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## CANADIAN AGRICULTURAL JOURNAL.

VOL. II.

MONTREAL, FEBRUARY, 1845.

No. 2.

We suppose it is generally known to our Subscribers that we have petitioned the Legislature for an aid to assist us in meeting the expenses of our Journal, for the past year, and to continue it for the present year. The result of our application will also be understood by all who see the newspapers. The whole affair assumed a character which we never anticipated, and which, we conceive, was not by any means necessary to give it. Our Petition was unconnected with parties, politics, or private interest, and it is very probable that, the expense to the public, of the discussion which took place upon it, would have been sufficient to satisfy fully our expectations. We do not pretend to say that principle should be sacrificed in order to save expense, but we will say that there would be no sacrifice of principle necessary to be made by the simple consideration of our Petition. If the grounds upon which our application was made, were not generally admitted to be good, it would be quite another affair, but every man of every party will not object to the expediency of advancing, if possible, the improvement of Canadian Agriculture, and augmenting the amount and value of the produce raised from it. This was the ground of our application. It was to enable us to employ our humble efforts towards accomplishing this object that we petitioned for aid, and not to enrich ourselves. However unsuccessful we have been in our past exertions, we can truly say, that, we have devoted much of our time, thought, and money, to forward, what is admitted by all, to be desirable. We cannot take blame to ourselves for our want of success, but we can blame those who would not act upon our suggestions, or support us. We could only suggest the improvements that are required, and give the best information that we could collect, how these improvements would be effected, and what would be the probable result. We can now, with full confidence, appeal to all we have written and published, that we have not proposed any wild theories, or suggested any improvements that might not be profitably introduced. Many well paid servants may have been as unsuccessful in producing good to the public as we have been, who have had neither pay nor patronage for our services. We do not now, and never did pretend, that we represented the Agricultural class or their opinions. We endeavoured to promote the interests of Canadian Agriculturists generally, by all the means that were in our power. From having given much thought and attention to the subject, we were perfectly convinced that, for ages to come, agriculture must form the basis of Canadian prosperity,—that its products must give the means of successful commerce, and support to all other occupations; and therefore, as a member of the Canadian community, both personally and generally interested in the welfare of that community, we endeavoured to attract some attention to what was of so much consequence, and demonstrate the necessity as well as expediency of giving all possible encouragement to the improvement of husbandry, so that the soil, and industry of the people well directed, should yield a large and valuable product. This has been our unceasing object for many years, and we certainly cannot take any blame to ourselves that a better system of Agriculture has not been long ago in full and successful operation in Canada. Our motives may be suspected to have other objects than those we profess to have in view, but we trust it will only be by those who never allow any other motive to influence them but that of self-interest.

We discovered long ago, that publishing on the subject of Agriculture was not a profitable employment, in as much as we sustained a loss of two or three hundred pounds by our Treatise on Agriculture and the Supplementary Volume. We were not, however, deterred from continuing our exertions, and the support and countenance we have obtained is best known to those who have favoured us. As to Legislative aid, we have received none whatever; and we now begin to think it possible, that we may have been under an erroneous impression a great part of our lives with regard to our estimate of the importance of Agriculture to Canada. No doubt if it was really of such importance, as we conceive it to be, the Representatives of Agricultural Constituencies would have seen, long ago, the necessity of doing all that was possible and expedient to forward its improvement and prosperity. That Legislation will be the most useful for the Canadian people that will produce the largest amount of comfortable enjoyment to them; and there cannot exist a doubt, that, to secure to them the means of comfortable enjoyment will be

the true mode of making them loyal, contented, and happy. The laws we most require are such as will judiciously provide for instructing and encouraging the people in all that may be useful and profitable to them. It is unjust to accuse the Canadian farmers of French origin, with being opposed to the introduction of an improved system of husbandry until we have done all that is possible to instruct and encourage them to do so. They were very much opposed to the law regulating the construction of winter carriages, (a law which we most strenuously advocated, believing that it would prove a good law) and now the Canadian farmers are generally as much in favour of double sleighs as the old country farmers, except on roads back in the country where the law does not provide that they should be made sufficiently wide. They were also opposed to turnpike tolls, but we are satisfied, they would now wish them to be generally introduced on equitable principles. In the British Isles, it is found necessary to circulate Agricultural Journals, and use all other possible means to encourage and instruct farmers in the art of husbandry; in fact, in the mother countries, farming is made an honorable, and hence a fashionable profession,—here, on the contrary, agriculture is left to itself, and no means adopted to encourage and instruct, and the profession appears to be regarded with contempt, and undeserving any attention, by the best educated classes. We took upon ourselves to supply, in the best manner we were capable, a part of what was wanted, a Journal in the French language, solely devoted to Agriculture, which we distributed to every parish in eastern Canada. It was not our own opinions altogether which we circulated, but the best information on Agricultural improvement, upon authority that could not be questioned; and we now appeal to what we have published, whether it was calculated to be useful or not. We would further observe, that our Journal was constantly offered to any farmer better informed than ourselves, who might have been disposed to convey useful instruction or information to his brother farmers. We only endeavoured to fill up, in the best manner we could, the space in our columns that was offered to others, without any charge, who might be desirous to promote the improvement of the country. We would not have published in English had we been sufficiently acquainted with the French to publish directly in that language, because it was the farmers of French origin whom we thought most required instruction. We are not anxious to be the only medium of conveying instruction in the art of Agri-

culture to those who require it; we only wish that it should be conveyed through some channel that would be successful. The whole matter is now before the public, and we have no doubt they will decide correctly whether or not we have constantly endeavoured to excite an interest for Agricultural improvement, and have advocated the protection and encouragement of Canadian Agriculture as forcibly as we could. We did not expect by this course to obtain any particular advantages for ourselves that would not be participated in by others, nor did we dread that by augmenting production generally the value of our own produce would be diminished. Our aim was, that the produce of Agriculture should be increased as much as possible, and that the capital, skill, and industry of our farmers should have reasonable protection from foreign competition, and to public opinion we again refer how far we were able to forward these objects by our publications. We regret we did not succeed as we expected, but the fault was not with us, but with those who withheld their countenance and support when they might have given both with a certainty of success. We petitioned the Legislature for an aid to enable us to do what no other individual has attempted here; and considering that this country is altogether dependant upon her agriculture, and nine-tenths of our Representatives elected by the agricultural class, we did not anticipate the slightest opposition from any quarter to the prayer of our petition. Had objections been made upon the principle of want of merit in our publications, and their unfitness to produce the benefit which we proposed by their extensive circulation, we should make no complaint, only regret our presumption in undertaking a task we were not equal to. Under all the circumstances we cannot help coming to the conclusion, that the great majority of the House of Assembly do not think that there is any necessity to offer any instruction or encouragement to promote the improvement of Canadian Agriculture; and we feel this as a sentence of condemnation on all we have ever done to promote the interest of the class to which we belong, and our time and money actually thrown away. The objection that may be offered, that our Journal does not contain so much of useful and practical information as it might do, can easily be mended by those who have skill in agriculture, and really wish to see the country generally improving and prosperous. Our paper is also offered to the Agricultural Societies who have any information to offer that would have a tendency to advance the interests of agriculture,—and this is the chief u-

that such Societies should be organized for. If the useful knowledge they possess or acquire is only to be known in their committee rooms, they are of no benefit to general improvement. It is not thus the Agricultural Societies act in the British Isles. All the practical experience, the result of experiments, &c. is published to the world, and its usefulness not confined to the members, though the members are very numerous, and include almost the whole of the farmers. We hesitate not to say, that however despised and unsupported we have been, our exertions have been faithfully and honestly devoted to advance the best interests of our adopted country; and we say further, that no individual in Canada has given so much time and money to this object as we have done.

At the Meeting which took place at the last Smithfield Cattle Show, DR. PAYFAIR delivered two Lectures, of which the following are the outlines:—They may be as usefully applied in Canada as in England.

The learned lecturer commenced by stating that he had chosen for his subject the connection which already subsisted between practice and science. For this purpose he should refer chiefly to the common operations of the sub-soiling, ploughing, draining, the irrigation of land, the rotation of crops, &c. He trusted the period had now arrived when the mutual relation of practical and scientific men was beginning to be thoroughly understood, and there would no longer be any attempt by the former, to underrate the value of scientific investigations, or of the latter to propound their theories dictatorially. Science at present was not in a condition so as to prescribe laws for the practice of agriculture, but must content itself with investigating the abstract laws on which the art depended. On the other hand, the experience of agriculturists alone, even for a long course of years, and particularly in confined localities, must be at best unsatisfactory. For example, the colonists of Virginia rejected the system of manure pursued in this country, and grew successive crops of wheat on the same soil for 100 years, until at length the crops diminished and finally ceased to grow. Tobacco was also grown in a similar manner, as was the case to this day in Hungary, and it was but of little benefit to the cultivator to know that he had done wrong when the crops had ceased to grow. Why then, were the fields of Virginia so long fertile? Why were they now sterile? and what must be done to restore their condition? To answer these questions they must leave art, and betake themselves to science. Let them put the questions in their own case. The practice in one county might be admirably adapted for its cultivation; but if the soil were heavy, and an ignorant man were to come from another county with a light soil, he might laugh at the expensive mode of cultivation of the former as contrasted with his own, and in case of a change of residence, the cultivator of the heavy soil might find his former expense useless in his new locality. Why, then, would not the one system do on both soils? The answer could only be obtained by going to the temple of science, and consulting the oracle within. Did they not observe the alteration in all respects that had been introduced into the cultivation of land? All this was but the appli-

cation of the knowledge which science had acquired by investigation in different localities. Science could not do much alone, nor art; but both united, they could do a great deal. The first thing to be understood was the nature of the constituents found in the soils. These were silica, soda, alumina, sulphuric acid, lime, phosphoric acid, magnesia, chlorine, oxides of iron, fluorine, potash, manganese. The formation of arable land might be traced to causes in operation before the world was peopled by either plants or animals. He drew attention to this without at all diverging from his subject, because he should be able to prove that all the operations on a farm were but imitations of the means by which nature produced similar ends thousands of years ago. He would illustrate his meaning by reference to the formation and destruction of rocks by nature. The primitive rocks consisted of granite, which was composed of feldspar, quartz, and mica. The composition of these minerals at once showed that they contained every ingredient of the soil. The learned lecturer proceeded to prove this, and to describe in scientific phraseology the breaking up of these rocks by the operation of the carbonic acid in the atmosphere into earth analogous to our light sandy soils. There were three classes of soils—the aluminous, the argillaceous, and the calcareous. The preceding observations applied chiefly to the former. With this the case was different; for lime or carbonate of lime, must be held in solution by the excess of carbonic acid. There was, therefore, no reason to expect that large deposits of limestone were then formed. Indeed, the infrequency of limestone in primitive rocks was remarkable, and had led Mr. McCulloch to believe that animals might have caused the formation of all the limestones in existence. He was obliged to refuse his assent to the theory. How then would he explain the formation of these bodies? He believed that it occurred only where there was distinct evidence of organic life. In mountain limestone there were discovered large portions of marine testacea, but there were also large portions of vegetable remains; and, at all events, there must have been vegetables in proportion to the number of animals that were to subsist upon them. Marine vegetables subsisted on carbonic acid and ammonia, just as terrestrial plants did. The carbonate of lime or limestone being in solution, the plants became impregnated, and the consequence was that limestone was deposited. The learned lecturer then adverted to the infusora, and described them as performing in water the functions of the fungi on land, although standing at the opposite extremities of their respective genus. But, provident as nature was, she had much more to perform before the soil thus formed was suited for the growth of terrestrial plants. By various causes the surface of the soil became exposed, and thus nature performed as it were the operation of the subsoil plough. He would now proceed to show why they thus ransacked the past world to point out the means of improving the cultivation of the new. It was necessary that our vegetables should find in the soil a certain amount of mineral matter to enable them to take up their proper form as plants, and the experience of all ages taught that to supply this should be one of the first operations of the farmer. We were told that when Cato asked what was the best mode of cultivation, he was told—to plough; when he asked what was the second best, the answer was still to plough; and when he asked what was the third best, he was told to drain. Now, all we did when we ploughed was to follow the operation of nature by pulverising the soil. By surface ploughing we exhausted this soil of some of its ingredients, and we ought then to throw up some of the ve-

luable manure contained in the soil below upon the land. Sub-soil ploughing was, however, only suitable to certain soils, and hence it was that when it was sometimes tried it was found injurious. Mr. Pusey had stated that great benefits were derived from it on red soils. In these were locked up stores of oxygen; and when Mr. Smith produced his subsoil plough, he applied to them the key. Success depended on the admission of air, and therefore draining should always precede sub-soil ploughing. Air could not be properly admitted if the soil were wet, nor could a wet soil exercise that obstructive power which was necessary to retain food for growing vegetation. Cato was told right if his inquiry related to a light dry soil, but if to a clayey heavy soil, the answer should have been first drain and then plough. Draining was greatly neglected in England. It had been said by Mr. Chadwick that Cheshire was so wet that it was not fit for sheep; and if that were so it could not be fit for men. The sooner, therefore, a change took place the better; not for that county, but for the general community. As one proof of the importance of draining in this respect, he would mention an anecdote which had been told him by Professor Liebig. There was a prison in Prussia from which they had been accustomed to send anatomical subjects to the medical schools at the neighbouring universities. This prison was situated in marshy land, but it was subsequently drained, and now the unfortunate universities were obliged to send for subjects to other countries. Thus drainage not only conferred health, but even life to a whole community. The learned gentleman concluded by stating that his lecture this evening had been more exclusively scientific than he could have wished, but that in his next he would direct their attention to the principal causes of it.

DR. PLAYFAIR commenced by saying that in his last lecture he had endeavoured to show how the sequence of events, from the first dawn of the creation, was calculated to elucidate the theory of the practice of agriculture. They had seen how carefully nature prepared her soils for cultivation long before man devoted himself to her service. They had followed her when the sea acted as great ploughs and subsoil ploughs, and ameliorated the noxious ingredients in the rocks, and fitted those which were fertile for the purposes of vegetation. They had admired also how curiously she locked up in the soil those measures of fertility, and the manner in which she presented the key to the industry of man. They had also followed her into the high and black regions of calcareous and cretaceous rocks, and those of the old red sandstone, in which she compensated for the elevation by an admirable system of drainage, either by numerous cliffs, or a porous nature of materials, so that the water might run quickly away, and not by evaporation render the soil cold, by which admirable examples she taught them how to improve the climate of their district, to hasten and increase the amount of vegetation, and thus obtain the greatest return for the labours which they expended on its cultivation. To-morrow they had also to travel over a wide field, in which they would see the same beautiful adaptation of the means to the end. The theory of ploughing and draining had already been brought before them, and the nature of fallow had also been partly explained in the consideration of those operations. Having exhausted soils by frequent cropping, all the silicate of potash was removed, which was essential to the growth of similar crops. To liberate again the necessary quantity, the ground was therefore to be exposed to the action of the air, and when enough was again liberated to be available for a crop, the ground was again in a con-

dition to support vegetation without manure. But although the soil might be exhausted of one ingredient, it still might contain other constituents adapted for other kinds of plants, by growing which their purpose might be as well fulfilled as by a naked fallow. As this was a subject of great importance, he should endeavour to explain to them the theories on the subject. Professor Low told them that to receive all the benefits of an efficient fallow it might be necessary to plough the land from four to eight times. Now, this must be a great expense, and in many parts the system was entirely dispensed with. The theory of the new practice would be easily understood by reference to the composition of the mineral ingredients in plants. The mineral ingredients of plants were as follows:—Bases—Potash, soda, lime, magnesia, peroxide of iron, oxide of magnesia, alumina. Acids or Radicals—Silica acid, phosphoric acid, sulphuric acid, carbonic acid, chlorine, iodine, bromine. Plants generally contained most of these ingredients, but in very different proportions. The silica plants were wheat straw, barley, rye straw; the lime plants were tobacco (Havanah and Dutch), pea straw, potato haulms, sainfoins, and meadow clover; the potash plants were maize straw, turnips, beet-roots, potatoes (taberose), Helianthus tuberosus, sunflower. Any table, however, showing the proportions of the ingredients of each plant could only be a mere approximation, for classification had been shown to be inadmissible, as being contrary to a beautiful law pointed out by Professor Liebig, that certain bases might replace each other, according to the law of equivalents. Instead, however, of scientific reasonings on this subject, he could, perhaps, occupy their time more usefully in testing the theory in relation to their own practice. Of course the rotation of crops must vary according to the composition of the soil, and this variation would be better understood by reference to the formation of the rocks, as laid down in the former lecture. They saw that granite was composed of silicate of potash, soda, and alumina, and occasionally with lime, magnesia, or phosphates, and therefore it was found that the farmer also grew upon it the silica plants, or wheat, oats, or barley. Clay slate and graywacke, were merely degraded granite, but with still less lime, and accordingly they found two potash plants in general cultivation on this soil—oats and turnips. Red sandstone was much richer than either, being better manured with limestone and with phosphates, the relics of extinct animals, and with silicate of potash also in abundance, and there also they found potash plants principally preferred. They then passed the boundary, and came to the deposits of limestone, the great mass of which was under pasture. The true coal formation best suited the potash and silicious plants, and the magnesian limestone was peculiarly favorable for plants containing much magnesia, as potatoes, wheat, barley, &c. Further on was the ploughed-up strata now deposited in the new red sandstone, and forming an admirable soil adapted for the cultivation of both potash, soda, and silica plants. The beautiful result of this retrospect was to show that the farmer's experience had taught him the best plans which the investigations of science pointed out as those which should be adopted in the respective localities; and as they proceeded further, they would observe still more closely the exact agreement between science and practice. He would first take the four years' rotation, or the Norfolk course, which was very universal. It usually began with turnip, well manured, followed by a corn crop, then by artificial grasses, and concluded by another crop of corn. The manure was generally rich in silicate of potash and phosphate, which gradually became

more fitted for the plants by exposure to the atmosphere. During this interval they generally grew turnips or a plant requiring little more than a fourth the quantity of phosphates required by a corn crop, and which, taking up no silica, and but little lime or magnesia, only removed from the soil or the manure potash or soda. If they then caused sheep to eat the turnips off the land, the sheep restored in their excrements all the potash which the turnips contained and probably a portion of the small amount of phosphates which they had taken up. During the growth of this plant the soil had been further disintegrating, and thus an increased quantity of silicate of potash became available to the corn crop, for which an abundance was required. If they then grew corn they found the soil but little exhausted by the previous plant; but as soon as they removed their cereal crop they removed at the same time from each acre about 70 lbs. of alkalis and 60 lbs. of phosphates. The corn having thus exhausted the soluble silica and phosphates, they grew a green plant, and having before had two which required a considerable amount of potash they now resorted to one containing lime (artificial grasses), and by the lime consumed, the action of the air upon the soil again liberated enough silica and phosphates to grow a new crop of corn; barley, when there was lime in the land; or oats and wheat when lime was deficient. This was the general system, though, of course, it varied with localities and circumstances. Mr. J. C. Morton had obligingly furnished him with a table of the rotation of crops on particular geological formations, the general result of which was, that in clays or soils rich in potash the crops intermediate with the corn were plants taking much potash, but little silica; while the system on the calcareous soils was to alternate them with plants more fond of lime than of potash. When this class of soils was very poor in silicate of potash, they found sainfoin much cultivated and preferred to clover, as it contained only one-half the amount of silica and a small proportion only of potash. From this it would be perceived that the first object of rotation was to liberate some ingredient, either contained in a small quantity in the soil, or set free so slowly as to be insufficient for two successive crops of the same plant. Rotation, therefore, was not a means of improving the soil, as farmers generally supposed. It was only a means of delaying its exhaustion, and of enabling plants more completely to rob it of its treasures. Other processes produce a like result—as for example the paring and burning of land, which besides destroying weeds and organic matter, which might be injurious, completely altered the nature of the soil, plastic clays becoming porous, and admitting the oxygen which formerly was unable to liberate the nutritious ingredients of the soil; but sandy soils being reduced by it to a *caput mortuum*. The same evils did not, however, attend the burning of chalk as of limestone, as the liberation by it of a certain amount of silica of potash afforded new vigour to the lime-loving plants which were afterwards cultivated upon them. The next analogous process in farming was liming the land, by which the silica, the potash, and the phosphates were liberated from the soil and administered to the wants of vegetation. But by this operation no equivalent was furnished the land for that removed by the crops, and therefore the continuance of this system was merely a continuance of a rapid system of exhausting the soil. It might, however, not unfrequently supply an absent constituent of the soil, and there was no manure sometimes more beneficially used, or sometimes more disgracefully abused, than this. All these processes had merely one object in view, the rendering soluble the

nutritious ingredients of the soil, not the supply of materials which the soil might want. There were two other operations in this class, the use of common salt and irrigation. The latter process was of three kinds, which he would call true irrigation, warping, and liquid manuring. The former, or irrigation by pure water, played the same part, but more actively, as a fallow; and for this reason, the land should be well drained that the water might percolate the soil, and be renewed by water from which the air had not been excluded. Under some circumstances, irrigating waters seemed to act as a direct manure. The other two kinds and their effects were too well known to require especial notice. Hitherto he had considered only those operations which made the soil itself available for plants, but the great proportion of our soil was so impoverished, that it could no longer yield within a year all the necessary materials for crops. The ingredients generally deficient were the phosphates, especially in lands long devoted to arable culture. Now, how must they proceed to return the soil to its original fertility? Animals eat the vegetables which you have grown, these turn part of the organic matter of which they consist, and ultimately make it resort to the original form from which it sprung—carbonic acid, ammonia, and water. But with these we take little interest, for they went again to the great magazine of food, the atmosphere, to be extracted from thence as before. But the valuable mineral treasures of the soil could not assume the form of air, and therefore they remained, the ashes of the consumer's food, and were voided in the solid and liquid excrements. If these were carefully collected and restored to the soil, it must be preserved in its unimpaired state; for the stem and other parts containing much valuable silica of potash was also restored to the soil, either by not removing it from the field or after it had served as litter for cattle. From 10 acres of corn there was removed every year more than 6,000 lbs. of alumina, more than 3,000 lbs. of silica, lime, and magnesia, and more than 13,000 lbs. of available silica; and unless this was replaced, it would be impossible plants should grow. Now, the excrements of animals must contain the food they eat, and therefore was best adapted for the growth of the same food. The best manure for plants was always found to be that of the animals which fed upon them. It was an important fact that human nature was wanting in silica of potash, which however, could be obtained very cheap at the manufacturers, and in nothing else. It was, therefore, among the most valuable of manures; and it was incredibly absurd that it should be permitted to run down and waste in the public sewers. He estimated the loss in this respect, in the metropolis alone, to be not less than 1,000,000l. annually. Very important evidence on this point would be found in the report of the Health of Town Commissioners. He wished here, also, to say a word about the economy of food. If a person lived on potatoes, to get one hundred pounds of the gluten, in which consisted the nutriment, it would cost 2l. 14s.; whereas they would get the same amount from peas at the cost of only 1l. 13s. Potatoes, therefore, could not be considered as cheap food; but peas and potatoes together would afford an extremely cheap nutriment. Dr. Buckland has shown that peas and beans were much more used in former times than now. The learned lecturer then proceeded to mention the relative degrees of nutriment in the several plants which are generally used for food; and concluded his lecture by saying he had now endeavoured to convince them of the assistance which science and practice had rendered each other. He had

also endeavoured to give a general idea of the state of some portions of science in relation to agriculture, and to point out to them certain means by which they might preserve or restore the capacity of the soil. Whether he had done so successively or not, it was for them to decide; and he hoped they would do so leniently. The learned gentleman then sat down amid much applause.

#### AMERICAN PROVISIONS, &c., OF 1844.

We have the pleasure of laying before our readers the Circular of Messrs. J. and C. Kirkpatrick, a house most extensively engaged in Liverpool in this trade:—

“The result of the trade with America during the past year in provisions, and other articles of modern import, warrants us in speaking with still more confidence of its growing importance; for while the aggregate imports show a considerable excess over those of the previous year, the real advance which the trade has made has been much greater and more encouraging in other respects than the mere increase in imports would evidence. In the previous years large shipments of various articles were made in complete ignorance of the qualities suited to the English markets, and which resulted generally in loss to the shippers; whereas the operations of the past year being regulated by the known wants of our market and the guidance of past experience, have not only been attended with profit to those concerned, but have served also to place the trade on a more safe and permanent footing. The position of our market too in regard of stock, presents a favorable contrast to the preceding year, there being no accumulation of old and inferior parcels to interfere with imports of the new season—thus, the stock of the following articles on the 31st December, 1844, was only, of Beef, equal to 3,427 tierces; Pork, 3,000 barrels; Lard, 100 tons; and Cheese, 160 tons—against 6,080 tierces beef, 860 barrels pork, 696 tons lard, and 285 tons cheese, on the same date 1843, so that future arrivals will be met at once by the current demand as they come on the market. Under these circumstances the prospects for a good and extending trade are more favorable than they have been at any former period since it opened.

“In the past month the arrivals of all produce to our port have been unusually small, owing to the uninterrupted continuance of easterly winds for the last few weeks. Stocks are, in consequence, very low, which joined to the usual disposition evinced by buyers to avoid purchases as much as possible, at the close of the year, has led to a restricted business in most of the articles which we quote.

“In beef the transactions have been few, for want of stock to operate on—the whole quantity of stock reported above, consisting of inferior and unsuitable parcels. New is consequently much wanted, the few parcels that have arrived so far having met with immediate sale from the quay, at 72s. 6d. for ‘prime mess,’ while 80s. was obtained for a small shipment of ‘family’ beef. Equal rates will be secured for all the early arrivals of prime quality; and though some reduction will take place as supplies increase, yet there is a prospect of a higher range of prices being maintained throughout the whole season than were current last year, while the absence of Irish from the market will secure a more steady and continuous, as well as a more extensive demand. The quotations above are still given for old. We have no change to notice in the value of old pork, which goes on slowly within the range of our quotations, while Irish continues, to realise equally high rates as at the date of our last advices.

A few parcels of new American have arrived, all of prime quality, and showing a decided improvement on any former imports, one of them being superior to the usual brands of ‘prime mess,’ and which was sold at the quay at 61s. A higher rate will be obtained for parcels of similar quality arriving in the course of this month, and a continued supply of such quality would soon place American on an equal level with Irish in regard to price. The result of these late shipments proves the correctness of the opinion we have already expressed, that American cures possess advantages, both as regards the quality of their pork and its cheapness of price, which, if rightly improved, will enable them to furnish the principal portion of the pork required by the English markets, as they are already likely to do with respect to beef. There being a considerable demand for pork in this market, which can be much increased by continuous supplies of prime qualities, at moderate rates, we would strongly recommend the trade to the notice of all parties who are interested in its extension.

“Lard has continued to meet a ready sale at our quotations, which do not vary from those of last month, except the purest leaf in kegs, on which an advance of 2s. per cwt. has been obtained. In the early part of the month there was some advance made on the finest qualities in barrels also, but which was again lost as supplies increased. The demand for such will however continue good—the high value of butter having thrown consumption more upon lard, and the supply of Irish being unequal to the demand, a process of bleaching American and preparing it for culinary purposes has been discovered, which may lead to its extensive substitution for Irish. The middling and inferior sorts, suitable for manufacturing purposes, are already at their extreme value, relatively with tallow, and are not likely therefore to alter materially from present rates. The stock, it will be observed, is light, as compared with the commencement of last year. The market for tallow has been dull, throughout the month, and has declined 6d. to 9d. per cwt.; and as the home supply is found to be considerably in excess of that of former years, it is not probable that any advance will now take place on present rates, especially as the demand usually slackens after Christmas. No further decline is looked for, the market being now steady.

CANADIAN WHEAT.—We last week drew the attention of our readers to the enormous quantity of wheat stated to have been exported from Canada up to the 28th of October in the present year 1844. Since our last publication we have taken some pains to ascertain the actual quantity imported from Canada into this kingdom, for which purpose we have examined the official weekly returns of the imports from the 1st of Feb., 1844, to the 7th Nov., the result of which search has been that we find that the imports from Canada at the following ports, viz., London, Liverpool, Hull, Newcastle, Bristol, Gloucester, Plymouth, Leith, Glasgow, Dundee, and Perth, have amounted to no less than 218,135 quarters, equal to 43,627 loads of wheat. Now, when we consider the present low state of British agriculture, we cannot do otherwise than wonder at the policy of those who appear in these days to fancy that the only class of persons they ought to protect are the manufacturers, while at the same time they seem to take delight in persecuting and impoverishing the agriculturist. They have ground down the profits of the farmer by truckling to the Free Traders, who still continue to cry out for cheap bread, even though it should ruin the whole of the agricultu-

ral body, who merely ask for remunerating prices; and the Government, instead of encouraging the poor hard-working British farmer, pass Free Trade measures, such as this outrageous Canada Corn Bill. We do hope and trust that the Government may yet amend their error, ere it be too late.—*Bristol Gaz.*

## The Canadian Agricultural Journal.

MONTREAL, FEBRUARY, 1845.

We have resumed the publication of our Journal, and we beg that those who are favourable to this mode of conveying information on Agricultural subjects, will give us any assistance in their power in the way of practical experiments and their results. We have constantly offered our columns to any who would be disposed to give the advantage of their experience for the instruction of others in the art of Agriculture. The selections we make from British Agricultural Newspapers, are such only as, we conceive, would be useful to farmers here; and for our own part, we are quite as well disposed to learn from our fellow subjects and brother farmers in the British Isles, any thing that is useful, as from any other quarter. Great stress is laid upon the difference of climate between Canada and England, and that the system of Agriculture of the latter country is not suited for us in Canada. We, however, take leave to say, that the more closely we adopt and follow the English system of Agriculture in Canada, the better and more profitable will be our Agriculture to us. Of course, there must be a material difference in consequence of climate, and other circumstances, between the whole system of English Agriculture and that of Canada; but, we trust we understand where that difference exists, and will not recommend any part of it that is impracticable in Canada; for instance,—we shall not recommend them to plough land in Canada when the land has two or three feet of snow upon it, though they may execute that work in England at the same period; nor shall we advise the making of drains when the soil is frozen to the depth of two, three, or four feet; neither shall we say that it would be prudent to sow as much turnips here in proportion to the land occupied by a farmer as is generally done in England. We cannot commence sowing and planting here in March and April, and sometimes in February, as in the British Isles; but we are right in recommending the same preparation of the soil as in England, for every crop we grow, if we desire to grow good crops. We shall not tell the farmers here, that they should

have their cattle and sheep out in the fields during the winter when they have two or three feet of snow upon them, though in the British Isles, cattle and sheep may be well kept in the open fields at the same time. We shall, however, tell them that the same mode of keeping cattle and sheep in summer in the mother country would be the best for us here, and that in winter, when cattle and sheep are sheltered in that country, and stall fed, the very same mode of doing so would be most profitable for us, with the exception of the extensive use of turnips for fattening. The management of the dairy we say, should be exact, with us what it is in the best managed English dairies; in fact, as we observed frequently, the more it is possible for us to adopt the English system of Agriculture, and we may come very near it, the better and more profitable will be our farming. We do not wish to tell the people here, "they have, is true, a most judicious system of Agriculture in full operation in England, and this system produces excellent crops, fine animals, and the best dairy produce, but unfortunately, Canada is a land of short summers and long winters, and you need not attempt to introduce any perfect system of Agriculture,—it is your hard lot, that you are doomed, by the severity of your climate, to be unable to cultivate your land properly, and consequently have only scanty crops, full of weeds, cattle and sheep of inferior description, and dairy produce of little value." Our Journal would be worthless indeed if we were to tell the farmers this, or if we believed that it would be impossible to introduce a system of Agriculture that would be anything like the English system. We know that Canada prices for produce will not remunerate a large expenditure in Agriculture, but we also know, that a great improvement in the entire system of Canadian Agriculture is necessary and possible, and might be made profitable, if judiciously introduced, and executed with skill and care. To those who are in reality friendly disposed to the improvement and prosperity of Canadian Agriculture, we are convinced the task will not appear hopeless or impossible of attempting the required improvement. It is only those who care not one straw about the Canadian farmers or their prosperity, who pretend to think (if they do think) that it is useless to attempt to induce the Canadian farmer to improve his system of Agriculture,—that he is ignorant, not able to read or understand anything which might be published for his information, that we must wait patiently another half century before we attempt to improve their condition, or



make them any better of our connection with them. This is the language of those who are not Agriculturists, and care not for its interests. It is a most fatal mistake to neglect what is of such vast importance to the Canadian community. We take leave to tell those who are friendly to Agriculture, as well as those who are not, that so long as they put off the adoption of such measures as are necessary to introduce a better system of Agriculture throughout Canada generally, they sacrifice the interests of the country and the people, and keep the country poor when it might be rich, and that this operates injuriously upon every class and profession of the Canadian community.

In our last files of English newspapers we have observed reports of Agricultural Meetings in that country, where the Speakers have in strong language condemned the law which allows our produce into England on favourable terms, and further, that Canada is a great expense to Britain, and that the farmers of England have to pay this expense for the farmers of Canada, who have neither tithes nor taxes to pay. This may appear to all who do not inquire into the real facts of the case, to be very unjust towards the English farmers. We, however, take upon us to say, that the matter is not correctly stated. In the first place, we import English manufactures to the full extent of our exports to England, and the Colonial Duties upon these imports are not so high as those upon our exports to England. In the second place, we would observe, that almost all the expenditure of the English Government in Canada, goes back to England in payment of British manufactures; scarcely any of this money remains here many months; and, thirdly, we conceive that the inhabitants of Canada pay a portion of English taxation, in as much, as they purchase and pay for British goods, which comes to them charged with all the cost of production, including taxes paid by the producers and manufacturers. This is a fact lost sight of by most persons, but it is not the less certain nevertheless. We maintain that the trade of England with her Colonies is a most profitable one, and particularly with Canada. This trade is chiefly in British manufactures, transported in British ships, and the produce taken in exchange from Canada (with the exception of flour) is raw produce and exported in these same ships. Hence, the carrying trade, in both ways, is in the hands of English merchants, who have all the profits. The produce of Canada, so far from injuring the British people, we are cer-

tain, the greater its amount and value, so much the more beneficial it would be to British interests, in as much, as it would afford the means of purchasing the products of English industry. If England was to be constantly losing her capital, and to be so injuriously affected by her National Debt, as some men insinuate, she and her people would have been bankrupt long since, but with this great amount of debt, (and it certainly is a large amount in figures,) and with all the immense expense of her Colonies, she and her people are becoming more rich and powerful every day. She has no mines of silver or gold that would give her riches, and therefore, she has the happy method of drawing back to herself the capital she expends, together with a high interest. The most clever man in existence cannot show that we are mistaken in our view of this matter, and if any will attempt to do so, we promise to endeavour to prove our proposition, which is, that England and her people, receive back with a high interest or profit, all her expenditure in this Province of her Empire. We do not pretend to say, that this is an injury to us; on the contrary, we think this expenditure very beneficial to us, but what we deny is, *that we are* injuriously burdensome to the mother country or to her people. All the produce of our industry, with the exception of the food we consume, and a part of our clothing, we employ directly, and indirectly, in purchasing the produce of British industry, and hence British expenditure here, sets in motion Canadian industry, the produce of which goes back to Britain in payment of her goods and manufactures. The expenses of the troops here is another matter that appears not to be duly considered. The half of this expense, and perhaps more, consists of what is produced in Britain, and paid for there as clothing, arms, &c. There is another consideration. A part of the army may as well be kept in Canada, and may be as cheaply kept there, as in any other British possession abroad. The army here is as efficiently placed and employed to support the power and influence of the Empire of Britain, as it could be in any other country of her wide Dominions. From all these considerations we conceive, that we are unjustly charged with being injuriously burdensome to our father land or to our fellow subjects therein, and we deny that we enjoy any unfair advantage by the Tariff of Sir Robert Peel, though that Tariff might do us much good, if we had due protection here from the importation of Foreign produce. We have always thought that the landed interests of Britain had to sustain the chief burden

of taxation, but that is a matter that must be arranged between them and the manufacturers. If they pay taxes in England, they expend them therein, and what is paid in taxes is expended on the products of the country, and thus again sets in motion the industry of the people. The country on earth who has the least amount of National Debt, would be glad to exchange circumstances with England, and take her as she is. The wealth of Britain may be very unequally distributed, and we regret it is so, but that she is wealthy and powerful above all other nations, notwithstanding her Debt, is a fact well understood throughout the world.

By a reference to the prices of Canadian produce in the English markets will be seen what a vast difference there is between the prices obtained there, and what the Canadian farmer or lumber merchant obtains for the same articles here. In the article of timber of all descriptions, in particular, the English price is two or three times as great as it sells for here. The consumer of course pays this, but he pays it to an English merchant who expends his profits in England, and this increase of price never goes back to the Canadian producer, but to the ship owner, and several other parties who are resident in Britain. It is the same case in almost all articles of Canadian agricultural produce. If it be of good quality, it will sell in Britain for double what the farmer gets here. There are exceptions occasionally; when produce is not properly prepared, or carefully shipped, but this is not the farmer's fault. If the merchant sends home wheat or flour that is not in a good state, on the arrival at the place of its destination, it is his, the millers' and inspector's fault. If good beef, butter, and cheese, are not sent home, it is also the exporters fault for buying any but what is good, and if only beef of sufficient fatness were to be bought for exportation, it would be made so by the farmer, and it would be so with dairy produce. The difference between English prices, and those of Canada is sufficient to make up for rents, tithes, and taxes. Hay sells in London for nearly three times the price in Montreal; Irish butter, of first quality, sells for nearly one shilling sterling the pound; hams and bacon, for sixpence the pound, American cheese, about sixpence the pound. These are the prices of the present period, when the English farmers make loud complaints of low prices.

In selecting matter for this Journal, we endeavour to select only what we conceive may be practically useful to agriculturists. We might fill up a paper

of ten times the size of this if we would copy the agricultural information we have in our exchange papers; but we find that a large portion of the contents of these papers are not of much interest to the Canadian farmers. For the credit and respectability of our Journal, subscribers may be assured, we shall copy all articles that will be deserving their attention. It is not invariably the large size of a Journal that will make it more practically useful than one of half the size might be. Any large sheet may be filled up with matter that possesses very little interest or instruction for the agriculturist. If our Journal should not be equal in size to other periodicals, it shall be our endeavour to make it equal to any in interest and usefulness. No exaggerated statements, or unpractical experiments shall be copied. We may occasionally give insertion to Agricultural information that cannot be practical or profitably followed by all farmers, but even such articles may contain information that may be useful to some farmers more advanced in the science of Agriculture, and more fortunate in the possession of capital than others. Our aim is to promote the profitable improvement of Canadian husbandry; and we shall be most careful that our Journal shall contain only what is calculated to forward our object with farmers in all situations and circumstances. We must certainly make a very bad use of the advantages we possess in receiving all the Agricultural publications that are worth having, if we cannot select from them all, in the course of a year, the value of one dollar to a subscriber, however perfect his knowledge of the science and practice of Agriculture. We tell them plainly that we can do this, though not one line of our own composition was entitled to the slightest notice. We do not desire any thanks for our humble endeavours to promote the welfare, and obtain that consideration for the interests of the class to which we belong; that has been for many years our unceasing object. We have done only what we conceived our duty, and whatever may have been our success, our time and exertions were unpaid for. It is easy to attribute motives to others for every thing they do if they happen go out of the common track. We profess that our object has been, and is now to promote the improvement of Agriculture where it is most required, and if this be desirable, we would expect support from all who think it so, and most of all, from those who are good farmers, and who are so because they know the advantage of a good system of husbandry. Upon such individuals, we would say, there is an obligation to give counten-

tenance and support to any measure that would be likely to extend that advantage to others which they may owe chiefly to the situation of the place of their birth, and other fortunate circumstances. We would further observe, that, as a matter of course, the control and management of Agricultural Societies are in the hands of our best farmers, it follows, that while the encouragement of premiums are given only on choice farm stock, these premiums will be obtained by the best farmers, who require no encouragement to practice a good system of Agriculture. Now, we conceive, that, to send instruction to the farmers in the remotest parts of the country, who never hear or take any interest in our cattle shows, how they should best cultivate their lands to raise good crops, would produce much more of general improvement where it is most required, than to give premiums at cattle shows; and there cannot exist a doubt that those who take the management of Agricultural Societies assume a responsibility that makes it imperative upon them to apply the means placed at their disposal, in the most judicious manner to forward the object for which the money is granted, namely, for the encouragement of an improved system of husbandry where most required. Good cattle will be sure to follow a good system of Agriculture and abundant crops; but we never can have them generally, previous to the general establishment of an improved system of Agriculture. We do not pretend to say that our Journal would be the best means of conveying instruction to the Canadian farmers, but until a better means can be provided it might answer the purpose very well. All we desire is, that if it is expedient to promote Agricultural improvement in Canada, that the means most likely to promote it should be at once adopted. We care not who be the instruments, but shall sincerely rejoice to see accomplished what we have so long employed our humble exertions to promote. Our connection with the first Agricultural country on earth should ensure us an improving and prosperous Agriculture, if something was not wrong that prevented it. We have tried for many years the effects of Agricultural Societies, managed as they are at present, to produce general improved husbandry, but they undoubtedly have not answered the purposes. Let us now try other means, by sending instruction to the people under the sanction and approval of a Board of Agriculture, that would possess the confidence of the Government and people. If this matter was one of party politics, or on which there could exist any difference of opinion, we should not so long

continue to advocate it; but convinced as we were, that it was a subject that, one time or other, would force itself upon the public notice, we persevered, and confidently hoped that the time was arrived when the Government and Legislature would take up the subject in earnest, and by so doing, give proof to the people that they considered the improvement of Agriculture a matter of vast importance to Canada. This would be productive of more good than is generally imagined. We, however, regret to say, that notwithstanding all experience of the necessity of Agricultural improvement, which is as manifest as the sun at noon day, it has not induced the Government or Legislature to introduce any new or effectual measures for the improvement of our Agriculture, except such as have already been long tried and signally failed, and must always fail.

They have lately obtained a general Drainage Law in Ireland, by which the obstructions in rivers may be removed, and great water courses constructed when necessary for the more perfect draining of the land in cultivation, as well as of the waste land capable of improvement. We require a similar Law in Canada to drain sufficiently. The country here is generally level, and it is necessary that all obstructions should be removed from rivers that form our main drains. Where a country is flat, the smallest obstruction in water courses or drains will greatly impede the discharge of water. Water will not run without some fall, and it will discharge itself fast or slow, in proportion to the fall it may have; small drains require greater fall than large ones, and covered drains more fall than open ones. The drainage of the country is perfectly possible, and easy, compared to some countries; but there must be large water courses made where they are not naturally, and where they may be naturally, obstructions if they injuriously exist, have to be removed. The first requisite for sufficient draining, is to provide main discharges sufficiently deep, and having an unobstructed current to carry away the waters from the lands and smaller drains. These main drains or water courses may in some cases require a large expenditure in the first instance, and more than farmers can afford to expend. We would propose a Law similar to that of Ireland, where the money is lent on security of the land that is improved in value by the expenditure. This is a fair and equitable principle. We think some law to meet this difficulty is necessary, because at present, improvement is greatly retarded, and in fact,

often prevented altogether where these works can only be executed by the joint labour of farmers, who seldom unite properly in their exertions to accomplish the work: hence, many farmers who would be disposed to drain and improve their lands, are prevented from doing so in consequence of want of united exertion. No man will be disposed to go to work to benefit others, while they hold back until the work is done, and then would be ready to reap the benefit of the improvement that was effected, without contributing anything towards it. We do not presume to say what the law should be, but we can say most decidedly, that some law is necessary, that when it would be decided by competent authority that a main water course was necessary to be made or improved, the work should be done at once, and all those who would participate in the benefit to be derived from it obliged to pay in proportion to that benefit. There might be funds obtained for such works, if the improvement and lands were rendered accountable security as they are in Ireland. There would be no difficulty of finding precedents to act upon for a new law, and we would have the further advantage of experience to guide us by what has resulted from these laws in the British Isles. There is not any improvement more essential in Canada than the more perfect drainage of our occupied lands. All attempts at profitable cultivation and the raising of good crops will be in vain on soil not sufficiently drained. Persons may imagine that the soil is sufficiently dry if the surface is so, but this is a great mistake; the soil cannot be in a good state for the production of a good crop unless it is loose and pulverised to a sufficient depth, and this never can be the case in wet or damp soil. Soil, if ploughed or sown when not dry, may subsequently become dry certainly, but at the same time, it becomes hard, and requires to be ploughed and opened again before it is in a fit state to produce a good crop. Lands are not managed here as they are in England, and until they are cultivated something like as they are there, we shall not have, and cannot expect so good crops as they have.

At the last Christmas market in Smithfield, South Down sheep were sold for £5 each, and weighed 160lbs each, and another large breed weighed 240 lbs. each, and sold for £6 each. At the same market, some Hereford and Sussex cattle weighed each 250 stone of 8 lb. to the stone, and were sold for £50 to £60 each. The same weight of beef or mutton would not sell in Montreal for half the pri-

ces obtained in London. We have seen in the Montreal market this winter, sheep weighing 100 lbs. the carcase, and certainly sufficiently, if not over fat, and these sheep were sold by the farmer for 35s currency, not 28s. sterling. It is not matter of surprise, therefore, that farming is not very profitable in Canada. This is the case with the Canadian Agriculturist, while almost every article which he finds necessary to purchase from the merchant or tradesman here, are much higher than in England. Loud complaints are made against the farmers, and they are most unjustly accused of a disposition to monopoly and high prices, but it must be only by men, who care not who or how many may sink, if themselves can swim.

Canada is not worth the having if not able to produce three times the quantity she does at present, and we care not who may differ with us in opinion, when we say, that no man can be a true friend to this country, who would oppose any judicious measures that would be possible to adopt for the instruction and encouragement of farmers, to introduce the most approved and profitable system of Agriculture. If our lands are not fit for profitable cultivation, and that we must resort to a Foreign State for the necessaries of life, while we neglect to improve our own lands, let us at once give up these lands to go back to their original forest state, and go to the country that we must now obtain our supplies from. We hear of and we know the unprofitableness of farming here, but with the natural advantages we possess, and our connection with Britain, farming would not be so unprofitable, unless something was wrong. That there have been many things to check and discourage our farmers here, there does not exist a doubt, but whether our destinies have now got into the hands of those who may act more favourably towards the Agricultural interests, time alone will prove. The Agricultural class in Canada, though not in possession of a large floating money capital, which give other classes so great an advantage, must, nevertheless, at a distant period obtain their due influence, and such an influence as will be irresistible. They are entitled to this influence, and it is the want of education alone that keeps them back. When they are more generally, and usefully educated, they will understand their own interests better, and also, the disposition and fitness of those to whom they will intrust the protection of these interests.

We perceive by late reports of Agricultural meetings in Ireland, that the Flax Improvement

Society are encouraging a very improved and profitable cultivation and management of flax. It is stated at some of their meetings, that from twenty to twenty-five pounds sterling is realized as profit over all expenses per Irish acre of flax, and in some cases they go so far as to say, the profit upon an acre is three times that amount. They find the Russian flax-seed imported from Riga, to be the best for sowing in Ireland, and we are certain that seed from the same place would answer best in Canada. They have learned the Belgian mode of scutching by hand, and it only costs one shilling per stone of clean flax, to prepare it in this way. Young persons have been sent to Belgium to be instructed in the management of flax, and they now give instructions in Ireland. It is said that six or seven millions sterling is annually paid in the British Isles, for foreign flax and hemp, and certainly Canada might take a large share of this trade. We are persuaded that this country is as favourable for the production of flax and hemp as any part of the globe, but we never have seen one acre of land prepared properly here for the production of either plant. It is greatly to be regretted that we should neglect to make a proper use of the advantages that are in our power. We might cultivate the plants to a great extent, by giving instruction and encouragement, and export a large amount of value annually from them in seed and fibre.

To the Agricultural Societies in Canada who desire to see the general improvement and prosperity of the country, we appeal on the present occasion for their support. Our object is the same as theirs, and they shall have our best exertions in co-operation with them to produce the good for which they organize a Society. We offer them the means of conveying information, instruction, and encouragement, and our columns are open to the best information that shall be offered to us. We want the support and countenance of Agricultural Societies, and we promise them that our Journal shall be useful in proportion to the support we receive. We shall send copies of the January Number with this, to all the Agricultural Societies that are known to us, and shall be happy to receive their commands for any number of fyles of last year, which we shall furnish at a low price. An early application is requested.

Though we have said more than we would wish on the present occasion, of ourselves and of our Journal, yet we must beg our subscribers will ex-

cuse us for making a few further observations that we find necessary, in consequence of circumstances that have come to our knowledge. We promise them, we shall not again trespass upon their patience in this way. When we published our Journal in the French language, it was not for persons who could not read it, but for those who could read and understand it. Several years ago the country was at the expense of partly providing for about 400 public schools, for educating chiefly the rural population, and if this number of schools alone, has not educated a sufficient number of persons in Lower Canada to read the number of copies of our Journal which we publish, the money which was given from the Provincial Revenue for their support must indeed have been grossly misapplied. We are aware of the fact, and regret it, that the agricultural class are not generally or sufficiently educated, but we will not believe that there are not many more farmers in the country of French origin who are educated, or have members of their families educated, than would be sufficient to take three times the number of copies of our Journal that we printed. Our Journal is said to be useless for conveying instruction to those who could not read it, though instruction is proposed to be imparted to the people on the same subject, by printed papers from another source. Some persons will never admit that anything useful can come from any one but themselves, and this is too generally the case in Canada. We are perfectly aware of the prejudice that has been attempted to be created against our Journal, and from a quarter we least expected. Our Treatise on Agriculture was honoured so far by the Government and Legislature of Canada, as to grant a sum of money for translating and publishing it in the French language, for distribution throughout the country. If they supposed that persons could not be found amongst farmers who would be able to read it, it would have been an unwise appropriation of the public money to such a purpose; but they did make it, and without a dissenting voice in either House. We have now determined to continue the Journal, having found a gentleman at Quebec, Mr. Aubin, who undertakes to translate and publish it at his own risk for this year; the English copy being published, as usual, at Montreal. Our Journal may readily be found fault with, particularly by those who would not be competent themselves to produce so useful a publication; but for the last year, we fear not to submit it in competition with any Agricultural Journal in North America, so far as its contents.

We take upon us to say, that the selections, at least, are unexceptionable, and if our own articles are objectionable, they certainly should not be so to farmers, whose interests they have constantly advocated. If we were supported by them in the same degree as we have honestly endeavoured to promote their interests and prosperity, and to increase their influence, we should not have occasion to apply to the Legislature for aid. It has been our unceasing endeavour to benefit the agricultural class in Canada, and they best know what return they have made us.

The following article we copy from a Scotch Agricultural Report. It is so far interesting, as it shows what efforts are being made in the British Isles to advance the improvement of Agriculture, and augment the produce of the soil. What a difference between their anxiety to procure manure from the far distant islands of the ocean, and our own, where in Montreal so vast a quantity of good manure is thrown into the St. Laurence, and the street manure applied to fill up roads and low places in the city, while the lands in the neighbourhood are so much in want of manure.

Guano was applied to a considerable extent in this district last season for grain crops; and it is believed that, in all cases, the additional quantity of grain produced will give a profitable return for the money expended in purchasing the manure. The quantity of grain which has thus been added to the ordinary annual produce of the country, and which has been obtained from the soil solely in consequence of the application of this manure, must be very considerable. If we suppose that three-sevenths of the cultivated soil has been producing corn—that each farmer has applied guano to one-third of his grain crop, and that the additional quantity of grain thereby produced has been, on an average,  $1\frac{1}{2}$  quarter per acre; then we would have upwards of 214 additional quarters of grain for every 1,000 acres of land under cultivation, or 500 quarters for every 1,000 acres under grain crop. And, if guano has been applied to the same extent now supposed over the whole of Scotland, that is, to one-third of the land under grain crop, the extent of which is estimated by the Board of Agriculture at 1,300,000 acres, then we would have had 900,000 quarters of grain added to the ordinary annual produce of our soil, in consequence of the application of this foreign manure. The whole quantity of oats annually imported into the United Kingdom does not, in ordinary years, amount to 900,000 quarters. That guano will be used to the extent now indicated, in the course of a few years, is not improbable; and that it may be used to such an extent with advantage to the cultivators of the soil, provided it be obtained at a moderate price, there can be little doubt. If it be obtained of toler-

able good quality, at the price at which it is selling at present, it will be very extensively used in this district next season, both for turnips and grain crops. The cultivation of turnips has been greatly extended by the application of crushed bones during the last fifteen years; and by the use of guano, the farmer will now be able to produce this valuable root in still greater abundance; while by the increased quantity of food for cattle thus obtained, and by the importation of so large a quantity of extraneous manure to his farm, he will be enabled to bring the soil to a still higher state of fertility, and hence, ultimately, to draw from it a greater quantity of food for man and for beast than has hitherto been obtained. It is interesting to observe how the activity and enterprise of our merchants, and the intelligence and persevering industry of our farmers are co-operating together to obtain materials from every available source to fertilize our fields, and thus to augment the supply of food for our increasing population. It has been often remarked that rivers—especially such as have large cities on their banks—carry an immense quantity of the elements of manure annually into the ocean and deposit it there. But we are now as it were reclaiming the manure thus lost; for guano is well known to consist of the excrements of various species of sea-fowls, which are in the habit of resorting in immense numbers to rocky islets, on which, from their being situated in a dry climate, this excrementitious matter has gradually accumulated for ages. These birds obtain their food, and consequently the elements of which their excrements consist, from the waters around their sea-girt habitations; and, therefore, in bringing guano to our shores, we are redeeming from “Ocean’s depths” the valuable elements, of the use of which it had for a time deprived us.

Agriculturists, in every country, owe much to Professor Liebig. He certainly has brought new light upon the art of Agriculture that may be most usefully and profitably employed. The following extract from a speech of his, at a dinner to which he was lately invited, at Glasgow, in Scotland, is very interesting:—

“Practical experience possesses unquestionable value; but it is like a vessel, to which, in the form of Science, the compass or the pilot is wanting; it is a treasure which cannot be inherited. Science enables us to bequeath this treasure to our children, and it enables our children to increase the store. Science teaches us to recognize the food of plants, and the sources from which it is derived. This knowledge alone makes us the true masters of the soil—the lords of our capital. We can now see where we are guilty of waste, and where we are too sparing. The great truth that animal manures are nothing else but the ashes of the food produced from our fields, consumed or burned in the bodies of men and animals, has given the chief direction to all the modern improvements in agriculture.

Who would have thought it possible, a few years ago, that gas-works would yield a powerful manure? We now know on what the exhaustion of our soils depends: it is, the most precious ingredients of the soil which we remove in the crops, and thus impoverish our fields. By analysing the ashes of plants, we learn what we must replace in order to restore the original fertility of the soil.

Africa and Peru supply us with the mineral elements of bread and flesh, in guano; and chemical works now produce the other mineral substances which are indispensable to turnips and potatoes (Cheers) It is evident to all that the present age has entered upon a new path; we have now to do with the real, not with the imaginary value of manure. (Applause.) As we have now learned how to measure the value of an acid or an alkali, so we can now ascertain the true value of a manure. This, therefore, is precisely what we must expend on the soil, in order to obtain a profit; for the capital of the farmer consists of his labour and his manure. Much, certainly, remains to be done. The mineral food of the plants of all countries must be ascertained by the analysis of their ashes; we must determine which substances are essential, which accidental; we must endeavour to find out in which plant one ingredient or another may be replaced, as lime by magnesia, or potash by soda."

We beg to differ from Mr. Waterton as regards his expression of pity for "poor old John Bull, with a weight of eight hundred millions of pounds round his galled neck." We take upon us to say that this weight is no more galling to the neck of honest John Bull than the mill-stone appears to be to the growth and fruit-bearing of the nut-tree, described above. In proof of this, we can refer to England at the present moment in all her glory of wealth and improvements; and most of those vast improvements have been made since this vast debt was incurred. London has more than doubled her extent and population during this period. We can say the same of Manchester, Liverpool, and many other great towns;—about one hundred millions have been expended on rail-roads, &c. The country and its beautiful mansions have been very much improved, and a vast amount of capital has been expended in manufacturing machinery,—and sent to foreign countries. It may be truly said that, John Bull, like the tree described, is more than equal to all his burdens, and is at this moment the most flourishing, improving, and powerful country on earth,—sending population and capital to the most distant parts of our globe. There is an evil, however, of great magnitude, a want of full employment for the people, and this we attribute to the introduction of machinery for every thing. This must have the effect of accumulating wealth in a

few hands, and greatly increasing the number of the unemployed and poor. The "National Debt" if paid to day, would not cure this evil, but we believe, would greatly unsettle the British Empire, and be productive of numerous evils that we dream not of.

VEGETATION TRIUMPHANT.—At Walton Hall there stood a mill to convert corn into meal. Time, the great annihilator of all human inventions, (saving taxation and the national debt,) laid this fabric low in ruins some sixty years ago, and nothing now remains to show the place where it once stood, except a massive mill-stone, full 17 feet in circumference. The ground where the mill stood having been converted into a meadow, this stone lay there unnoticed and unknown, (save by the hay-maker,) from the period of the mill's desolation to the autumn of 1813, when one of our nut-eating wild animals deposited a few nuts under its protecting cover. In the course of the following summer, a single nut having escaped the teeth of the destroyer, sent up its verdant shoot through the hole in the centre of the procumbent mill-stone. One day I pointed out this rising tree to a gentleman who was standing by, and said, "If this young plant escape destruction, some time or other it will support the mill-stone and raise it from the ground." He seemed to doubt this. In order, however, that the plant might have a fair chance of success, I directed that it might be defended from accident and harm, by means of a wooden paling. Year after year it increased in size and beauty; and when its expansion had entirely filled the hole in the centre of the mill-stone, it gradually began to raise up the stone itself from the ground. This huge stone is now eight inches above the ground, and is entirely supported by the stem of the tree, which has risen to the height of twenty-five feet, and bears excellent fruit.

Strangers often inspect this original curiosity. When I meet a visitor whose mild physiognomy informs me that his soul is proof against the souring influence of politics, which now a days is so generally prevalent, I venture at a small attempt at pleasantry, and say, "that I never pass this tree and mill-stone without thinking of poor old Mr John Bull, with a weight of eight hundred millions of pounds round his galled neck."

#### REPORT.

"The Council have again the satisfaction of reporting to the members, at the present general meeting, the effective state of the Society in every branch of its operations, and the continued influx of new members from all parts of the kingdom. The communications of practical results in farming, furnished by correspondents from the various localities of the country, and again disseminated among the members by means of the journal; the increasing extent and importance of the annual county meetings, at which not only the agricultural community have the immediate advantages of personal communication and direct interchange of experience on farming topics of common interest to

all, but where from year to year specimens of the most approved breeds of cattle are in succession exhibited to their notice, and the rapid improvements now made in the implements of husbandry submitted to their inspection, and their real value brought at once to the test of practical trial: form the leading points on which the Council have to congratulate the members, as evidences of the progressive advancement of the Society in the fulfilment of its various objects.

"In the application of science to the improvement of agriculture as an art, the Council are fully aware that the results will only be conclusive and satisfactory in proportion to the perfection of the particular science itself whose principles are proposed for the regulation of agricultural practice. The laws of mechanics being simple and determinate, their application to the improvement of the principles on which the machines and implements of agriculture may be most economically effected, has been attended with results correspondingly decisive in their character: but while the simple and well established principles of inorganic chemistry may with confidence be expected to serve as safe guides in leading us to a knowledge of the properties of every variety of soil, and the means of their required modification to particular objects, any new light to be thrown upon agriculture by organic chemistry, a less perfect branch of the science, must as yet be received with greater diffidence, though it ultimately promises the most important results. The Council are convinced that the perfection of agriculture as a science, or farming as an art, is only to be attained by the establishment of scientific principles derived from practice, and their judicious application under the given circumstances and conditions of each particular case of climate, soil, or aspect. While, however, they deem this caution requisite in exposition of the practical objects and character of the Society, they witness with great satisfaction the rapid advances made by the distinguished chemists of the present day in that comparatively new and infant branch of chemical philosophy connected with investigations into the laws of organic matter and the principles of vegetable life; and they have to congratulate the Society on the zeal with which their consulting chemist, Dr. Playfair, has entered upon this new and valuable field of scientific inquiry, and the kindness with which he has again favored the members, on the occasion of their general meeting, with two highly interesting lectures, elucidating the application of the most recent discoveries of chemical science to the practical operations of agriculture. The Council feel that if any circumstances could embrace the obligations under which they are laid in reference to these lectures, they would be the readiness with which Dr. Playfair, at a very short notice, and regardless of personal inconvenience, prepared himself for their delivery, and the liberality with which the Royal Institution of Great Britain at once placed their theatre at the disposal of the Society for the occasion.

"The Society's recent county meeting at Southampton was most successful in every department of its arrangements, and fulfilled the most sanguine expectations of the Council. The extent of the show-yard, and the number of entries for exhibition on that occasion, exceeded those of any previous meeting; and the trial of implements, so dependant on circumstances for failure or success, was conducted to the satisfaction of the stewards of that department and the exhibitors whose implements were selected for trial, and proved an object of much attention to the numerous spectators by whom it was witnessed. The success, in a financial point of view, was greatly promoted by the means so liberally placed at the disposal of the Council by the committee of the town and neighbourhood

of Southampton, in the contribution of £1,000. to the funds of the Society, for the purpose of meeting the expenses of the occasion. To the mayor, corporation, and authorities of the borough, the local committee, the commissioners of police, the occupiers of the trial ground, and the South Western Railway Company, the Society, before leaving Southampton, conveyed by unanimous resolutions their best acknowledgments of the essential services which those parties, by their cordial and zealous co-operation, had respectively rendered to the Council in promoting the objects of the meeting.

"From the agricultural character of the district in which the next annual county meeting of the Society at Shrewsbury is appointed to be held, the Council anticipate with confidence a result no less gratifying than that obtained at Southampton; and they have already taken the requisite steps in preparation for that meeting, and have also decided that the judges of stock shall be appointed from recommendations made by the members of the Society at large at the general meeting in May.

"The Finance Committee will lay before the meeting the balance-sheets of the accounts as examined and approved by the auditors on the part of the Society. Their Chairman will also report to the members the large amount of arrears of subscription discharged during the past half year, as well as the mode proposed for facilitating the future collection of subscriptions. Since the last half-yearly meeting upwards of 300 new members have been elected, and the Society now consists of the following members:—

Life Governors .....	97
Annual Governors .....	208
Annual Members .....	6037
Life Members .....	470
Honorary Members .....	15

making a total of 6,827 members on the list of the Society at the present time. The Council have unanimously requested Mr. Pusey to accept the office of a trustee of the Society, vacant by the death of the Duke of Grafton, and have elected Mr. Thomas Lockley Meire, of Count Arbour, near Shrewsbury, a member of the Council, in the place of the late Mr. Edward Gough, of Gravel Hill, near Shrewsbury.

"The increasing importance attached by the members to the possession of the Society's journal, has led the Journal Committee to continue its best consideration of the means by which the distribution of each publication may be effected with the greatest certainty, and least loss of time, among the members throughout the kingdom; and they trust that this desirable object will gradually become attained, as the addresses of members are more accurately known, and the most convenient modes of transmission to them more distinctly ascertained. For the convenience of members availing themselves of their privilege of attending the rooms of the Society, the Council have ordered a catalogue of the library, and an inventory of the implements, models, &c., to be prepared for their reference.

"Four years having elapsed since the date of the charter, and the bye-laws then framed agreeably with the new powers conferred upon the Society, the Council have been desirous of rendering the experience gained during this period available for the regulation of their proceedings; and they have accordingly made a complete revision of their former bye-laws and regulations, not only embodying the tenor of such of their special resolutions as had a permanent operation, but rendering the whole more exactly in accordance with the provisions of the charter. A printed copy of these bye-laws was appended to the journal on its



last publication, and thus brought under the immediate notice of the members.

"The Council, in conclusion, beg to congratulate the members on the present sound and vigorous condition under which the Society is steadily advancing in the gradual fulfilment of its national objects; and, supported as it is by the continued accession of new members, they hope to extend annually its sphere of usefulness.—By order of the Council,  
(Signed) "JAMES HUDSON, Sec."

A correspondent supplies us with the following admeasurement of six heifers, as to the increase in height and girth, during a run of grass from May-day to Michaelmas-day:—

No.	Age		Height. in.	Girth. in.	Height.		Girth.			
	yrs. mo.				in.	in.	in.	in.		
1	...	2 4	...	52	...	71	...	53	...	77
2	...	2 2	...	49½	...	70	...	50½	...	76
3	...	2 0	...	53	...	72	...	53½	...	76
4	...	1 10	...	54½	...	75	...	57	...	79
5	...	1 7	...	50	...	71	...	53	...	77
6	...	1 5	...	48	...	67	...	49½	...	52

No. 4 an ox.

—*Doncaster Chronicle.*

**THE COCOA-NUT IN CEYLON.**—Nearly all the domestic wants of the Singhalese can be supplied by the cocoa-nut tree. He can build his house entirely of it. The walls and doors are made of cajans, the leaves platted; the roof is covered with the same; the beams, rafters, &c., are made of the trunk. He needs no nails, as he can use the coir-rope made from the outside husk. If he wants a spout, he hollows the trunk split in two. It also supplies him with many of his household articles. He makes his oil from the kernel; the hard shell supplies him with spoons, and cups, and drinking vessels, and lamps, and water-buckets; the refuse of the kernels, after the oil is expressed (called *punak*), serves for food for fowls and pigs; the milk from the kernel is used in his food. In short if a man have a few cocoa-nut trees in his garden he will never starve. Arrack, a strong spirit, resembling whiskey, is made from toddy, the juice of the flower, and brooms are made from the ribs (*irita*) of the leaflets.  
—*Recollections of Ceylon.*

**GUANO.**—This manure has become an article of such peculiar interest and extensive consumption, that we beg to lay before our readers—and particularly our agricultural friends, the following statistics as to stock and consumption, which may prove interesting at the present season. From statements we have received, it appears that the consumption last season in Great Britain of Peruvian and African guano was about 60,000 tons, at prices ranging from £8 to £12. The stock on the 1st of January, 1845, in all the ports, was 39,000. During the first four months we may calculate on a further import of 45,000 tons, making the stock, on the 1st of May, about 85,000 tons only—and this to meet a demand, on a moderate calculation, of 180,000 or 200,000 tons. Prices are, consequently, advancing, and we may look for great activity in the trade immediately. On Wednesday a cargo of 345 tons of Ichaboe guano was offered for public sale at the Broomielaw, when the whole was sold in a few minutes at from £5 5s. to £6 7s. 6d., as it lay.—*Glasgow Chronicle.*

**SUBSTANCES FOR ABSORBING URINE.**—Dr. Jackson's directions in the *New England Farmer* is:—"Take twenty measures of dry peat and one of gypsum, and mix them together. Place barrels half full of this mixture in places where urine may be collected, and it will be found that the salts and ammonia of many barrels of urine will be consolidated in this mixture, without giving the slightest odour, or being in any way offensive, for the salts are taken up, and the carbonate of ammonia, formed by decomposing urea, is immediately absorbed. This method of getting rid of a nuisance and consolidating a valuable liquid manure, full of the most useful salts, ought to receive attention. A mixture of peat or swamp-muck and gypsum (plaster of Paris) will also serve to absorb all the disagreeable gases of vaults, which will be converted into fertilizing compounds with the sulphuric acid of the gypsum and the organic vegetable acids of the peat."—*American Agriculturist.*

A Pedomotive Machine has been invented in England by the engineer of the Hitham iron works. It weighs about two hundred and seventy pounds, and is manufactured almost entirely of wrought iron. It carries four or six persons, two of whom propel it by pedals, applied on a new and advantageous principle. Its greatest speed, for a short distance, is at the rate of twenty-five miles an hour; its average rate is fifteen miles an hour, carrying in both cases four passengers. Its utility on a line of railway, says a London paper requires no comment, as without the slightest delay, one man can convey a message from station to station, at a far greater speed than a horse express, and should fear there be any of its encountering a train, it can be lifted up from and placed on, the railway with as much ease as a sedan chair.

**LIME AND RATS.**—A gentleman of this city, who had occasion to use a considerable quantity of lime about his premises, which had heretofore been infested with rats, informed us that these destructive little animals had suddenly ceased to appear or to annoy him:—"Before using the lime (said he) you could scarcely walk across the yard, after night, without treading on them." He showed us several of their principal holes, around which he had deposited a small portion of fresh or unslacked lime, which evidently had the effect of driving them from these places, which they had before resorted to in great numbers. The above is a simple and cheap method of getting rid of these annoying and destructive pests. Suppose you try it!—*Memphis Appeal.*

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