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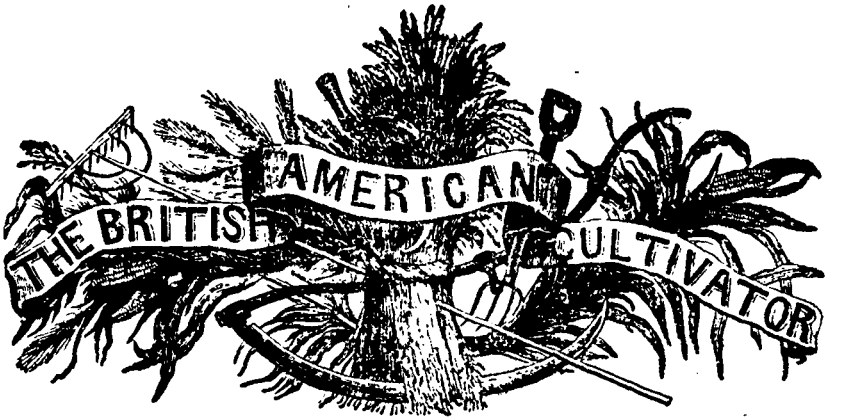

"Agriculture not only gives Riches to a Nation, but the only Riches she can call her own.

New Series. TORONTO, DECEMBER, 1846. Vol. II. No. 12

Canadian Agricultural Societies.

Although much has been written upon a popular system of organizing Agricultural Societies, still, we apprehend, the subject is not well understood by the generality of the farmers of this province. As this number completes the current volume of the *Cultivator*, probably no topic could be discussed that would prove more generally interesting to the agricultural reader, than the one we have selected for our leader. The great object of Agricultural Societies is, to encourage the introduction of a better system of agriculture, and to promote such other objects only as have an influence in giving an increased production of wealth to the country. Agricultural Institutions, based upon sound principles, if generally established, might be made instrumental in adding *one million of pounds annually to the wealth* of Western Canada; and indeed it would be extremely difficult to define limits to the good that might be effected through the agency of such associations. Entertaining such exalted views of these modern Institutions, for the improvement of agriculture and the mechanical arts, no apology is necessary for so frequently recurring to this interesting theme.

The organization cannot be complete without three distinct classes of Agricultural Societies. These should be styled Township, District, and Provincial. The three grades already exist, but the machinery by which they are set in motion is very imperfect, and to remedy the evil is probably rather a difficult task, especially as those who may volunteer their services to aid in bringing about any change for the better, in any Public Institution, are ofttimes suspected for being actuated in their conduct by improper motives, and that too by the very parties who would in the end receive the most benefit.

Township Societies, in our opinion, should exist in every District in the Province;—and in the twenty Districts in Western Canada, not less than one hundred and twenty should be in being before the close of the present winter. One half of the government money granted to every District should be appropriated among the Township Societies, in proportion to the amount of subscription that they severally raise; and the remaining portion should be appropriated to the District Society. One representative chosen by every Township Society in the District, should take the entire controul of the District Society, by which means the friends of

improvement throughout the entire District would have unlimited confidence in the proceedings of the District Board. Intelligent farmers or manufacturers should be chosen to represent the interests of the townships in the District Board; or if the selections be made from other classes, great care should be observed to select such only as have proved themselves true friends to the interests of the body. Township shows or exhibitions might with advantage take place both in the spring and fall, but for all practical purposes, the District Shows need not occur more than once per annum. To introduce something like system in the management of these shows, we would propose that the autumn township exhibition should take place from the 15th to the 20th of September; the district exhibition from the 25th to the 30th of September; and the Provincial Show in the first week in Oct. By this mode of management only the choicest products would be brought together at the District shows; and the successful competitors at the township and district shows might with some reason enter their prize articles for competition at the Provincial Exhibition. We have already stated, that the district societies should be governed by intelligent and otherwise well-qualified persons, chosen by the various township societies in the district, who should meet in council as often as once a year; and as the duties they would necessarily have to perform would be onerous, and of great importance to the country, the members should have a fair compensation for the services rendered. The most important duties of district boards would be, the efficient government and management of district societies, and collecting and reporting the best experiments and practice of agriculture, from the various townships in the district.

The Provincial Board of Agriculture, as already well understood, should consist of two members from every district, to he elected by the District Agricultural Society, or District Board of Agriculture, would be much better. As the Provincial Board of Agriculture is intended to encourage useful genius, in whatever walk of life it may be developed, and especially those of agriculture and manufactures, one of the members of the Board from every district should either be a mechanic or directly interested in manufacturing operations, and the other an agriculturist. If the spirit of this suggestion be carried into practice, it will almost to a certainty prevent local jealousies, and be productive of much good to the country. The members of the Provincial Board, in all probability, will be composed of the most practical business men that are to be met with in the Province, whose time could ill be spared from their business; and owing to this consideration, together with the important duties they would have to perform, it is only right that their entire expenses should be paid; and besides, they should receive a fair compensation for the service they may render to their country. The duties of the members of the Provincial Board, in point of practical importance, would favorably compare with any public body in the Province; and to secure the efficient services of the gentlemen who may be elected to the Board, something more than mere honorary compensation will have to be granted to them.

It might not be out of place to particularise some of the duties that should occupy the attention of the Provincial Board.

1*st. The Management of the Provincial Agricultural Society.*—The control which the Board would exercise over this Association, would secure to it a general patronage, and the benefits, as has already been stated, would be of the greatest importance to the country. It would be premature, and probably out of place, for us to submit our views in relation to the management of the Provincial Agricultural Society, at this period, as the Board of Agriculture will in all probability hold its first session before the close of the present winter, and especially as the members of that Board will doubtless be prepared with well-digested rules and regulations for the future guidance of the Institute.

2d. Agricultural College and Experimental Farm.—One of the first steps to be taken by the Provincial Board, should be the establishment of an Institution of this kind.—*The wants of the country now demand it:* and it shall not be the fault of the conductor of this magazine, if both the College and the Farm be not in full operation before the close of the year 1847. A private enterprise under the patronage and partial direction of the Board would, when all things considered, be more likely to succeed, and be conducive of greater benefits, than an Institution placed entirely under the control of either the Board or the Government. An Agricultural College and Experimental Farm, are Institutions of which the people of Canada have as yet but an imperfect knowledge, and to secure success to such an undertaking, men of *indomitable perseverance* and of superior practical and scientific acquirements, will have to be selected to superintend its management.

The views advanced by the *Cultivator* respecting the benefits that would be conferred upon the rising generation of Canada, were Educational Institutions ertablished in connection with a well-cultivated farm,—where both the science and practice of agriculture would be taught, and where the cultivation of many new plants would be tested, and the most approved systems of agriculture practiced,—has attracted the attention of a number of the most learned men of this country and England; and it is with much satisfaction we are enabled to state, that measures are being taken between parties living in the Province and London, England, for the establishment of such an Institution in the neighborhood of this city, in the early part of the ensuing spring. It is highly important that the Provincial Board of Agriculture should meet before the close of the present winter, in order that the party who intends to establish the Agricultural Institution should have the benefit of the advice and patronage of that body at the commencement.

3d. Agricultural and Mechanical Museum.—The farmers and mechanics of Canada should be placed in the position that they could avail themselves of every improvement that is made in their highly important calling; and among the means that is best calculated to promote this object, none, probably, would be more efficient than a *museum*, where models of the most useful and labor-saving machines, geological and mineralogical specimens, and all other curious or useful productions of the country could be deposited, and thrown open for public inspection. This Institution should be placed under the entire control of the Provincial Board, and would require a liberal grant from Parliament, to keep it up in a respectable manner. The Canadian people are not a very inventive people, and therefore they should be placed in possession of all the discoveries made in other countries that would be calculated to develope the resources of the Province, or induce the inhabitants to exert their energies in improving this naturally fine country.

4th. Publishing the Transactions.—There can be no valid reason assigned why farmers should not be as anxious to make themselves acquainted with the best systems of agriculture, as the members of other professions are, in obtaining the experience and views of the most celebrated men of their respective callings. No farmer will object to receive advice and direction in his business from a distinguished skilful cultivator, who may be a neighbor, or in whom he could place unlimited confidence. Experiments are none the less valuable because they happen to be made in a remote portion of the Province, or by what is generally termed an illiterate person. Some of the brightest intellects that any country can boast of, are to be found, as it were, buried in the backwoods of Canada. What we are most anxious to see is, the development of native genius, let it be found in whatever walk of life it may. The system of organisation here submitted, if carefully put to the test, would in a very few years, have the influence of creating as great if not a greater spirit of emulation in useful enterprise, than is to be met with in any other country. Among the numerous means for developing native genius, and creating a general spirit for improvement, none would have a more beneficial influence than that of publishing the proceedings of the District and Provincial Boards of Agriculture, provided that these Boards would, through their numerous agents, adopt efficient means to collect reports of the best experiments made in agriculture, together with the best systems practiced in various parts of the Province.

Rearing of Stock.

PROFESSOR JOHNSTON'S LECTURE AT AYR.

Subject—Feeding of Stock.—Professor Johnston commenced his lecture by referring to the composition of the vegetable food of man; in elucidation of which he directed attention to several tables, showing the composition of the different kinds of grain. He next came to consider the composition of the animals that lived upon this food. If they took a portion of any animal—for instance a piece of mutton—and burned it in the fire, they would find that there would be a small part that would not burn away. Thus they would perceive there was a striking similarity established between the animal, the plant, and the soil—that which burned away being called the organic part, and that which did not burn away, the inorganic part. The organic part of the animal, consisted of two different substances—the fat and the muscle. If, after separating the muscle from the fat and the bone, they were to take and wash it in water, as they had seen done in his first lecture with the flour, they would find that the water would gradually become less coloured, and the lean muscle would become white. This mass, with the exception of a little fat—which they could not separate by washing—consisted of a substance to which chemists gave the name of fibrin. Chemically speaking, it was just the same thing as the gluten which they obtained from the flour. Then they had the fat, which formed a covering to certain parts of the body—sometimes interlarding itself among the muscles, separating them one from the other. This fatty matter was nearly identical with that found in all the plants which they raised, in which it was present to a greater or lesser extent. There was also bone in the animal; which, if they burned, a large proportion would consume away, but a still larger proportion would remain. In bone they had a substance called cartilage. In cartilage they had nitrogen present. The fibrin and the cartilage were very like each other in their composition. So much with regard to the organic part of the animal; and if a similarity existed between the general composition of the plant and the animal, they would learn by-and-by, that there was as great an analogy between the inorganic part of the plant and that of the animal. Of what did the inorganic part of an animal consist? The proportion of the inorganic matter varied with the part of the animal as it varied with the part of the plant. If they looked to the composition of muscle, they would find it to be as follows, in every 100 lbs.—

Water, - - - -	77 lbs.
Fibrin, with a little fat, -	22
Phosphate of Lime, - -	—½
Other Saline Matter, - -	—½

And, again, if they looked to the composition of Ox bones, they would find it to be as under:—

Cartilage, - - - -	33.3
Phosphate of Lime, - -	57.4
—— Magnesia, -	2.0
Carbonate of Lime, - -	5.9
Soda, with a little Common Salt,	3.4

As in the composition of the inorganic part of the plant, they had seen that it consisted of two general substances, the saline substances and the phosphates, so was it in the animal—the phosphate of lime forming nearly sixty per centage of the whole But, besides the solid part of the animal, it had in its body certain fluid parts. The blood was the most important of these fluids. It was almost identical, in its general composition, with the muscular parts of the body; 100 lbs of blood being nearly the same as 100 lbs of muscle. They saw, therefore, that the whole animal consisted essentially, in its organic part, of fat and fibrin, and in its organic part, of saline substances and phosphates. The plant consisted of starch, gluten and fat. The animal consisted of gluten and fat, but no starch. He came now to a most important point There was a difference—and a very important one—between the animal and the plant. The animal contained fat and gluten. The plant contained fat, starch, and gluten There was no starch in the animal. It must, however, since it existed in such quantity in the food of animals, serve some purpose in the animal creation. In order to understand this, it would be necessary to explain the functions of the animal economy. The first fact he would notice was, that they all breathed. They inhaled into the lungs a differently constituted air from what they gave out. Only a small quantity of carbonic acid was inhaled by the lungs, but a very large portion was exhaled. A very small quantity of this gas was in the atmosphere, as he had already shown them—only one gallon of it to 2500 gallons of the common air. He likewise demonstrated to them that this carbonic acid was formed of carbon and oxygen. They had seen farther that 36 pounds of carbon, and 45 pounds of water,

formed 81 pounds of starch. This substance, therefore must be burned in the stomach, physiologists being of opinion that it serves the same purpose in the human body, as coal does in the production of heat in a room. This was an important practical point in reference to the economy of animal food. The plant, in order to sustain the animal, must not only have what will give it fat, muscle, and bone, but what will also give it heat. The carbon given out by the lungs varies under different circumstances. A little man will respire five ounces of carbon in a day; but a tall man, with a capacious chest, who takes exercise, will respire as much as fifteen ounces, and an animal, such as a cow or a horse, from five to six pounds. In order to respire five ounces of carbon per day, we must have about eleven ounces of starch, and the more exercise we take the more starch must we have. Thus was nothing wasted in nature, such a thing as wasting was not known in nature. There was no waste of starch or carbon from the lungs. If the animal was cold more would be required to keep it warm, consequently, in the economy of food, a great deal depended on the warmth and condition in which the animal was kept. If their land was in a cold condition, the animals which fed on it would be cold also—just in the same way as a person, when he entered a cold room, would become cold in proportion to the temperature of that room. Animals that are kept cold will also eat more food. In like manner, if they fed their eatttle on an exposed situation, they must eat more food; but if they kept them in a shed, or in folds dry and sheltered, they would eat less. It was not merely the result of the theory he had explained, on which this principle was founded; but it has been arrived at by actual experiment. The following table showed an experiment made on sheep:—

	Live, Nov. 18.	Weight Mar. 9.	Increase.	Roots Eaten.	Incr. for each 100 lbs. of Roots.
	lbs.	lbs.	lbs.	lbs.	lbs.
Unsheltered,	108	131 7	23.7	1912	1.2
In open Sheds,	104	129 8	28 4	1394	2.0
Do., but confined,	108	130.2	22.2	1238	1.8
Close Shed, dark,	102	132 4	27 8	886	3.1
Do., but confined,	111	131.3	20.3	886	2.4

The original weight of the sheep was given in the first column, and the second contained the increase they made from the month of November till the month of March. The animal placed in an unsheltered situation had increased 23lbs.; the one in the open shed 28lbs.; the one in the same description of shed, but confined in a crib, 22lbs.; the one in a close shed in the dark, 27lbs.; and the one kept in the same sort of shed, but confined, 20lbs. The increase was greatest where the animal was kept in an open shed; but then the quantity of turnips consumed was double that of the animals kept in the close shed. From this table it was obvious, that in the dark sheds a great saving of food had been effected, which arose from the animals being less disturbed, and therefore less restless. Motion was found to be accompanied by a waste of substance. Let them consider how the different purposes could be best accomplished. If it were for the purpose of manufacturing dung, as in Lincolnshire, that they kept cattle, intending afterwards, as they did there, to sell them at nearly what they cost, it was not, in this case, of consequence to save food. They would not, of necessity, give the cattle rich food for effecting this purpose, but that kind of food of which they would consume the most. They would also keep them in a cool place, and give them a great deal of exercise. But, suppose the farmer looked to something else—to lay on fat—he would give his cattle those substances which contained a large proportion of fatty matter. Oil-cake was one of these. It was exactly on account of the quantity of oil which it contained that it was valuable for laying on fat. Bran was another thing. Many persons were surprised that bran should be so valuable for fattening pigs; but if they looked at its composition in the following table, they would find that it contained about five per cent of oil:—

Water, - - - -	13.1
Gluten, - - - -	19.3
Oil, - - - - -	4.7
Husk and a little Starch -	55.6
Saline matter - - -	7.3
	100

Oil, consequently, was greater in amount in the husk of the wheat than in the wheat itself Oil also especially abounded in Indian corn; hence in the United States, and other countries where it was grown, it was extensively used for the fattening of pigs. Professor Johnston then alluded to the differences which existed in oil-cake, some of which was much better adapted for fattening than others. But suppose they kept their aimals, not for the purpose of laying on beef and mutton

The animal, in this case, required what could give it good muscle and bone. The food that would fatten it would not add to its supply of muscle and bone. In oats, but especially in beans and peas, they had a large quantity of things necessary for this purpose. Hence bean-meal and peas-meal were given to young calves, inasmuch as these contained the substances essential not only to supply the bone but the muscle also. The young animals must get food in which phosphates predominate. It had suggested to feed young stock upon sago; but this was very wrong, for sago scarcely contained anything else but starch. It was necessary to give a growing calf not only what would produce muscle, but what would add to its weight in the shape of fat. Profess. Johnston then showed that the result of pasturing young cattle upon the soil was to deprive it of its posphates, which, unless replaced by manure in which these abounded, was sure ultimately to lead to its deterioration. He next adverted to the composition of milk, which he stated to be as under:—

Casein,	4.48
Butter,	3.13
Milk Sugar,	4.77
Saline Matter,	0.60
Water,	87.02
	100.00

In oats there were about 16 per cent. of casein, or curd. In water this could easly be dissolved from the oats; and if a little vinegar was applied, the curd could be thrown down in the same manner as in milk. Beans and pease contained from 24 to 28 per cent. of this casein, which was very nearly identical with fibrin, only that the latter contained a little phosphorus. In milk also they had butter, which was similar to the fatty matter of the food. It also contained sugar, which, like starch, consisted of carbon and water; and of saline matter there was about half-a-pound in every ten gallon of milk. The quantity of saline matter in 1000 lbs. of milk would appear from the following table:—

Phosphate of Lime,	3.44 lbs.
Phosphate of Magnesia,	0 64
Phosphate of Peroxide of Iron,	0 07
Chloride of Potassium,	1.83
Chloride of Sodium,	0 34
Free Soda.	0.45
	6.77

In order that the cow might produce this milk, it must have an additional amount of food, about a sixtieth part of its entire weight. He then went on to demonstrate that the quality of the milk varied with the food on which the cow was supported; and illustrated this by stating that the object of the town dairyman was to get as much milk as he could; hence he gave the animal such food as put the greatest quantity of milk—thus saving his conscience, and, at the same time, the trouble of going to the pump. In a cheese district the object was to give the cow as much as it would take of those substances which formed the cure or casein, such as oats, beans and clover. The great end of all was to get as much as they could from the animal at a cheap rate, consistantly with its health. The animal was a machine so delicately constructed, however, that they could not experiment with it as they could do with the soil. If they wanted butter, they would give it a food similar to that used in the fattening of animals —such as oil-cake, and oats in preference to other grain, because they contained more oil. The sustaining food was reduced to the least possible point when the cow was giving milk. What is the effect of dairy husbandry on the land? If the milk is carried away and sold in the large towns, or carried away in the form of butter or cheese, or in the form of pork when the whey is given to the pigs, what is the effect of this on the land? In asmuch as milk contained so much as the phosphates of lime and magnesia, if they went on cropping their land, this would ultimately come to effect a gradual deterioration of the land. It made such a market difference in the quality of the land in Cheshire, that it became much less valuable; until, by accident, bones were tried, the application of which entirely renovated the old pastures, and their value had increased from 5s. to 30s. an acre. They would thus see the necessity of supplying bones to land when it had been deprived of its phosphates. The Professor then casually adverted to the rearing of sheep; and stated that, as every 100 lbs of wool contained 5 lbs. of sulphur, taken from the soil in the shape of sulphuric acid in composition with lime, forming gypsum, the same injurious consequences would result to the land, unless gypsum was supplied to it in lieu of that carried away by the wool. The Professor, after referring to the value of farm-yard manure, went on to show the beautiful connection that subsisted between chemistry and agriculture. Among the many means for making

a knowledge of agricultural chemistry more diffused, he advocated the property of the young men in the country forming themselves into small societies, and either by reading or discussion on the many interesting and important subjects that the science embraced, they would soon arrive at such a knowledge as would be of great practical value in the cultivation of the land. He urged them, also, to call in to their aid the services, if possible, of the parish teacher. He did not think that societies so large as the St. Quivox Club were so valuable as the one he had recommended, inasmuch as from the numbers present the majority were reluctant to express themselves on the topics brought under consideration. He was glad to hear them in several of the parish schools in Ayrshire, Agricultural Chemistry was already introduced as a branch of education. This, he had no doubt, would be productive of the most beneficial results, and he hoped that the proprietors of the different parishes would encourage the schoolmasters in their praiseworthy efforts, by purchasing them chemical apparatus for the prosecution of this branch of knowledge. He by no means recommended the schoolmaster to follow up the subject to the extent of analysing the soil, because to enable him to do this he would be obliged to neglect his other duties; and, besides, as analysis was a most difficult art—requiring many years of application to arrive at correct results—a chemical knowledge in this respect might be productive of the very worst consequences. He concluded by thanking them, in the name of the Association of which he was the officer, for the interest they had taken in the course of lectures which he had delivered.

ERRORS IN THE PREMIUM LIST.—*Hot Air Apparatus.*—The first premium was awarded to H. Ruttan, Esq, of Coburg, and the Judges in their report took especial notice of it, and recommended it to the favorable consideration of the public.

Cooking Stove.—The first premium was awarded to Thomas Towers, Esq., of St. Catherines.

Door Scraper.—The first prize for this article was also awarded to Mr. Towers, of St. Catherines.

Best Piece of Fulled Cloth.—The first prize was awarded to John Gibson, Esq., of St. Catherines, and the amount should have been £2 10s. instead of 15s.

Life Members of the Provincial Agricultural Association.

The subscribers to the *Cultivator* must now be pretty well acquainted with the objects of the Provincial Agricultural Association; and as these objects cannot be accomplished unless the people of the country unite their energies and means, we trust that the position we occupy in the society will exonerate us from all censure, if we should be guilty of pressing the importance of sustaining the Institution, by the liberal contributions of the friends of the movement, too frequently upon their attention. If we be spared, we expect to see the system of organization, and the improvements enumerated in the leading article of this number, fully carried out in the Western portion of this Province. But all who have thought on this subject, must be fully aware, that these great improvements cannot be effected without some little investment of capital on the part of those who wish well to the movement, and who in return may expect to receive either a direct or indirect benefit from the operations of the Association. The most feasible plan that could be devised, to secure a liberal patronage, is that of canvasing the country for Life Members. The payment of the small sum of £2 10s. will constitute an individual a Life Member of the Provincial Agricultural Association,—and we hope to find hundreds in Canada who have a sufficient amount of patriotism to induce them to enroll their names on the Society's list of Life Members.

We shall publish any additional names we may be favored with, between this and the 25th of December, in the January number of the *Cultivator*, and shall continue adding to the published list from month to month as we may be favored with new members. We have good reason to believe, that there are some *scores* of gentlemen residing in the Home District, who will become Life Members of the Provincial Association; but in a national movement like this, we want to see a numerous list of names from every District of Western Canada. The friends of the Association, we trust, will not forget the claims that this Institution has upon their attention; and we hope that they will not only become members themselves, but press the matter upon the favorable consideration of others who are not so well acquainted with the objects of the Association.

Feed all fattening animals with perfect regularity—enough, but not too much. Save all your straw well for litter and winter feed.

On Breeds of Sheep.

The *management* and *selection* of any breed of sheep must, after all, become matter of pounds, shillings, and pence. *The question the farmer* has to consider is, what description of sheep will in the long-run return the most profit? and this question must be viewed in strict relation to the management he will be able to adopt on the particular farm on which he may be located. It is not therefore a simple, but a compound question. It is not merely which breed will make the most flesh and fat, but which will make it in the *shortest time and on the least food*; which can bear the weather, or hard keep, or travelling, or a particular mode of *management*, with the greatest impunity. All these considerations must enter into the farmer's mind before he can come to a sound conclusion. From the want of making these considerations many fatal mistakes have been made, and a flock has been selected altogeter unsuitable to the soil, and incapable of bearing the severity of the weather.

The two breeds which appear as rivals in their claims on public attention are the New *Leicesters* and the South Downs. It cannot be doubted that, as far as propensity to fatten, an early maturity is considered, the Leicester will not only rival, but eclipse all others; for these qualities the former may justly be considered as a model, and all other breeds will possess these qualities in a greater or lesser degree, in proportion as they possess the similitude of the form and points of the Leicester sheep. The South Down itself will not be an exception to this rule, for if the improved and *the neglected specimens be compared together* it will be found that the excellencies of the former consist in those points *which approximate* most to the Leiceester. The wool, too, is also a consideration; for the fleece, from its greater length and weight, will bring in *nearly double that of* the Down. Where, therefore, the pasture is very fertile, and the sheep can be tended with much care, and without exposure, the Leicester may be justly regarded as the most profitable of the *pure breeds*. Its drawback, however, are the incapability of the animal for bearing exposure, or travelling, or living hard; in fact, its weaker constitution, and greater liability to inflammatory disorders. It is thus unfitted for the purposes of folding, or for the exposure of the South Downs, and still more for contending with the severities of the Grampian hills or the Welsh mountains. In such localities these sheep could not endure. Then again, the mutton is by no means so good as the South Down, which, however, is partly, *not* wholly, owing to the early period (twenty *months) at which they are fit for the butcher*, and partly to the very large proportion of tallow in proportion to the lean. *Thus it is not a favourite* in the London markets, and accordingly, of late years, the Leicester and the Down has been produced instead of the Leicester; and it is contended that this first cross is the most profitable sheep that can be fattened, making greater and more rapid progress than the Down, which sign-manual of their origin renders them a greater favourite with the butcher.

The South Down, or rather the improved South Down—for there is a great difference between the two—*possesses most valuable qualities*; with a propensity to fatten inferior only to the Leicester, but with later maturity (often 33 months, though considerably shorter than what it once was,) this breed are excellent travellers, well adapted for folding, hardy compared with the Leicester, and capable of living on short pasture, and perhaps the best of all breeds for the Down farms of the South of England. The mutton, too, is more esteemed than any other, with the exception of the small mountain sheep. Perhaps there is no ancient pure breed of sheep *that has undergone* so much improvement as the South Down, and it affords the owners of other breeds a proper example, showing what can be *done by care and* attention, and the application of proper principles. Nothing can afford a better proof of the sterling qualities of this breed than the facts that some twenty or thirty years since, the price of South Down wool rendered the fleece a matter of great importance; and now, although the price is reduced to one-third, and it can never expect to realise much advance, *yet, notwithstanding* this, the valuable qualities of the animal, and the improvements that have been made have enabled the breed still to retain a *foremost rank in public* favour.

With these two valuable breeds, each adapted for different pastures, it may, perhaps, be asked, What need is there of any other? It will, however, be found that in the marshes of *Kent and* many other places, the superior hardihood of the native breeds has rendered them more profitable *than the Leicester, though, unquestionably*, crosses with the latter have much improved their value. And notwithstanding the eminent qualities of the South Down, they have been found not sufficiently hardy to endure the severities of the *Grampian hills* or the Welsh mountains. They have been tried and found wanting; vast numbers have been destroyed by the rigours of winter in these bleak situations, and the losses that have accrued to many parties, have deterred others from following their example.

The Cheviot sheep possess many valuable qualities; decidedly inferior to the South Down in their fattening powers and their early maturity, they are superior in these points to all other mountain sheep, and, in hardihood, even to the South Down, and are *thus the best adapted* to their native hills, and all other pastures of a similar character. When carried, however, to the* extreme north and the *islands of Zetland and* Orkney, it is said that they are not sufficiently hardy for these extra rigorous places, although it is probable, with a little increase of care, they might be rendered so, and they would then be far more profitable than the ungainly forms of the native breed.

These three breeds—the Leicester, the South Down, and the *Cheviot—may be considered* as

the principal pure breeds which the country possesses They are essential to the variety of pastures which obtain, and without them the country could not be properly stocked. Other breeds, which it may be advantageous to adopt, either possess peculiar qualities which render them valuable, or have been crossed extensively with some improved breeds. [Extracted by permission, from a forthcoming work on sheep, by Mr. W. C. Spooner, of Southampton]—*Ag. Gazette.*

The Farmer.

Messrs. Editors:—If there is one man more than another who has reason to be proud of his calling, that man is the farmer. Behold him in the morning rising with the sun and going cheerfully to his labor; as he goes he is fanned by the cool and refreshing breeze that is gracefully waving the green clad tree, from amid whose leafy branches a hundred of nature's minstrels welcome him with a light and cheerful heart to his work, with their morning songs. A contented man is a happy man. But why should the farmer be a contented man above all others?

In the first place because his property is safe. The merchant knows not when he lies down at night but a storm may arise and send his ship upon some hidden rock in the sea and she be dashed in a thousand pieces, and her cargo buried in the depths of the ocean.

The man of business fears lest he may hear every moment of the failure of some extensive firm, that will sweep him from the avails of a life of anxiety and toil.

Another whose property is in buildings, fears lest the raging fire should consume his all.

But the farmer has none of these anxieties; storms may rage but they cannot sink his farm—houses may fall but that will not effect him—fires may rage, but there is very little danger of their reaching him. The farmer can lie down to rest with the assurance that his property is safe, and not only safe, but even while he sleeps his crops are growing, and his flocks and herds are increasing.

Another reason why the farmer should be contented, he is more independent than most other men.

The clergyman is dependant upon his people He must preach, pray, and live to suit them; in short, he must have the fear of offending them continually before his eyes or he must go.

The physician is every body's servant, he must be at every body's beck and call, when called upon by night or day, in rain or shine, hot or cold, he must go; he cannot consult his own wishes, or do that which is best for his own health, but he must go, or we will get some one else.

The mechanic is dependent upon his employer; he must labor for him for whatever compensation he sees fit to give, and take his pay in what and when he pleases.

But the farmer is his own master; he is "lord of the soil," he can go and come when he pleases. He is not obliged to do his work to suit this one or that one, but to suit himself.

Another reason why the farmer should be contented, is, he is always sure of a good living. Oftentimes mechanics cannot get employment; but the farmer is never out of employment. Let the times be ever so bad he is sure of a good living.

That the farmer has more piece of mind, or in other words is more contented than other men, would naturally follow from the fact that his property is invested safer, that he is not in constant anxiety about losing it, and that he is more independent, and always sure of a living If the farmer has not reason to be happy, pray who has?

Behold the farmer once more, as he returns from his work at night; see him passing from one field to another surveying the works of his hand One field is covered with waving corn, another with rustling grain; another is covered with a rich crop of tall bending grass, ready for the mowers' scythe His trees give evidence of a bountiful supply of good fruit; and his cattle are quietly grazing upon a neighboring hill. As he approaches his house he is met by his prattling child, who has long been waiting his return, and who lispingly relates to him the trifling incidents of the day; and last, though by no means least, as he enters his peaceful home he is greeted with an affectionate smile by his lovely wife. Who would not be a farmer?—*Bost. Cult.*

Liquid Pickle for Meat.—Brown sugar, bay salt, common salt, each, 5 pounds; saltpetre, 1 pound, pimento (bruised), 5 ounces; black-pepper (bruised), 3 ounces; nutmegs (rasped), 1 ounce; boiling water, 5 gallons. Mix. This not only imparts a fine red colour to the meat, but also gives it a most delicious flavour.

To Renovate a Razor Strop.—Rub a little clean tallow over the surface, and then put on it the light top part of the snuff of a candle; rub it smooth. Excellent.

Improvement made in Agriculture in the Western District.

It gives us great pleasure in being able to publish the following spirited communication from George Bullock, Esq., Secretary to the Malden and Anderdon Agricultural Society. Prize lists of local exhibitions are *entirely excluded from the columns of the Cultivator*, and by adopting this course, we shall not be liable to recieve censure from any. If we admit mere statistical information from one society, we must, in justice to other societies, admit all who require it; and if the latter should be done, our magazine would become comparatively worthless as a work worthy of being bound as a book of reference. We make this explanation to satisfy our correspondent that his proposition could not be acceded to on our part. The report furnished us by Mr. Bullock is of that character, that all who read our journal will value it highly for the information it contains, and especially so, as it relates to a section of the province that is but very little known to a large share of our readers, and at the same time may be looked upon as the garden of Canada, in point of natural advantages.

AMHERSTBURGH, *Oct.* 3, 1846.

Mr. Editor:

The second Agricultural Show of the Union Society of the Townships of Malden and Anderdon was held, in connection with the Fair, at Amherstburgh, on the 1st inst.

The attendance, show of stock, grain, cheese, butter, fruits, vegetables, &c. &c., was excellent, notwithstanding the unfavorable state of the weather,—for the rain fell in torrents nearly the whole day. There was a marked improvement on this occasion over everything exhibited last year; and from the spirit manifested by the members, and even by the inhabitants generally, there can be no doubt of the prosperity of this society for the future—as every member left this Fair with a full determination of doing his utmost towards making the next Fall Show worthy the attendance of friends from a distance.

Some young prize stock purchased by the Society at the New York State Fair, consisting of Durham and Devon Calves, and Merino Sheep were sold by auction to the members of the society, and the prices realised were such as might induce the society to make a practice of importing young stock of the first class on a larger scale in future. Already, within the narrow bounds of our society, (only two townships, and one of them a very young one) we can boast of some of the purest stock of the Durham, Ayrshire, and Devon Cattle, and of the Southdown, Leicester, and Paulor Merino Sheep, besides numerous grades from these and others of improved breed.

The Fruit shown on this occasion was of the finest quality, and could not be equalled in Canada; the Grapes and peaches (grown by James Dougall, Esq.,) for which our soil and climate are so suitable, could hardly be excelled on the whole continent of America. Some of the peaches exhibited by that gentlemen, measured 11½ inches in circumference, and weighed as many ounces. They are called the *montrous pompone*. The grapes were golden chasselas, white sweet water, Isabella, and Catawaba, all grown in open culture, without any artificial aid, and were acknowledged to be of the largest size and of the finest flavor.

We are glad to learn that you have organised a Provincial Agricultural Society. If it were not for the lateness of the season some of our members would have shown, on the 21st inst., a sample of the stock and produce of the Far West. But the time was too late for us in this distant part of the Province, and I would beg to suggest, that the best time for holding the Provincial Show in future, would be immediately after the New York State Fair—say about the 20th of September. The weather is then usually good, and as many of the members of societies from this part of the province attend that Fair, they could, as it were, kill two birds with one stone, and go from that Show to the Provincial one.

Finally, Mr. Editor, the farmers in this

part of the Province are not discouraged at the withdrawal of protection in the English market. They are satisfied that they can take care of themselves; and if the wheat crop will not pay as formerly, there are other branches that will pay, if rightly managed, even better than that ever did: such as raising wool, stock, butter and cheese, the produce of the dairy, for which this fine District is so admirably suited. Some of the spirited inhabitants of this place have built the largest propeller in Canada, and fitted her out in a superb style. She is now on her first trip to Kingston, and as soon as the canals are finished, she and others of her class, which will be shortly placed on the stocks here, will be able to take our produce, butter, cheese, fruits, &c. to Montreal and Quebec direct, without transhipment, and in as short a time as it now takes from Toronto, which will give this distant section of the province a start, and enable it to compete advantageously with those places which are at present enjoying the privilege of being nearer to the large markets; and the facilities these propellers will give to emigrants or persons wishing to remove to the Western District, will no doubt be taken advantage of when the climate, soil, &c. comes to be thoroughly known.

Yours, &c.

GEO. BULLOCK.

THRASHING MACHINES.—Our Correspondent in Restigouche, New Brunswick, who requested us to forward him a Thrashing Machine, may be surprised that we did not send him the one he ordered last autumn It is candid that we should give the reason, which was nothing more or less, than we had not sufficient confidence in the machine to send it so great a distance. As soon as we made up our mind respecting the character of the machine in question, we at once transmitted the order to a machinest in the City of New York, requesting him to fulfil the order as speedily as possible. The reply we received was, that it was too late in the season to ship goods to New Brunswick. We make this explanation to satisfy our correspondent that we did our best to serve him.

Peaches killed by Frost.—On cold frosty nights the cold air settles into the valleys, and the air being also stiller, permits the ground to become much colder, by radiating the heat to the clear sky above. Hence valleys are more liable to frost than hills. Dr. Kirtland of Ohio found that a thermometer on a cool night, in the valley, sunk down to 27°, while on the neighbouring hill, only sixty feet higher, it never sunk lower than 32°, or the freezing point. There was a hard frost in the valley, but none on the hill.

Peach trees in warm valleys have their fruit buds swollen soon by warm weather; then cool weather succeeding, destroys them. Hence it is often found that the peach crop on hills is good, but in low places is entirely destroyed. One cultivator lost only one crop in twenty years on his orchard which stood on a high hill, while his neighbors, whose trees stood low, lost every third or fourth on an average.

An interesting case, showing the preceding principle, occurred lately within the writer's observation, when a very severe and late spring frost killed entirely all the young leaves on the lower part of hickory trees standing in hollows, while those on the upper parts of trees were untouched by frost, and remained as fresh and green as ever.—*Cult. Almanac.*

When we are alone, we have our thoughts to watch; in our families, our temper; and in society, our tongues.

Smoke Protector.—Mr. Wallace has exhibited and explained to the British Association his Apparatus for enabling persons to enter places on fire without danger from smoke, by means of breathing through water. A box of tin, containing the water, is placed on a man's back with tubes connected, forming a ring round the body and straps for the shoulders. A hood of Mackintosh cloth, glazed in front, is put on the head, and being attached to the side tubes, four gallons of water will enable a person to bear the densest smoke for twenty minutes. The Protector resembles the diving apparatus in appearance.

Mastic Varnish.—1 Gum mastic, 5 pounds; spirits of turpentine 2 gallons. Mix with a moderate heat (carefully) in a close vessel, then add pale turpentine varnish, 3 pints. Mix well.

2. Mastic, 1 pound; white wax, 1 ounce; oil of turpentine, 1 gallon. Reduce the wax and mastic small, then digest in a close vessel, with heat, until dissolved.

Science Facilitates Money Getting.

Science, in its most comprehensive signification, means knowledge. Knowledge is our cognition of material and spiritual things through the medium of our external senses, internal consciousness and reasoning faculties. To know, implies, a use of our mental faculties. To know a thing is to comprehend it fully, in its essence, its properties, its uses, and all its relations to other things. The field of science or knowledge is boundless as the universe. It is wide enough and broad enough to engage all our faculties forever, and continually elevate them in the scale of developement. It need scarcely be mentioned here that the mind is progressive in strength and power,—that its operations are all at first exceedingly limited and simple, but gather force and comprehensive capacity until it becomes able to span the universe and unfold its mysteries. The child is weak in body and mind, but the truly developed man is strong physically and mentally. But if a person grows up in the exercise of his bodily powers only, he will remain a child in mental manifestations. His course through life, as marked out by himself, will exhibit a childlike vascillation, in decision, unsteadiness of purpose, and ignorance of the greatest advantage and profit. These truths are exhibited in daily experience, and acknowledged by all. Science gives strength, energy, activity and foresight to the mind, and hence its indispensable utility.

1. The first position I shall take, is, that education is as necessary to the farmer as to him of any other pursuit—the learned professions are not excepted. Farmers and all, have seemed, and still seem to acquiesce in the ruinous sentiment, that a thorough education is only necessary for those who intend to obtain a livelihood through the medium of a profession. Hence they have agreed to let them monopolize all the learning of the age. A farmer sends his son to an Academy or College, and this deemed sufficient evidence that he is destined for some elevated station where he can get a living by his wit. Ask a farmer why he does not provide his sons with the means of a good education, that is, more than is obtained at a common school, and he will generally reply, "O, they are only going to be farmers, and it is useless to waste money in giving them knowledge." Against this sentiment I protest, here, now, and forever. Nothing can be more suicidal. But, says one, a farmer can chop, log, plow, sow, thresh and go to mill and market without much "larnin," but how can the professional man get along without a good education? A professional man can succeed as well, yea, even better without mental discipline, than the former. It is not known, that, while the people are uncultivated, humbug is more available for the lawyer, physician and clergymen, than real science. They are well aware of it, and the world is running over with humbug. But does the farmer's business afford any chance for the successful investment of this species of capital? The ignorant Doctor can turn humbug to a profitable account, but the ignorant farmer cannot, and is a continual loser by his ignorance. Let, then, the sickly sentiment be banished. The farmer needs as much knowledge as any other businessman. This point will be further elucidated by what follows:

2. But why is science necessary to the farmer in money getting? I answer, for the same reason that it is necessary for any other individual whether in commercial or mercantile, or professional business. Taking mankind indiscriminately, the uneducated are rarely successful in any branch of business. There may be many examples to the contrary appearing, but all these it will be found are educated in branches most necessary to their pursuit, if not by the instructions of others, by their own activity, industry and energy of thought. Some, (but they are few) with strong natural powers early learn to think, and make life a continual scene of study, especially in all matters pertaining to their occupations. Small incidents, or apparently trifling circumstances will sometimes give the mind such a direction as will prove of incalculable advantage. It takes but little in early life, to render many individuals favourites of fortune, or the scattered sons of adversity. Hence it is no argument in favour of ignorance that some unschooled individuals are successful in money getting. In any capacity to which he may be called, a man asks according to his power. There are two kinds of business power—knowledge and money. Money without knowledge is useless, and soon flies to the winds, but science without money is productive, and will soon command it if wanted. This is the infinite advantage of the former over the latter,—hence money cannot be so profitably invested as in disciplaining or educating the young. One thousand dollars are worth, at least, one hundred per cent more expended on the education of a farmer's son,

than in leaving it to him at last with common ignorance. The mind is capable of infinite expansion, and is able to reason, generalize and conclude in proportion to its strength and knowledge. The naturally strong mind is doubly strengthened by discipline, and thus its reasoning connected, while the weaker intellect of him who would be the dupe and victim of the cunning, would be rendered mighty enough to cope with the world, to succeed in business, and maintain its rights. Hence, the weak need discipline, if anything more than the strong. But it is difficult to discriminate in youth, and the safe rule is, to educate all. In every business enterprise, there are many things to consider and forsee in order to ensure success. The farmer has as many difficult problems to solve, and as many intricate calculations to make, as any other individual. The correctness of his solutions and the accuracy of his calculations, depend upon the strength of his faculties, and the extent of his knowledge.

3. But wherein does science directly aid the farmer in money getting? It enables him to seize upon every hint, every new occurrence, and every phenomenon that occurs in the range of his pursuit, and turn them to profitable account Having a mind well disciplined and fruitful in resources, he is able to take such advantage of even familiar things and perpetually recurring incidents, as would escape the attention of the ignorant. The falling of an apple was nothing new or extraordinary in the course of nature, yet a Newton seized upon the trivial occurrence and developed the great law which governs the universe. Almost all great discoveries have been occasioned in such a manner as to excite our astonishment that they were not thought of before, after being explained to us by the discoverer. Yes, "why where they not thought of before?" Simply because there had been no one who thought enough to think of them. The unintelligent farmer does little more than follow in the footsteps of his father, and if the father laboured under disadvantages and met with frequent losses that might have been avoided he also is toiling for nought, under this erroneous example, not knowing how to correct it. He does not dream that any improvement can be made, and frequently persists in following the old practice long after others have made thousands by adopting a new course. Many, too, likewise ridicule what they call "book farming," as though all the routine of their business were simple and known by every farmer's boy. To estimate the simplicity of agriculture, let us look at it in its reality. Besides embracing much of almost every branch of learning it draws extensively upon Chemistry, Mineralogy, Geology, Botany, and Meteorology. The first teaches the composition and properties of the different soils, and species of vegetation, together with that of light and heat, air and moisture, and every material thing* The second teaches the description and classification of the extensive variety of minerals which make up the globe, and constitute the basis of the soil, while its hand-maid, Geology, teaches the manner in which they enter into formation of the earth, the signs by which different soils may be known, &c. Botany describes to us everything that vegetates and blooms, and Meteorology directs our attention to the winds and the storms and enables us to prognosticate the changes of the natural elements. To these may be added vegetable Physiology, which teaches the influence of light, heat, earth and water in producing vegetation By these sciences we are enabled to know exactly the adaptedness of different soils to different grains, grapes and plants, before planting, and hence the farmer can give each kind of seed its most natural nurse without incurring the loss and delay of repeated failures. He is also thus enabled to guard his farm, and keep each field in its original vigor and constant productiveness. Had we time and space, we might give some idea of the *simplicity* of agriculture. With proper knowledge, the farmer might make more money with a pleasurable amount of toil than he now does by constant slavish labour. Ohio is not half as productive as she should be with the same physical effort She has animal strength enough, all she needs is mental power.

Is not then, the business of the farmer as arduous, and does it not require as much varied learning as any other pursuit? And if discipline and science facilitate money getting in the professions, will they not much more facilitate it in agriculture? The lawyer, doctor and clergyman deal with man, while the farmer deals with nature. The study of the human character may be intricate, but the study of nature in her greatness and grandeur is not less so.

But let it not be understood that science and a cultivated mind are valuable only in facilitating money getting. No, no, they have a nobler, loftier end in view—the elevation of the charac-

ter and the promotion of human happiness. They have in charge the mighty spirit of them, and their sublime mission is to exalt it above the dust of earth and the glittering darkness of gold and corrupting wealth. They facilitate money getting only that man may have time and means to ennoble himself, and grow up into all perfection. This mission of sciences will be considered in my next Here I close for the present, most earnestly commending to the attention of the reader the only eternal interests of his being—the interests of the glorious mind.---*Ohio Cult.*

L. A. HINE.

Cincinnati, O.

The Provincial Advertiser.

The friends of Canadian enterprise will doubtless rejoice to learn, that a Newspaper is about being established in the Province, to be devoted almost exclusively to the advancement of their interest. In publishing the *Provincial Advertiser*, we have only one great end in view, viz:—the development, if possible, of every known source of wealth in this naturally highly favored country. Canada contains all the necessary facilities to maintain a dense population in comfort; and indeed few countries can boast of a more healthy climate, fertile soil, and greater facilities for an honest, industrious man, of acquiring an independency from the fruits of his toils; and this being the case, it is important that the powerful engine—the PRESS should be employed in promoting such objects as have a tendency to raise the character of the country and the people.

It is with extreme regret, we are obliged to acknowledge, that, in many important particulars, the people of this Province are behind their neighbors; *this should not be the case, and need* not be, if all who have stake and influence in the country, would unite their exertions in bringing about salutary changes in those laws that have a prejudicial bearing upon Agriculture, Trade, Commerce, or Manufactures. *Holding the doctrine to be true*, that every man has the power of exerting a beneficial influence upon society, or, at least, in the immediate circle in which he moves, after much reflection, we have come to the conclusion, that the demands of the country required just such a Journal as we are about publishing; and as no one else could be induced to publish it, we have resolved to perform the task ourselves to the best of our ability.

The Provincial Advertiser, so long as we shall have the honor of conducting it, shall be a fearless advocate of truth; and without favor or affection, shall endeavour to encourage real merit, whether it be found in the highest or lowest walks of life. The subjects discussed in its Editorial columns will be those that will have a direct bearing upon Domestic Manufactures, Emigration, Internal Improvements, Trade, and Commerce, and an occasional sketch of the improvements made in the Cities, Towns, Villages and Settlements in the Province. The latter information will especially make the *Advertiser* valuable to those who wish their friends in other countries to be made acquainted with the actual state of things of here. In many important particulars the *Advertiser* shall differ from its contemporaries, and in none more widely than in its strict neutrality to what is generally understood to be the party politics of the country. It shall have but one object to accomplish—the development of the resources of wealth; and only one party to serve—the entire producing classes in the province. Any Journal that is calculated to bring about the ends contemplated by the Publisher of the *Provincial Advertiser*, should have an extensive circulation; and in fact, should be read by every intelligent individual in Canada. The question at issue is, how can this object be secured? The method by which we purpose to get the *Provincial Advertiser* into an extensive and very general circulation is, to put the subscription price so low that it shall virtually cost nothing to the subscriber.

The *British American Cultivator*, with its present circulation, remunerates its conductors to such a degree, that they not only feel encouraged to persevere in the enterprise, but are determined to give a *bonus* to each subscriber, in the shape of a Canadian Newspaper, to be issued once per month, on a sheet the size of one of the largest in the country.

Some individuals may object to a Newspaper being issued so seldom as once per month, but to show that this objection may be remedied, we are prepared to make the following liberal offer to our Patrons:—as soon as the circulation of the *Cultivator amounts to ten thousand* subscribers the *Provincial Advertiser* shall be issued semi-monthly; and when it amounts to *fifteen thou-*

and subscribers, it shall be issued tri-monthly; and when it amounts to *twenty thousand*, the *Provincial Advertiser* shall be sent to all the subscribers of the *Cultivator* once per week. It appears to us to be a most trifling task for any man who has any influence at all, to obtain *twenty subscribers* to a half-dollar Magazine, containing such a vast fund of practical useful information as is contained in the *Cultivator*. If the six thousand subscribers to this work would set about the task in good earnest, they could in a single day obtain even a greater number than we require to warrant us in issuing the *Provincial Advertiser* once per week; and in all probability very many of our friends will put forth an effort to obtain as large a circulation as possible, in the hope, that before one half the coming year is elapsed, we shall be under the necessity of forwarding to each subscriber the *Provincial Advertiser* weekly.

The first two numbers of the *Provincial Advertiser* shall be sent to all the subscribers of the *Cultivator* for the year 1846, and the subsequent numbers to only the subscribers of our Magazine.

The foregoing announcement will serve to show, that the conductors of the *British American Cultivator*, are desirous of making their work not only a cheap, but an efficient organ for the Agricultural and Manufacturing classes. The friends of the enterprise will evince, we trust, a disposition to keep pace with the improvements of the day; and the moment we are made satisfied that the people of this Province are anxious to be in possession of the best experience and practice of agriculture, shall we put forth renewed exertions to furnish them with all the information they could possibly desire. If the farmers of Canada desire the *British American Cultivator* and *Provincial Advertiser* to be conducted with much ability and spirit, they must put their shoulders to the wheel, and procure for these works a large circulation. We are willing to make any reasonable amount of risk and sacrifice for their good, but in doing so, we want to see the classes whose organ we profess to be, alive to their own and their country's best interests.

Back Numbers of the Cultivator.

If any of the subscribers of the *Cultivator*, for 1846, have failed in getting the work complete, by furnishing us with a list of the deficient numbers, they shall be transmitted by mail without delay. The publishers are most anxious that every subscriber shall get his full supply of numbers. We do not hold ourselves responsible for the negligence of others. If a person pays his subscription to an Agricultural Society, or to an individual, with an understanding that certain benefits shall be derived, he has a full right to look to the party who received the money for the proposed benefits, and not to others. It might so happen, that strangers may go through the country and represent themselves to be Agents for our work; and to guard against such imposters, we wish it to be distinctly understood, that we have no travelling or paid Agents of any kind. Agricultural Societies that adopt the plan of supplying their members with the *Cultivator*, are our Agents; and where this system is not put into practice, any respectable person may use his influence in his neighborhood to get subscribers at the reduced rate of 2s. 6d. per copy.—Where the former method is not put into practice, we hope that the latter will receive the favorable consideration of an enlightened public.

A good plan of making Manure.—A writer in the *Southern Planter* recommends the following plan of making manure, of which we highly approve:—

"Have a pit thirty or forty feet square, and two or three feet deep, with a good bank around it. In this pit let the materials, viz: oak leaves, pine tags, earth, &c, be put in suitable layers; on which throw all the slop water, soap suds, yard-sweepings, as ley, contents of chambers, and in short, every thing that can be conveniently got together. It may be at any convenient distance from the kitchen, so that the slop-water, soap-suds, &c. may be conducted to it by a trough. Be sure that no water gets into it in any other way. If at any time it should become offensive, start your teams immediately and cover it with *sand* or earth sufficient to prevent the escape of any effluvia." We say we approve of this plan of making manure; but we think it might be improved by sowing plaster over each layer of the materials of which it is composed, and occasionally, say at intervals of two or three weeks, sowing it over the surface, by which means all unpleasant smells would be avoided, and the enriching gases saved to fatten the land. Any pit which may be made for the purpose should be protected from the weather.—*West. Farmer.*

Indian Corn.

Having lived in America six years I can speak with confidence as to the use of Indian corn, for the last fourteen years we have used it almost daily in our family, which is large I have lately been applied to for receipts, and to save trouble, and if possible to aid the spread of this excellent article of diet, I have had those which are most useful printed. I have just seen Dr. Bartlett's pamphlet, from which I think no one would learn how to use corn in any shape. I send you a sheet of my receipts, hoping you will further their circulation by publishing them I sent some to Father Matthew, who tells me they are the plainest and most useful he has seen, and that he has caused a few thousand copies to be reprinted.—*B H.*

Yellow Corn is far more nutritious, and tastes better than white corn. Indian corn meal must not be ground too fine; it generally requires to be sifted and the coarsest bran taken out; this when boiled is good food for pigs. Bread cannot be made of Indian meal alone: one-third of meal to two-thirds of wheat flour is quite as much as the bread will bear; more meal would make it too sweet and sticky. To make bread, take for example, 7lbs. of Indian meal, and pour boiling water on it till it is all wet—it never knots like flour; then let it stand till it becomes milk-warm, and stir it in a stone and a half of flour with the hands; proceed then exactly as you would with wheaten bread; of course but little more water will be required. It takes rather longer to bake than wheaten bread.

Indian Meal Dumplings are made exactly like suet dumplings; or if you prefer them without suet, mix them with milk instead of water; they require longer time in boiling than flour dumplings If any is left to be cold, it is good cut in slices and fried.

Johnny Cake, which is, in fact, a pudding, and eaten hot, is made thus: Take about two pints of Indian meal, and mix with it about one table-spoonful of melted pork lard or clear beef dripping; dissolve one tea-spoonful of salt and half a tea-spoonful of soda in a tea-cup, with cold water; pour milk into the meal till it forms a stiff batter; add the salt and water, and one beaten egg. Grease a shallow tin, such as is used for Yorkshire puddings, and pour the batter in. Bake it in a brisk oven for about two hours. You may make Johnny Cake without milk, by putting rather more lard in it; or if you please you may may make it with milk and water, as convenient.

N. P.—Johnny Cake should never be made thick; an inch deep is enough.

Mush is Indian meal stirred into cold water, or milk and water, quite thin, and then boiled for about half an hour. It thickens very much, so that is necessary to stir it frequently, and to add cold water occasionally. It is also called Indian hasty pudding, and is usually eaten with treacle or with milk.

Fried Mush.—If any mush be left, stir in more Indian meal till it is very stiff; cut it out of the pan in pieces about half an inch thick, and fry in beef or pork lard. It is excellent.

Boiled Indian Pudding.—Make a stiff batter, by stirring Indian meal into a quart of milk or water. Add two table spoonfuls of flour, three of brown sugar, two tea spoonfuls of ginger, and two of salt. If you make it with water, mix in a little chopped suet and one egg, but with milk these are not required. Tie rather loose, and boil for three hours at least.

Baked Indian Pudding —Boil three or four pints of milk, according to the size of the dish you mean to fill, and stir in Indian meal till it becomes about as thick as stiff batter. Stir in two or three ounces of butter, and half a tea-cupful of brown sugar. Add according to taste either a little grated lemon peel or any spice you like. Butter a shallow earthen baking dish, and bake in a moderate oven for three-quarters of an hour, or longer if needful. When cold it will easily turn out, and this pudding is better cold than hot.

Plain Indian Pudding —Scald a quart of milk, and stir in seven table-spoonsful of Indian meal, one tea-spoonful of salt, one of ginger or cinnamon, and half a tea-cupful of treacle. Grease a baking dish, and bake for about two hours.

Indian Meal Gruel.—Stir a table-spoonful or two of meal into cold water; boil it till it is thickened as much as you like.

Indian Pancakes.—Mix about a pint of meal with sufficient milk or water, and one beaten egg to make a thin batter; fry them in as small a quantity of lard as possible.

Corn Cakes or Corn Bread.—Pour boiling water with a little salt in it on Indian meal; mix it as stiff as you can with the hands, roll it into balls the size of an orange, then flatten the balls, till the cakes are about half an inch thick Fry them in a small quantity of beef lard, merely sufficient to prevent them sticking to the pan or burning. They are to be eaten hot, generally as a breakfast dish.

Sweet Corn Cakes.—Mix one quart of milk, one beaten egg, a tea spoonful of salt, and half as much soda, and two table spoonfuls of treacle. Pour this on meal and stir it well till it becomes thoroughly mixed, and stiff enough to make it into flat cakes like those in the last receipt. Fry them for fifteen or twenty minutes.

Light Corn Bread.—Stir four pints of Indian meal into three pints of tepid water; add one large tea-spoonful of salt, let it rise for five or six hours, then stir it up with the hand; use as much dough in each roll as can be conveniently shaped in the hand; make oblong rolls about an inch and a half or two inches thick; bake in a brisk oven.

Plain Corn Bread —Take six pints of Indian meal, one tea-spoonful of salt, four pints of hot water, and mix thoroughly with the hands; let it stand for half an hour or more, then form it as in the last receipt, and bake it in a hot oven.

Remarks.—All kinds of corn bread require a hotter oven than flour bread. Never grind the corn too fine, or sift it through a fine sieve; no

matter how coarse the meal if the husk is removed. The hotter the oven or Dutch oven, so that it will not burn the dough, the softer and sweeter will be the bread. *Hominy* is a dish hardly known in this country, except by name. It is a western word, and a dish most common in the western States of America; it is simply "hulled corn." The way to prepare it is this —Send the corn to the mill and have it cracked or ground as coarse as possible, if there is any meal amongst it sift it out, and retain only the cracked corn for hominy. The mill will have disengaged the skin, so that the cook can wash it off, this should be done in cold water, rubbing it with the hands, and changing the water two or three times. Another method of getting rid of the skin is to soak the corn for about ten minutes in soda and water, or in lye, and then pound it in a mortar; but this is too tedious. When the hominy is thus prepared, put it into a large pot of cold water, and boil it steadily for six or eight hours. Add hot water frequently whilst boiling, otherwise the hominy will burn and become dark. It should be perfectly white, like well boiled rice. Send it to table dry and hot. The usual way in the western States is to boil hominy twice a week, and set it by in an earthen vessel for daily use. When wanted for breakfast or dinner, put a piece of butter into a baking dish, melt it, then fill the dish with hominy, well mashed down; let it heat thoroughly, and it is fit to eat. Some people allow the bottom to bake, then turning it topsy-turvy in the dish, the crust serves to keep it hot. For frying fish, use coarse Indian meal instead of bread crumbs. For stuffing, use Indian meal instead of grated bread.—*Ag. Gaz.*

Circular Saws.

It was may years after the invention and introduction of circular saws in this country, before mechanics would be convinced that there was any utility in them; and even those who were induced to make a trial of them, generally abandoned them after a short time, as requiring more labour and attention to keep them in repair than the value of the use of them; and even now, after this article has come into general use and is considered among the indispensibles there are many, and perhaps the most of those who have the management of them, who still seem to be totaly ignorant of the true theory and scientfic principles of managing the circular saw: they only know to imitate generally, those few who have by the aid of science and native genius succeeded in reducing the management of these articles, to a tolerable degree of perfection. In a majority of cases in which we have observed the management of circular saws, we have found that from one half to three fourths of the power applied to driving them was worse than wasted,—we say worse, because the saws and machinery were actually injured by the application of a useless surplus of power. The most common error consists in giving the saw too great speed, to remedy a deficiency occasioned by the irregularity, and want of uniformity in the teeth of the saw. In most cases, 300 pr.—a little short of one horse power —is amply sufficient for driving an ordinary 12 inch saw, for slitting seasoned planks, yet it is not uncommon to see three times the power expended for that purpose, and the work but poorly done at that. Saws are often driven 2000 revolutions per minute, when 200 would do much better.—It often appears, when a saw is driven with violent speed, that not more than four or six teeth of the saw do any execution, while the others by their friction, use up the power to no purpose. or if all the teeth are of uniform length, and all sharp, the wood is ground into fine dust, like that produced by a common file.—And with the high speed above mentioned, if there be but one horse power applied, and the saw contains 80 teeth, of which ten are cutting at the time, then there can be but half a pound of force applied to each tooth, but if the same power be applied to work but 300 revolutions per minute, then there would be something more than three pounds applied to each tooth. sufficient to enable each, if properly adjusted and sharp, to cut one eightieth of an inch; or equal to cutting 300 inches in length per minute, which is about three times as rapid as the same saw, with the same power would perform under a speed of 2^00. There can hardly be found such an article as a circular saw, whose teeth are perfectly uniform in length; yet it is not a difficult task to adjust them correctly, if the operator has a guage properly adjusted and gives due attention to the subject. In general, the best policy in managing a circular saw is to have the teeth kept sharp and well adjusted and to give the saw a strong but moderate motion.—*Sci. Amer.*

Rushlights.—Make them in the same way dip candles.

Curing Provisions.

A writer with the signature Zea, gives some directions in the *Montreal Witness* in regard to curing provisions for the English market, which may be both useful and interesting. He is in favor of *dry salting*, as it is called, that is rubbing the meat with salt, instead of putting it in brine. This mode, he thinks of great importance; for he observes, "it takes away the blood, cures the meat, condenses it, coagulates the albumen, and renders it not so liable either to spoil or to become salt. Hams and bacon, it is well known, cured with dry salt, can be kept perfectly well, though not one-quarter as salt as those prepared in the brine tub, indeed scarcely to be considered as salt food at all."

The quality of salt he deems of the next consequence. The salt made in "the States, he thinks, is too often impure, though he says the manufacturer might refine it so as to be as good as any other.

Cleanliness is another point which he considers as deserving much attention. He says, "washing the meat in water before finally packing it up for sale, should never be neglected; and care should also be taken to avoid all kinds of dirt. The people of Britain, correctly enough, are very particular in this respect; they like to see the color of meat, and so, partially, to be able to judge of its quality."

"Beef," he says, "should be cut into six pound pieces, and pork into four pound pieces, the former to be packed in tierces of 300 pounds, the latter in barrels of 200 pounds, each containing fifty pieces." "The reason for this," it is said, "is that beef being generally served out to men at sea in greater quantities than pork, it is more convenient to have it in larger pieces, without weighing; pieces of those sizes are also more perfectly cured through than larger pieces, and when of a uniform size they pack better. The pieces of beef being larger than those of pork, it is obviously better that larger casks be employed to hold them more conveniently. Even when intended for domestic use, uniformly sized pieces are more convenient than those of various dimensions, requiring to be cut before being used, the piece left being thrown back often carelessly into the cask, and liable to get rusty in consequence."

He is not in favor of the use of saltpetre. Its only value, he thinks, is to give color to the meat. The points most deserving attention, he sums up as follows:

"1. The pieces must consist of, for beef, six pound pieces, and pork, four pound pieces.

"2. The salt must be good, and but very little saltpetre must be employed.

"3. The meat must be dry rubbed for three or four days, at least once a day, to extract a certain quantity of water, and to chemically alter the meat.

"4. The meat must be put into pickle, so as to cure it sufficiently; in this it should remain ten days, or until it is required to be packed.

"5. It must be well washed in water, if necessary scraped or cut.

"6. Packed away, if beef, in tierces; if pork, in barrels, with good coarse salt; the packages filled up with clean pickle.

"For dried or smoked meats, the dry salting alone should be employed; they will be found of a perfectly distinct flavor from these cured alone in pickle; and although slightly salted, keeping far better than provisions so highly salted by the wet process, as to be scarcely eatable.

"The use of sugar or molasses is daily gaining favor, among packers; as preserving meat in a superior manner, having a finer flavor, keeping better, and never becoming rusty; and however old, never excessively salt. It has also been asserted on high medical authority, that the use of sugar in curing meat, would prevent that fearful disease sea scurvy. It has been used in curing hams for a long period, indeed a good flavored ham cannot be prepared without it; but it is of the greatest importance in curing beef, which is to be kept for a length of time, or which is required of a fine flavor.

It is used in the first process, along with the salt, for dried provisions---say one pound of sugar, or one pint of molasses to four pounds salt. With pickled meats, it is used in the last process along with salt, to pack up the meat in the cask, say about half of each, sugar and salt.

"As regards the kinds of beef to be packed; the best description consists of prime mess, the pieces rejected from mess causing too great a loss to the packer. The coarse pieces of the leg, which are rejected from prime mess, can be boned, dry salted, and dried; in which way they yield as good a return as the rest.

"Owing to the great local demand, the most desirable description of pork consists of mess: the rib pieces of hogs weighing over two hundred pounds should be so packed: The hams and cheeks, as also the fore part, consisting of the neck and shoul-

der in a piece, should be cured and dried; the fashion of removing the bones from the latter is worthy of adoption, as when the bone is left the meat is much more apt to spoil, besides being an awkward joint. *Prepared this way, the pieces* rejected fetch as good a price as the rest. When the pig is too small for mess, but large enough for prime, the latter should be made, reserving the hams and cheeks; *if too heavy for prime, remove* some of the rib pieces to add to the mess; prime mess neither suiting the British nor Canadian markets; whereas prime suits the British and West India *demand better than even mess.*"

It is known that provisions are sometimes preserved by being packed in air-tight vessels. In relation to this process, the writer from which we *quote observes:*

"Provisions are preserved in many places without salt, by putting them together with water into metal cases, putting the cases into water to boil, converting the water *in* the case *into* steam, thus expelling the air, the metal case is then soldered down. Provisions thus put up keep unaltered for any length of time.

"The only objection is the expense, they having generally been prepared at places where provisions are costly, and put up in small packages. By packing where provisions are cheaper, and using large cannisters, I do not see any reason why they should cost more than if prepared with salt.

"But it has often occurred to me, that the preserving of animal food might be simplified by filling up the packages with melted fat in lieu of water; that of the animal to be packed, being preferably employed, in which case wooden casks might be used, and boiling would not be necessary. The meat should be free from large bones, and immersed in hot fat long enough to expel the air, then put in a cask previously saturated, the fat poured on as filled.

"For sea use or export to the West Indies, this article would be invaluable, and would be cheaper than the usual mode of curing in inland places, where salt is expensive, as all the material required would be on the spot, the fat selling as well with the meat, as if, as usual, rendered into tallow, and culinary purposes could be easily removed, either by exposure to the fire, or immersion in boiling water."

"In the *Liverpool Times*, I find the following paragraph, under the head of "New Important from America:

"'*Some barrels of fresh pork have arrived* at this port from America. It is preserved fresh and wholesome, by filling up each barrel with melted lard.'"—*Alb. Cult.*

Compound for Fattening Cattle.—Flax-seed and oil-cake have long been considered very valuable for fattening cattle. The English farmers *prize these articles highly*, and great quantities are imported and used in the British islands. Oil-cake is even carried from this country to fatten English beef. One great advantage which the *English* farmer thinks he derives from the use of it, is the improved quality of the manure, and this is considered of such consequence as to balance a large portion of the expense of the cake. Flax-seed or linseed *oil* has likewise been sometimes used, mixed with bran, &c., for fattening animals, and the effect has been a very rapid gain. We have occasionally used flax-seed for cattle with good advantage, by boiling it and mixing with meal, cut hay, &c. We recollect the practice of one man in particular, who, more than twenty years ago, was considered to have great success in fattening cattle. He boiled a quantity of ground flax-seed, or instead of that, pulverized oil-cake, with potatoes, and scalded in meal, (either from barley or corn,) in such quantity that when the mixture was cold it could be cut out in pieces, and in that shape was given to the cattle while they were in their stalls.—*Al. Cult.*

Mixing Manure with the Soil.—A very great loss which most farmers sustain, is from a want of thorough admixture of manure and soil. The manure is thrown on the land, and spread in large lumps; the plow perhaps but half covers them, and forms only a mixture of clods and unbroken masses of manure, entirely unfited for the fine fibres of the roots.

One of the most useful practices is, to harrow the surface of the *ground from eight to twelve* times after the manure is spread, and before it is plowed in, thus breaking it up as finely as possible, and mixing it with the finely pulverized soil. A *farmer who has adopted this practice is of the* opinion that manure is thus of more than double the value to the first crop, that it is in the usual way of plowing in. When it cannot be plowed *immediately after spreading, the harrowing mixes* it and prevents evaporation into the air.—*Cult. Almanac.*

How to raise "Giant" Asparagus.

Mr. Editor:—There are sold in the seed-stores several sorts of Asparagus, which claim to grow to unusual size, and produce giant stalks. I have bought and planted these sorts, and have found them not perceptibly different from the common old sort.

I want to tell you and your readers, if you will have little patience with me, how I grow common Asparagus, so that it will always rival any giant production, whether Brobdignag or Kentucky. Every one who has seen my beds, has begged me for the *seed*—thinking it a new sort—but I have pointed to the *manure heap*—(the farmer's best bank) and told them that the secret all lay there. The seed was only such as might be had in every garden.

About the 1st of November—as soon as the rost has well blackened the Asparagus tops—I take a scythe, and mow all close down to the surface of the bed; let it lie a day or two, then set fire to the heap of stalks; burn it to ashes, and spread the ashes over the surface of the bed.

I then go to my barn-yard; I take a load of clean, fresh stable manure, and add thereto half a bushel of hen-dung; turning over and mixing the whole together, throughout. This makes a pretty powerful compost. I apply one such load to every twenty feet in length of my Asparagus beds, which are six feet wide. With a strong three pronged *spud*, or fork, I dig this dressing under. The whole is now left for the winter.

In the spring, as early as possible, I turn the top of the bed over lightly, once more. Now, as the Asparagus naturally grows on the side of the ocean, and loves salt water, I give it an annual supply of its favourite condiment. I cover the surface of the bed about a quarter of an inch thick with fine packed salt; it is not too much. As the spring rains come down, it gradually dissolves. Every thing else, pig-weed, chick-weed, purslane, all refuse to grow on the top of my briny Asparagus beds. But it would do your eyes good to see the strong, stout, tender stalks of the vegetable itself, pushing through the surface early in the season. I do not at all stretch a point, when I say that they are often as large round as my hoe handle, and as tender and succulent as any I ever tasted. The same round of treatment is given to my bed every year.

I have a word to say about *cutting* Asparagus, and then I am done. Market gardeners, and I believe a good many other people, cut Asparagus as soon as the point of the shoot pushes an inch or two through the ground. They have then about four or six inches of what grows below. The latter looks *white* and temping; I suppose people think that for the same reason that the white part of Celery is tender, the white part of Asparagus must be too. There is as much difference, as there is between a goose and a gander. It is as tough as a stick, and this is the reason why people, when it is boiled, always are forced to eat the tops and leave the bottom of the shoots on their plates.

My way is, never to cut any shoots of Asparagus below the surface of the ground. Cut it as soon as it has grown to proper height, say five or six inches above ground. The whole is then green, but it is all *tender*. Served with a little drawn butter, it will melt in your mouth. If your readers have any doubt of this, from having been in the habit, all their lives, of eating hard sticks of white Asparagns, only let them cut it both ways, and boil it on the same day, keeping the two lots separate, and my word for it, they will never cut another stalk below the surface of the bed.

Yours, &c. T. B.

—*Horticulturist.*

Points of a Good Horse.

Col. S. Jacques' Remarks on the Prominent Points to be observed in the selection of a Useful Horse, more particularly for a Roadster.

I prefer a lightish head, nearly set to the neck; the neck rising promptly and strong from the shoulders and withers, and somewhat crowning or curving at the top, tapering to the head with a strong crest. Shoulders well laid in, spreading well back, something like a shoulder of mutton. Chest deep, and a little projecting. Withers rising moderately high, and inclining well into the back. If the withers are low and flat on the top, the horse will be inclined to plunge to the ground, and when fatigued will stumble or fall. Neither must the withers rise too high, as he will then appear as though on stilts; both extremes are serious impediments to fine and safe action. Ribs should be well rounded out. Back strait and short, well coppeled, that is, the hips well thrown forward, forming a strong loin, and giving a long lever from the point of the hip to the hock-joint

of the hind leg. The horse should be a good length from the point of the shoulder to the extreme point of buttock. Dock strong, and well covered with hair. Close and snug immediately under the dock. The muscles on the inner part of the thighs should be full and well shut togethe. If there is a large cavity under the dock, the horse will be inclined to scour, and is probably only a door-yard horse.

The neck, head and body form a lever, resting on the fore legs as a fulcrum, the head being at the end of the lever. If the neck be very long and the head heavy, or if the neck be quite short, and the head short and light, either of these extremes very much effects the regular clips and action. The whole machine should be of good proportion.

The fore-arm is a very important lever as regards the safety of a roadster. The legs should be clean and free from blemish, and when in motion move true, and free from cutting or wabbling. The feet should be round and steep; heels broad; coronet and posterns of medium length. Shank or cannon, short, broad and flat, showing the tendons or sinews. The knee large and well dropped; the arm above the knee long, and the muscles large and full. The top of the shoulder where matched to the withers, should not be so heavy loaded with muscles as to impede their action. No objections to the fore-feet moving pretty close, but not so as to cut.

Much depends on the form of the hind leg and the power of that lever, as regards strength and speed. The shank, hock and thigh should be broad and flat, something like that of an ox.—*Farmers Gazette.*

Candles.—Prepare your wicks about half the usual size, wet with spirits of turpentine, put them into the sun until dry, then mould or dip your candles. Candles thus made last longer, and give a much clearer light. In fact they are nearly or quite equal to sperm, in clearness of light.

For a Pain in the Ear.—Take half a pint of claret and a quarter of a pint of wine-vinegar; put in sage, rue, or rosemary; let it boil up, put it into a new mug, with a bottle-mouth and hold your ear close, so that the steam may be sure to go in. As it cools, heat it again and again; and when the strength is pretty well wasted, wrap your head very warm and go into bed.

On the Choice of a Variety of Oats for Cultivation.—Strongly suspecting that the real value of different varieties of oat was unknown, and that weight by bushel was even less applicable to this grain than to wheat, I procured samples of nine sorts, carefully selected by Messrs. Lawson, of Edinburgh. I have not had them compared chemically; I leave that to those great and wealthy bodies, associated for the ostensible purpose of conferring benefits on the farmer. I have followed a simple mechanical process, which any one may follow. The weight of each sort per bushel having been ascertained, the following table was constructed according to the results:

	Weight per bushel of lbs.
Siberian Oat	45
Sandy	52½
Kildrummie	42
Early Angus	42
Hopetoun	41
Potato	41½
Early Dyock	40½
Late Angus	40½
Black Tartarian	39.

The useful part of the oat being the kernel, and it being probable that the proportion of the weight of the husk to that of the kernel might vary so much as to render the weight per bushel a deception, 100 parts by weight of each sort were taken, and the husk and kernel carefully separated. The following table shows the result:

	In 100 parts by weight. Husk.	Kernel.
Sandy Oat	21	79
Early Angus	21	79
Late ditto	21½	78½
Potato	22	78
Early Dyock	25	75
Black Tartarian	25	75
Hopetoun	26	74
Kildrummie	28	72
Siberian	31	69

It is curious that the oat at the head of the first table should be at the bottom of the second. There may be as great difference among oats as among wheats in regard to their nutritive qualities, and until this shall have been ascertained by the chemist, we shall not know the real comparative values. In the meantime, there need be no hesitation in preferring the sandy oat over all others, as it is very early and very productive in grain and straw.—*Gar. Chron.*

The Operation of Lime as a Fertiliser.

Is now for the most part satisfactorily understood. Its influence in certain cases and not in others—the equality of its effect, though applied abundantly here and scarcely there—the opinion founded upon experience which prevails in some district, that a large dose effect a permanent improvement and needs not to be repeated; and the idea, equally well founded, which obtains elsewhere, that the annual application of a small quantity is necessary to the maintenance of fertility—have all been satisfactorily explained by the theory, as it now stands of the mode in which it acts.

We wish more particularly to make a remark or two on the application of lime to *newly broken up land*. Whatever theory may assert on the subject, there is no denying of its almost universal fertilising influence in such a case. Every body is aware of this fact, but that they are ignorant of its explanation is evident, by the great abuse which is generally made of the practice. There can be no doubt of the *money* value to the farmer of a knowledge of agricultural theory. From the use and abuse of lime as a manure we could bring many illustrations of this. Whether the necessity for its application arise from a faulty texture of soil, which it would correct, or from the presence of noxious and compounds, which it would neutralise; whether it would act by inducing the formation of useful organic or inorganic compounds in the soil, or simply and directly by supplying an absent element of food for plants, the merely practical man, who is ignorant of its theory, necessarily makes in every case the same acreable application, and in thus very probably, at the very time that he may be boasting of the superiority of practice over theory, guilty of that which to his more intelligent neighbour appears in the one case as the most obvious parsimony, and in the other as the grossest extravagance. A fact noticed last year on the farm from which we write, throws some light on correct practice in this particular, especially as regards the application of lime to newly broken up Grass lands.

All the fields on this farm, except those of shallow soil on the limestone rock, have been limed at the rate of upwards of 200 bushels per acre; this was done generally in the second and third years after they were broken out of Grass, and for the most part because the soil was aturally destitute of or deficient in calcareous matter. In one of these fields a ridge was left unlimed, and and that ridge last year (the field was in Wheat) remained definitely marked out from the others by its blank and sterile appearance in the midst of the heavy crop both of straw and grain which surrounded it. What made the appearance more remarkable was the circumstance that, since the application of the lime, now three years ago, the ploughing in that field had been altered—the direction of the furrows had been altered—so that the unlimed ridge stretched *across* the others and embraced a considerable variety of soil—all of them, from its appearance agreeing in this that not having been limed, either they were positively barren, or their fertility remained latent. Now this was the first year that this appearance had been noticed. And we may draw from that fact two things.

1. That newly-broken up land, though it be not manured with lime, contains sufficient store of nutriment for some years' crops; and,

2. That it is better for newly broken up land to remain unlimed for two or three years *except under special circumstances*, for its ready sufficiently fertile, and the expense for some years is unnecessary: and the application would probably cause an excessive fertility, if one may use that expression, such as would injure grain crops by an excessive growth of straw. Now the special circumstances to which we allude, occur in cases (1) where light land on a ferruginous subsoil has remained long under stagnant water, the soil is then found to contain compounds of iron injurious to vegetation which are decomposed by an application of caustic lime, and the elements of which under the influence of that application are induced to re-arrange themselves in forms no longer injurious. And (2) in cases where, as an effect of stag ant water, peat has been formed which, when drained, leaves a soil destitute of the mineral elements necessary to fertility; lime and clay are then necessary application.

The farmer independently of all theory on this subject, will be perfectly safe in remembering that where lime has not hitherto been applied, and where the land contains an excess of vegetable matter, or has long been injured by stagnant water, or is destituted naturally of calcareous matter, lime, whatever the mode in which it was, is sure to have a fertilising influence. Apply lime therefore, a year or two after breaking up your Glass lands, and then maintain the fertility thus prodnced by growing each year on half the land crops for consumption on the land, by selling only grain and butchermeat off your farm, and by bringing on to it oilcake and other food for cattle, sheep, and pigs, you will thus enrich your manure and increase its quantity.—*Ag. Gaz.*

Agriculture as a Profession.

What is the reason that there is so much wealth amongst manufacturers, and so little among agriculturists? Who makes a fortune now-a-days by farming? and why should so many be made by manufacturers? What constitutes the difference. These thoughts have often occured to me since circumstances have changed my residence from the country, and from the society of farmers, to this the stronghold of the manufacturers. Among many other reasons the following two may be adduced: education, and a proper application of capital. Suppose, for instance, a person has two sons to provide for, he determines that one shall become a merchant and the other a farmer. He has laid by, we shall suppose, to start them in business 4000*l.*, which he divides equally between them. If a farmer himself, he is now on the look out for the first vacant farm; we shall suppose the one adjoining his own becomes vacant---"450 acres; a little too large it is true for his capital, but such a fortunate circumstance; I shall have him near home, and such an opportunity seldom occurs." Without any weightier reason than the above, off he starts to the landlord, secure the farm for his son and a lease of 21 years. His son now enters on his duties; he was born and bred on his father's farm (rarely was from home further than the next market town), of course pursues the same course of management that his father did; his capital he finds barely sufficient merely to stock the farm; it is not of question to attempt any improvements this year. "The crops are looking well." However, the disease attacks his Potatoes, or the epidemic his sheep, and he must defer the draining till another year; and so he muddles on the best way he can, trusting to the seasons.

How different is the case of the son intended for a merchant? "Tom," says the father, "you must go and learn to be a merchant." Well? he takes him to Manchester; great care is taken to get him into one of the principal houses; he stays there, say five or six years, going through all the departments, seeing and taking a part in the whole system; he thus acquires business habits and gets an insight into details. For the next two or three years he becomes a paid servant, acting as salesman or buyer, taking a little of the responsibility on his shoulders, and thus gets acquainted with the customers, &c. He will next, perhaps, be induced to go abroad as agent, and in this way he becomes acquainted with the tone of the foreign markets. He is this way enabled to meet, being acquainted with, the wishes of customers; is thoroughly acquainted with the minutiæ of business, and has by this time acquired the necessary knowledge where and how he can invest his capital to most advantage. He will not purchase an article which will stand on his hand; but knowing what is most in demand, will sink his capital at once in its purchase, and will be enabled to turn over his capital several times in the course of the year. All this is the effect of education. Now contrast the two: the farmer embarks in his concern without more knowledge than his father possessed before him, and thoroughly content. If his farher be not a farmer, he requres the supposed necessary knowledge by living a year, or at most two, with a friend who farms. The merchant begins early in life, and his first ten years is taken up with learning how to invest his money to advantage, and it would be strange if, after that time, he were not able to turn it to advantage. The farmer,s capital is at once absorbed with purchasing the stock absolutely necessary for a farm which he has taken three times too large for him, leaving nothing for improvements.

What is the remedy. Let the son, who is to be the farmer, be sent at as early an age to the Agricultural College (there will be more of these by-and-bye,) and let his first three or four years be taken up with being grounded in those sciences which bear on agriculture; let him become intimately acquainted with the theory and practice of agriculture as unfolded in the lecture or seen in the field; let him put his hand to the various manual operations; get a knowledge in purchasing, rearing, and management of stock. After doing this, let him go abroad to the best farmed countries, see the operations carried out on a large scale; then, being now intimately acquainted with everything bearing on the subject, let him take a farm in proportion to his capital, and start; and I am greatly mistaken if he does not double and treble the amount of interest for his capital which he would otherwise obtain It is as inconsistent for the farmer to start business without having thus acquired a knowledge of the theory and practice of his profession, as it would be for the merchant to embark his whole capital on an article which he has not first ascertained will meet the views of his customers. The farmer rarely considers the amount of capital necessary; he unhesitatingly enters on a farm three times the size of the extent of capital he possesses for its proper management; and thus instead (as he shou'd if his capital were sufficient) of putting the whole farm in the best possible position in the first year of his lease, he is contented to dawdle on doing bit by bit every year; his crops continue by the same average quality, and he thus realises no more than a low interest for his capital; whereas, if his farm had been in proportion to his capital, he might have, in the first two years, got all his improvements effected, and during the rest of the term be in the receipt of good crops paying him a high per centage for his capital. I would here remark that the expense of farming well cultivated and improved land is no more than that necessary to farm land in which the improvements necessary to insure good crops have not been carried out; so that the expenses in both cases are similar, while the returns are in many cases double. This will illustrate the advantage of beginning to improve early in the term.—*Ag. Gaz.*

A Chapter on Bread Making.

Wheat Bread of potato yeast.—This is made like bread made with home-brewed yeast, except that you may put in almost any quantity of the potato yeast without injury. Those who use potato yeast like it much better than any other. The only objection to it is, that in summer it must be made often, as it will not keep sweet long. But is very easily renewed. The advantage is, that it rises quick, and never gives the sharp and peculiar taste so often imparted to bread and cake, by all yeast made with hops.

Potato Bread.—Rub a dozen peeled boiled potatoes through a very coarse sieve, and mix with them twice the quantity of flour, mixing very thoroughly. Put in a coffee cup, full of home-brewed, or of potato yeast, or half as much distillery yeast; also, a tea-spoonful of salt. Add whatever water may be needed to make a dough as stiff as for common flour bread.

An ounce or two of butter rubbed into t flour, and an egg beat and put into the yeast, a you can have fine rolls or warm cakes for bre. fast.

This kind of bread is very moist, and keeps ell.

Eastern brown bread.—One quart of rye.

Two quarts of Indian meal; if fresh and sweet, do not scald it—if not, scald it.

Half a tea cup of molasses.

Two tea spoons full of salt.

One tea spoon full of saleratus.

A tea cup of home-brewed yeast, or half as much distillery yeast.

Make it as stiff as can be stirred with a spoon with warm water. Let it rise from night till morning. Then put it in a large deep pan, and smooth the top with the hand dipped in cold water, and let it stand a while. Bake five or six hours. If put in late in the day, let it remain all night in the oven.

Rye bread.—A quart of water and as much milk.

Two tea spoons full of salt, and a tea cup of Indian meal.

A tea cup full of home-brewed yeast, or half as much distillery yeast.

Make it as stiff as wheat bread with rye flour.

A tea spoon full of salt.

A tea cup of home-brewed, or half as much distillery yeast.

Milk to make it so as to mould like wheat bread.

Rice bread—No. 2.—Three half pints of ground rice.

Two tea spoons full (not heaping) of salt.

Two gills of home-brewed yeast.

Three quarts of milk, or milk and water. Mix the rice with cold milk and water to a thin gruel, and boil it three minutes. Then stir in wheat flour till as stiff as can be stirred with a spoon. When blood warm, add the yeast. This keeps moist longer than No. 1.

Bread of unbolted wheat, or Graham bread.—Three pints of warm water.

One tea cup full of Indian meal, and one of wheat flour.

Three great spoons full of molasses, or a tea cup of brown sugar.

One tea spoon full of salt, and one tea spoon full of saleratus, dissolved in a little hot water.

One tea cup of yeast.

Mix the above and stir in enough unbolted wheat flour to make it as stiff as you can work with a spoon. Some put in enough to mould it to loaves. Try both. If made with home-brewed yeast, put it to rise over night. If with distillery yeast, make it in the morning, and bake when light.

In loaves the ordinary size, bake one hour and a half.

Walnut Hill's brown bread.—One quart of sour milk, and one tea spoon full of salt.

One tea spoon full of pulverized saleratus, and one tea cup of molasses, put into the milk.

Thicken with unbolted wheat flour and bake immediately, and you have first rate bread, with very little trouble.

French Rolls, or *Twists*—One quart of lukewarm milk.

One tea spoon full of salt.

A large tea cup of home-brewed yeast, or half as much distillery yeast.

Flour enough to make a stiff batter.

Set it to rise, and when very light, work in one egg and two spoons full of butter, and knead in flour till stiff enough to roll.

Let it rise again, and when very light, roll out, cut in strips, and braid it. Bake thirty minutes on buttered tins.

Raised Biscuit.—Rub half a pound of butter into a pound of flour.

One beaten egg.

A tea spoon full of salt.

Two great tea spoons full of distillery yeast, or twice as much home-brewed.

Wet it up with enough warm milk to make a soft dough, and then work in half a pound of butter. Wheat light, mould it into round cakes, or roll it out and cut it with a tumbler.

Very Nice Rusk—One pint of milk.

One coffee cup of yeast; (potato is best.)

Four eggs.

Flour enough to make it as thick as you can stir with a spoon.

Let it rise till *very* light, but be *sure* it is not sour: if it is, work in half a tea spoon full of saleratus, dissolved in a wine glass of warm water.

When thus light, work together three quarters of a pound of sugar and nine ounces of butter; add more flour, if needed, to make it stiff enough to mould. Let it rise again, and when *very* light, mould it into small cakes. Bake fifteen minutes in a quick oven, and after taking it out, mix a little milk and sugar, and brush over the rusk while hot, with a small swab of linen tied to a stick, and dry it in the oven. When you have weighed these proportions once, then *measure* the quantity, so as to save the trouble of weighing afterward. Write the measure in your receipt book, lest you forget.

Potato Biscuit.—Twelve pared potatoes, boiled soft and mashed fine, and two tea spoons full of salt.

Mix with potatoes milk, add half a tea cup of yeast, and flour enough to mould them into small cakes, then let them stand in buttered pans fifteen minutes before baking.

Crackers.—One quart of flour, with two ounces of butter rubbed in.

One tea spoon full of saleratus in a wine glass of warm water.

Half a tea spoonful of salt, and milk enough to roll it out.

Beat it half an hour with a pestel, cut it in thin round cakes, prick them, and set them in the oven when other things are taken out. Let them bake till crisp.

Hard Biscuit.—One quart of flour, and half a tea spoonful of salt.

Four great spoonsful of butter, rubbed into two-thirds of the flour.

Wet it up with milk till a dough; roll it out again and again, sprinkling on the reserved flour till all is used.—Cut into round cakes, and bake in a quick oven on buttered tins.

Sour Milk Biscuit.—A pint and a half of sour milk, or buttermilk.

Two tea spoons full of salt.

Two tea spoons full of saleratus dissolved in four great spoons full of hot water.

Mix the milk in flour till nearly stiff enough to roll, then put in the saleratus, and add more flour. Mould up quickly, and bake immediately.

Shortening for raised biscuit or cake should always be worked in after it is wet up.

A good way to use Sour Bread.—When a batch of bread is sour, let it stand till *very* light and use it to make biscuit for tea or break-fast, thus.

Work into a portion of it, saleratus dissolved in warm water, enough to sweeten it, and a little shortening, and mould it into small biscuits, bake it, and it is uncommonly good. It is so much liked, that some persons allow bread to turn sour for the purpose. Bread can be kept on hand for this use any length of time.

For a violent Colic Pain in the Side.—Mix an equal quantity of spirits of lavender, spirit of sal-ammoniac, add Hungary-watery; rub it in with a hot hand, and lay a flannel on as hot as you can bear it. Repeat this often.

For a Consumptive Cough.—Take half a pound of double-refined sugar, finely beat and sifted, wet this with orange-flower water, and boil it up to a candy height; then stir in an ounce of cassia-earth finely powdered, and use it as with any other candy.

To Remove Flatulency after Eating.—Take a spoonful of the following mixture in a little water as soon after eating as convenient; Magnesia, 3 drachms; carbonate of soda, 2 drachms, sal-volatile, 4 drachms; rose water, 7 drachms. Mix, and well shake the bottle before taking a dose.

To Preserve Flowers in Salt.—Common salt, 3 pounds; flowers, 10 gallons. Beat them to a paste and preserve it in wide-mouthed jars or bottles. This plan furnishes the perfumer with flowers at any season of the year. The scent is not only much improved, but the flowers rendered more suitable for the purposes of distillation.

Ointment for the Foot Rot.—Lard, 1 pound; turpentine, 1 pound; tallow, 1 pound; sulphate of copper (powered,) 1 pound; rape oil, 1 pound; black resin, 1 pound. Melt, and mix well.

To the Subscribers of the Cultivator.

This number completes the current volume of the *British American Cultivator*, and in conformity with the system of advance payments, the contract we entered into at the commencement of the year. We may not have pleased the whole of the patrons of the work, but we flatter ourselves that the experience we have had, and the knowledge we possess of the business, will enable us to conduct the forthcoming volume in a manner that will give unlimited satisfaction to all who may patronise it. The various enterprises we are engaged in, make the task of catering for the public a somewhat difficult one, but the cause of agriculture and manufactures are of so much importance, in our estimation, that we are willing to make any amount of sacrifice to promote these great interests in the Province. The difficulties that we have had to contend with in establishing the *Cultivator* upon a sound footing, have been by perseverance surmounted, so that we have now the satisfaction of stating, that the work before us appears pleasant, and shall in future ever be considered so by us, so long as we have the confidence and support of the two great classes whose interests we profess to advocate.

To do justice to the enterprise, we want an extensive patronage. By referring to the prospectus of the forthcoming volume, it will be seen that if our patrons should exert themselves to their utmost, and obtain for us a circulation of 20,000 copies of the *B. A. Cultivator*, that we would in return GIVE THEM A BONUS OF A CANADIAN WEEKLY, THE SIZE OF ONE OF THE LARGEST CANADIAN NEWSPAPERS, under the title of "*The Provincial Advertiser.*" In point of original matter and general ability, we do not intend the *Advertiser* to be second in comparison to any newspaper in the Province of Canada. It shall be, as we have elsewhere stated, an unflinching friend of the producing classes, and shall especially be so to the Manufacturer and Emigrant.—If our numerous friends and supporters through the country really have a desire to put our ability for conducting the *Cultivator* and *Advertiser* to the test, the only thing they have to do is, to put their shoulder to the wheel, and canvas manfully for the 20,000 subscribers. In the remote township of ERIN a few friends resolved at the last annual township meeting, that they would bring the claims that our Journal had upon the attention of the farmer, before the notice of the meeting, and by a little exertion on the part of a few spirited individuals, upwards of SIXTY subscribers were procured on the spot. We hope our friends through the country will take example from the township alluded to, and at the general town meeting in the month of January next, will remember to go prepared to solicit subscriptions for the work, from all classes of the community.

The subjects discussed in our columns are of the utmost importance to all; *and where is there a man, who, if solicited in a polite manner to become a member of an Agricultural Society, would not pay the paltry subscription of* FIVE SHILLINGS, *for which he would obtain all the benefits of the Society, and an Agricultural Magazine and Newspaper in the bargain.*

The Township of Whitby Society, the present year, obtained as large a share of the Government money as all the other Township Societies in the District put together. This would not have been the case had that society not adopted the system of supplying each of its members with a free copy of the *Cultivator*, and also secured the voluntary services of active men to canvas every concession and side line of the township for members. If the other townships in Canada West would adopt the system practiced by the two above-mentioned, a much greater circulation would be secured than what we require to warrant us in issuing the *Advertiser* weekly.

The patrons of our work may with some reason complain of the want of proper embellishments; but to satisfy them that the forthcoming volume will contain a rich display of valuable engravings, we would mention, that we have entered into a contract with Mr. Lowe, our wood-engraver, that we shall employ him to execute work to the value of £50, which will give, on an average, about five engravings to each number. We shall have in the Agricultural Warehouse most of the improvements in Agricultural and Mechanical Machinery, and everything worthy of notice shall appear illustrated in the *Cultivator*.

We wish our friends to understand, that we are determined to make both the *Cultivator* and *Advertiser* popular works, and in which they will find a store of valuable information rarely to be met with. In short, it is our full determination to advance nothing that cannot be most advantageously practiced, and to make our Journals worthy of the esteem and patronage of an enlightened public.

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