt., which is a very moderate estimate, and the seed at 20 bushels, at 6s. per bush., the return will be as follows:—

	£	s.
28 cwt. of straw, at 60s. per ton...	4	4
20 bushels seed, at 6s.....	6	0

Gross profit per acre...£10 4

A correspondent who has forwarded us the above extract adds: This plan of Mr. Ludolf, if adopted, would at once remove the difficulty that farmers have always felt respecting the management of the fibre; they would merely have to thresh out the seed, and send the plant at once to market. Hoping that this statement may induce many of the landlords and tenants of this county to contribute to the above-mentioned 800 acres, and knowing no better method of making it known than asking your permission to insert it in your widely circulated Journal.—*Gloucester Chronicle.*

PROPORTION OF BUTTER EXTRACTED FROM MILK.

SIR,—I see, in your last GAZETTE, an account of the proportion of butter from Irish milk, stated by Mr. Gillespie, of Beaumont, to be nearly one pound to the gallon; but I do not think his a fair trial, as he took the milk all from one cow. Now, I have given much time and attention for some years to the dairy business, and I know, from practical experience, that some cows yield far more butter than others; also, that on the same farm, you will find one field good for yielding butter, and the next field to it, only divided by a fence, to be bad for casting butter. But I have found, from repeated trials of milk taken from the mixed milk of twenty cows, the average quantity of butter produced, to be one pound to one and a half gallons of milk, on good pasture; and two gallons on ground, not good for yielding butter. But I am certain, from experience, to form any general rule of the quantity of milk that ought to produce one pound of butter, must be a disappointment, as so many circumstances occur to cause it to deviate, such as pasture, state of the weather, and the health of the cows—that the exact quantity to be produced will vary much at times: however, I would be glad to hear the opinion of others on the matter. Should you think the above worth a place in your valuable paper, you are at liberty to make use of it.—Yours, &c., W. H. RATHBORNE, *Fabra Villa, December 27,*

The following extracts, showing the advantages of linseed-cake and linseed-meal, for fattening cattle and rearing calves, are taken from Mr. Adam's circular:—

"Almost every person in the habit of feeding cattle for the butcher, is acquainted with the fattening qualities of linseed-cake, but rearing calves with linseed-meal has only been introduced in this neighbourhood within the last three or four years (1838); it is now quite established, and a great saving is the result.

"Half a pound of this meal is sufficient for a calf daily, and this costs only one halfpenny, while a quantity of milk, containing the same proportion of nutriment, would cost 6d. to 8d. per day; a saving would thus be effected of, at least, 6d. a day on each calf, which is 3s. 6d. a week for one calf, and £3 10s. a week for twenty calves; and this, for three or four months, amounts to a sum worth saving.

"The linseed-meal is the cake ground; the best way of using it is to steep, at the rate of $\frac{1}{4}$ lb. for each feed, in cold water, for twenty to twenty-four hours, then to dilute with warm water to the temperature of new milk, a gruel about equal in bulk to the milk usually given. If any milk be added, a pint each feed is quite enough.

"The general report of our farmers and dairymen who have continued the use of this meal for rearing calves, during the last ten to fifteen years, is, that the calves are more healthy when fed on milk, and that there are fewer deaths. It is very nutritive, and at the same time keeps the stomach and intestines in a cool and wholesome condition. No case of what is called *black-leg* has occurred with this feeding, that we ever heard of."

A letter was read from Messrs. D. Maclean & Sons, of St. George's-street East, London, the inventors of a machine for separating the fibre from unsteeped flax straw, to suit it for certain coarse purposes, such as bagging, tarpaulins, rick and railway-truck covers, &c. They stated that, from experimental trials of their machine, they found 46 $\frac{3}{4}$ cwt. of straw, after the seed had been taken off, to yield one ton of clean fibre, and that, in the present condition of the machine, and with inexperienced hands to work it, 50 lbs. of fibre could be cleaned, per diem, at an expense for labor of 4s. But they believed, by some alterations of the mechanism, and with expert workmen to attend it, double that quantity could be turned out in the day; while they expressed an opinion that, the cheapness of labor in Ireland, the working expenses might be considerably reduced. Taking their calculations as a basis, it would appear that the dried straw of a statute acre of flax, weighing about 34 cwt., after the seed had been taken off, would yield 14 $\frac{1}{2}$ cwt. of dry fibre, estimated at a value of 20s. per cwt., for the purposes of manufacture. Taking 21s. as the probable value, the fibre would bring £15 4s. 6d.; and, calculating £6

13s. as the probable expense of preparation by the machine and of carriage to the English or Scotch market, there would remain a nett proceed of £8 11s. 6d.; and, adding the value of twelve bushels of seed, at crushing price—say 3s. 6d.—there would be a total of £11 17s. 6d. per statute acre against the cost of the cultivation, which would leave a very fair profit to the grower. Although, from the novelty of this mode of preparing flax, and the absence of any exact data hitherto, the society was unable to verify this calculation, the committee conceived themselves warranted in calling attention to the subject, and in advising those flax-growers in the southern districts who had been unable to convert their produce into money, owing to the want of local facilities for steeping and scutching, to procure this machine, and prepare the fibre for sale in the dry state. At the same time it was judged advisable to urge the establishment of scutch-mills, by which alone the fibre could be brought to its full value.

PEAT CHARCOAL—(From the *Gardener's Chronicle*).—The fertilising qualities of peat charcoal, even in its plain state, are very great; but when mixed with night-soil its good properties are of course much increased, and in the latter condition a less quantity is required for an acre. Farmers often fail in raising small seeds—turnips for instance; more especially in the south of England. The turnip-seeds are sown in poor hot soil, without any stimulent being immediately available; the seeds in consequence vegetate slowly, giving the fly time to eat the seed-leaf before the rough leaves have been produced. This can only take place in poor soils. On the other hand, market-gardeners never fail in obtaining excellent crops, however hot the weather may be, a result owing entirely to their land being rich. This fact, therefore, should induce farmers to mix their small seeds with powdered peat charcoal before they sow them—all complaints of their failing then would cease. Everything ought to be done that can be done to stimulate young plants; they cannot grow too fast. Farmers, like gardeners, do not want to occupy the land six months with one crop, if the same can be grown in four. Charred peat might be used in many ways. It might be employed with advantage in cow-houses, piggeries, and in dung-heaps. When potatoes are planted, if charred peat is used instead of dung, the young crop will have none of those scabby appearances which always occur where dung is used in the furrow; and the latter offers a great harbour for all sorts of insects. Peat charcoal has been proved to be a perfect deodorizer, and mixed with this material, our town filth might be carted to the country and made available at once. This is the more necessary, as the hardness of the times will not allow the farmer to send his waggon and four horses, with a man or two to fetch home a load of dung, much of the goodness of which has been washed and heated out of it. For my own part, I have for

some years used nothing but liquid manure-water, salt, soot, and wood-ashes; but now I shall employ charred peat. All the plants I cultivate grow most luxuriantly in plain, as well as mixed with night-soil. To amateurs I am sure it will prove a boon, as it will do away with the filth and nuisance of dung.

GAS TAR PAINT.—We have received the following as the proportion of gas tar and water to make paint:

Gas tar,	2 parts.
Water,	1 “

A few minutes after they have well boiled are fit for use. Pot this frequently, and keep boiling. A wheel-barrow, half full of sand, makes a good, portable fire-place, on which you may confine the fire with a few bricks, over which may stand the iron pot with gas tar and water.

It is essential to keep the mixture boiling whilst in use. The water acts mechanically; it never really mixes with the gas tar, and ultimately dries or evaporates, but enables a skin or surface to be obtained from the gas tar which is more lasting and more repellant of wet than plain gas tar.—Yours, &c., A SUBSCRIBER.
Rostrevor, Feb. 4, 1852.

THE WILLOW TREE.

BY ELIZA COOK.

Tree of the gloom o'erhanging the tomb;
Thou seem'st to love the churchyard sod;
Thou ever art found on the charnel ground,
Where the laughing and happy have rarely trod.
When thy branches trail to the wintry gale,
Thy wailing is sad to the hearts of men;
When the word is bright in summer's light—
'Tis only the wretched that love thee then,
The golden moth and the shining bee
Will seldom rest on the Willow Tree.

The weeping maid comes under thy shade,
Mourning her faithful lover dead;
She sings of his grave in the crystal wave,
Of his sea-weed shroud and coral bed.
A chaplet she weaves of thy downy leaves,
And twines it round her pallid brow;
She falls on her knees while she softly sighs,
“My love, my dearest, I come to thee now!”
She sits and dreams of the moaning sea,
While the night-winds creep through the Willow Tree.

The dying one will turn from the sun,
The dazzling flowers and luscious fruit,
To set his mark in thy sombre bark,
And find a couch at thy moss-clad root.
He is fading away like the twilight ray,
His cheek is pale, and his glance is dim;
But thy drooping arms, with their pensive charms,
Can yield a joy till the last for him;
And the latest words on his lips shall be,
“Oh, bury me under the Willow Tree!”

PROVINCIAL MUTUAL AND GENERAL INSURANCE COMPANY.

OFFICE,—CHURCH STREET, TORONTO.

INSURES in its MUTUAL BRANCH, Farm Property and Detached Buildings,—all extra hazardous Risks being excluded.

The PROPRIETARY BRANCH includes Fire Insurance generally, as well as Inland and Ocean Marine Insurance and Life Insurance.

WILLIAM EVANS, Jun., Agent for Montreal, will receive applications for Insurance, in writing, addressed to him at his residence, Côte St. P. ul. or left for him at the hardware store of J. Henry Evans, Esq., St. Paul street, Montreal.

AGRICULTURAL WAREHOUSE.

THE Subscriber has constantly on hand, Samples of various kinds of AGRICULTURAL IMPLEMENTS, among which will be found, Ploughs, Cultivators, Seed Sowers, Straw Cutters, Corn Shellers, Subsoil Ploughs, Vegetable Cutters, Thermometer Churns, Horse Rakes, &c. &c. Expected by the opening of the Navigation, a large assortment of *Cast Steel Spades and Shovels, Cast Steel Hay and Manure Forks, Hoes, &c., &c.*

Agent for Sale of St. Onge's *Patent Stump Extractor.*

P. S.—Any kind of Farming Implements furnished to order, on the most reasonable terms.

GEORGE HAGAR,
103, St. Paul Street

Montreal, 1st April, 1851.

IMPORTANT TO FARMERS.

THE Subscriber offers for sale the following seeds:—

- 7,000 lbs. Dutch Red Clover,
- 1,000 do. French “
- 3,000 do. Dutch White “
- 500 do. Shiromy's Purple Top Swedish Turnips,
- 500 do. East Lothian “ “ “
- 200 do. Laing's Improved “ “ “

The above varieties of Turnips warranted from Rape.

- 400 lbs. Mangle Wurzel,
- 100 do. French Sugar Beet,
- 200 do. Aberdeen Yellow Turnip,
- 200 do. White Globe Turnip,
- 200 do. Belgim White Field Carrot,
- 200 do. Attringhasor “ “
- 200 do. Long Orange “ “
- 100 do. “ Surry “ “

The Carrot Seed are the growth of Canada, from the Subscriber's Nursery Ground.

—ALSO,—

His usual supply of English and French Garden Seeds.

GEORGE SHEPHERD.

Nursery and Seedsman to the Agricultural Society of Lower Canada.

March 1st, 1852.

LOWER CANADA AGRICULTURAL SOCIETY,

Office and Library at No. 25 Notre Dame Street, Montreal,

Over the seed-store of Mr. George Shepherd, the seedman of this Society,

THE Secretary and Treasurer of the Society is in attendance daily, from ten to one o'clock.

The Library has already some of the best works on Agriculture. Also, the Transactions of the Highland and Royal Irish Agricultural Societies, the London Farmer's Magazine, the Transactions of the New York State Agricultural Society, and many other British and American Agricultural Periodicals which are regularly received. The Agricultural Journal and Transactions of the Lower Canada Agricultural Society, both in English and French are to be had at the office from the commencement in 1848, up to the present.

All communications in reference to the Agricultural Journals from the first of January, instant, to be addressed post paid to Wm. Evans, Esq., Secretary of the L. C. A. S. and Editor of the Agricultural Journals.

Members of the Lower Canada Agricultural Society are respectfully requested to pay up their annual subscriptions immediately.

WM. EVANS,

Secretary and Treasurer, L. C. A. S.

1st January, 1852.

Copies of Evans' Treatise on Agriculture, and the supplementary volumes both in English and French to be had at the office of the Society with complete files of the Lower Canada Agricultural Journal for the years 1844, 1845 and 1846.

MATTHEW MOODY,

MANUFACTURER OF

THRESHING MACHINES, REAPING MACHINES, STUMP AND STONE EXTRACTORS, ROOT CUTTERS, REVOLVING AND CAST-STEEL HORSE RAKES, PATENT CHURNS, WAGGONS, &c. &c. &c.

THE Subscriber has been employed since 1846 in manufacturing his improved **THRESHING MACHINES**, with Horse power. He was awarded the highest Prize at the Terrebonne County Exhibition after competition with many others. They have threshed and cleaned, with 2 horses, from 100 to 124 minots of Wheat per day, and from 200 to 250 of Oats, and have given universal satisfaction. He guarantees all purchasers for any recourse by Paige & Co., of Montreal, who allege having a patent for these machines, dated December, 1848! and warrants them equal to any made here or elsewhere, for efficiency and durability.

One of his Reaping Machines may be seen at Kerr's Hotel, St. Lawrence Street, price £25.

Having lately erected new and enlarged Works for the above articles, he will execute promptly all orders in his line.

Threshing Mills constantly on hand. Two second-hand Mills, in warranted order, cheap for cash.

Threshing Mills repaired, and finishing work done.

Agency in Montreal, at Lad's Foundry, Griffintown; in St. Andrews, L. C., at Mr. Henry Kempley's.

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