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THE BRITISH AMERICAN CULTIVATOR.

"AGRICULTURE NOT ONLY GIVES RICHES TO A NATION, BUT THE ONLY RICHES SHE CAN CALL HER OWN."—Dr. Johnson.

Vol. 1.

TORONTO, SEPTEMBER, 1842.

No. 9.



THE CULTIVATOR.

"Agriculture is the great art which every government ought to protect, every proprietor of lands to practice, and every inquirer into nature improve."—Dr. Johnson

Toronto, September, 1842.

THE New Corn and Tariff Bills have passed the British Parliament, and time only will prove what degree of favourable influence they may have upon our interests. We would wish the Tariff had been more encouraging to Colonial produce, and had given more decided protection from foreign competition in a few articles, particularly salted meat. But even in its present form, we believe it is more favourable for us than the former Tariff. What we have the greatest apprehension of is, that a large quantity of live and dead cattle and swine will be imported into England from the North of Europe, and hence greatly limit the market and demand for salted meat from Canada. These apprehensions, however, may be groundless, and the result may be very different from what we now anticipate. At all events, we should be prepared to avail ourselves of any advantage that these new laws would offer to us. We hope our own Legislature will, next Session, do their duty to their Constituents, and give some attention to our affairs. Instruction and encouragement might be held out to our farmers to feed cattle and swine, and to our merchants to form establishments for slaughtering and preparing for export, in a proper manner, these cattle and swine when fattened. It may be answered, that these matters should be left to individual industry and enterprise. We humbly conceive the contrary, and believe that in a country like this, that it is the duty of the Legislature to instruct and encourage the population to adopt such modes of employment, as would be most likely to promote the general interests. This country has been visited with a very great plague, in the destruction for several years, of the wheat crop. If, under such a calamity, the Government and Legislature are not bound to take notice of the people's distress, or offer any instruction or encouragement to them, whereby the loss they have sustained might be compensated, by recommending other modes of employment, we know not what may be the legitimate object for which governments and legislatures were first instituted. If nothing could be done for our agriculture, we should make up our minds to be satisfied with things as they are; but, if on the contrary it is possible, by encouraging new modes of employment and raising new produce, that the prosperity of agriculture, that is the sole dependence of nine-tenths of our population, might be promoted, surely it would not be

an object unworthy the attention of our Legislature to take up the matter. Our Legislature might also, afford us considerable protection from foreign competition, and enable us to make the new Tariff the means of establishing a valuable trade in salted meat and the produce of the dairy, with the mother country. We would remind our Legislators that the competition between the people of the United States and us, is not upon a fair and equitable principle. The producers here pay a revenue, both Imperial and Provincial.— We purchase goods coming to us from England, charged with all the taxes direct and indirect, included in the cost of their production, and these taxes are said to form a large proportion of the entire cost prices of these goods. We also pay a Provincial Revenue upon them. The inhabitants of the United States sell their produce here, and not being obliged to take goods in exchange, they may take only cash, which pays neither Imperial or Provincial revenue. Hence they are enabled to sell their produce here on the same terms that we do, without any drawback of the nature that we are subject to, and this state of things gives the foreign competitor an advantage over us of a very considerable amount per cent. on what each of us receives for produce in the Canada markets. The foreigners may pay revenue in their own country, but that we have nothing to do with. We confine ourselves to the consideration of theirs and our own relative position, when each are in the Montreal market disposing of their respective produce. We must expend the money here on English goods, or to pay labourers who will be purchasers of English goods, and thus we contribute to the revenue both of England and of Canada; while our competitors from the United States sells at as high prices as we do, and carries away the proceeds to his own country, to encourage the productive industry of the United States. We may not make ourselves clearly understood, but we shall refer to this subject again. Canadian farmers are charged with being an ignorant class of men, unable to understand what would be for their own, or the general interests of the country.— From a want of education, doubtless, many of them are so, but they are not all so; and a great many of them are as well qualified to judge correctly of what would be likely to promote the general interests of the country as any other men in the Province. Were agriculturists, like other classes, to assemble together on every occasion that public acts were likely to affect their interests, and boldly and unanimously express their opinions, much more attention would be given to their wants and wishes; but, in this country, unfortunately, there is not that cordial unanimity existing amongst the agricultural class as in England, that will allow them to act together and with effect. We might explain the cause of this disunion, but decline doing so on the present occasion. Perhaps reminding our agricultural friends that such a want of cordial unanimity is extremely prejudicial to their interests, may produce a change and unite farmers, as it is clearly

their interest to be united. It is not for any unworthy purpose we would recommend this union, but for a good object—first, the care of their own interests, and next, in order to promote the general improvement of the country we live in. It is manifest the country cannot improve, whatever our cities may do, unless our lands are brought into cultivation, and yielding a produce that remunerate for the expenditure. No man will continue long to expend capital and labour on what will not yield remunerating returns. It is therefore, not to be expected that the country will improve, unless the improvers are repaid their capital and labour by the produce raised. Our Legislators and others, who pretend to be friends to improvement, will do well to remember that these are incontrovertible facts. We grant that improvement might be effected to a certain extent, by a rural population settling down in the country, and confining themselves entirely to the cultivation of their lands, and manufacturing among themselves all that they would require; and having no commerce or intercourse of any consequence with other classes. But if trade, commerce, and general prosperity is desired to be permanently established in the country, it can be maintained only by a healthy and prosperous condition of the agricultural population. Those who expect to produce these desirable advantages from any other source, will bring disappointment to themselves and to all who place confidence in them. It is useless to attempt to found the prosperity of this country, above all others, upon any other bases than her agriculture. At some future time it may be otherwise, but not for a century to come. We give this opinion confidently, but not without due consideration.

ACKNOWLEDGMENTS.

We beg to acknowledge the receipt of *The New Farmers' Journal*, published in London, England, with a few numbers of *Bells' Weekly Messenger*. These papers contain a detailed account of the proceedings of the annual meeting of the Royal English Agricultural Society held at Bristol. We feel proud to place such valuable papers on our exchange list.

We have also to acknowledge the receipt of a number of packages of Agricultural Papers and Magazines, from our respected friends Thomas Starkey, Esqr., of Petherton, Somersetshire, and Benj. Coates, Esqr., of Leominster, Herefordshire, England.

The first number of *The Berkshire Farmer*, another valuable production of "the old Bay State" came to hand; it is certainly deserving of support, if the first number be a correct specimen of the genius of its talented editor.

In a work lately published in England on the "General Drainage and Distribution of Water," the author says:—"It is admitted by all who understand the subject, that where drainage has been carried on upon correct principles, and with proper skill and energy, 8 bushels or one quarter of wheat has been added to the produce per acre." The author further states, that 10,000,000 out of 12,000,000 acres of the arable land of England is undrained or ineffectually drained at present; and he supposes that if this land was perfectly drained, more than 3,000,000 quarters of wheat would be annually added to the produce of that grain alone in England. He endeavours to prove also, that the drainage water might be usefully employed in irrigation, and in giving mill power. The sewerage of the towns of England and Wales, he calculates would annually produce over 3,000,000 tons of disposable manure more than they do at present, capable of enriching an area of 1,000,000 acres. The work referred to, is highly recommended to the attention of land proprietors in the British Isles.

We have repeatedly endeavoured to prove that the more perfect drainage of the arable lands of Canada, would be the most necessary and profitable improvement that could be effected in our agriculture. Every farmer who understands his business must know that it is unprofitable and worse, to cultivate and manure land that is not sufficiently drained. Before any field is cultivated by a farmer, it will be decidedly his interest to drain it sufficiently. Every shilling expended in draining, so far as it is necessary, will produce more profit than five shillings would do in cultivating and manuring undrained or insufficiently drained land. We recommend to the attention of our Legislature, the Acts that have been lately passed in the British Parliament, for the more perfect drainage of land in the British Isles; and we earnestly hope that the interests of our agriculture will receive some consideration in the next Session of the Provincial Parliament. Our Legislature will have a GOOD PRECEDENT in England, what measures should be introduced here for the encouragement and improvement of agriculture. They need not apprehend that this precedent would be unsuitable for this country. We have frequently endeavoured to prove, that the more closely we adopt and follow the English improved system of agriculture in every branch, (with the exception of cultivating turnips to the same extent), the more certain we will be of profitable agriculture. We now, regardless of what any person may have to state to the contrary, assert the same thing. The drilling and hoeing of wheat, we would particularly recommend. Dibbling of wheat is practised in England, but not to a great extent, and we need not adopt that part of their system here for the present, as labour is dearer, and seed cheaper with us than in that country. We are prepared to enter into a full explanation on this subject, with any one who may chuse to take the matter up. Winter vetches are a crop that can not of course be cultivated here, nor are they necessary for us. Hoeing wheat may be done here nearly as cheap as in England, when we have labourers that will understand the work and be expert at it. One hoeing would be sufficient, and it would greatly tend to destroy the wheat fly, we have not the smallest doubt. Drilling

and hoeing would give air to the crop and keep down weeds. If our land was very suitable for wheat, and situated at a distance from town, where wheat should be the most profitable crop to cultivate, we would certainly endeavour to prove, by experiment, the plan we recommend. Let those who have suitable soil, summer-fallow the land—lime it—sow the wheat in the beginning of September, in drills—hoe it once in the spring—and if a good crop is not produced, (provided it comes into ear previous to the 20th of June, so as to escape the fly), we shall acknowledge our error. We have every reason to believe, that by sowing wheat early on well prepared fertile soil, limed if possible, it would be in ear early in June, and be perfectly safe from the fly. Has any farmer tried this experiment fully on wheat, up to this moment in Eastern Canada?—We believe there has not. In making experiments, every part of our plan must be followed exactly, or we will not answer for its success.—We do not propose any thing more than the system of cultivation that is now very generally adopted in England for the production of wheat. How can we expect good crops from the slovenly cultivation that is general in Canada? Our strong clay lands are not cleaned by summer-fallowing, the crops are not hoed or weeded properly, the land is not sufficiently drained, and how can we reasonably expect good crops? We appeal to any one who is acquainted with the country, if our statement respecting the general cultivation of crops is not correct. There is much of the soils of this country that contain salts, or ingredients, that are said to produce rust in the crop of wheat, and from our own experience we know this to be case. Lime is said to be an effectual remedy against the injurious influence of these salts. The drilling and hoeing out of all weeds, would also help to prevent rust and mildew, and those diseases when they affect the crop, are as destructive to them as the fly.

In *The Mark Lane Express* of the 4th of July, we have seen a most interesting "Summary of the Public Proceedings" of the Royal English Agricultural Society, that was to have taken place at the Bristol meeting, on the 12th and three following days of July. Every man attached to the profession of agriculture must feel interested in the proceedings of a Society who are doing so much to promote the improvement and prosperity of agriculture. It is, however, to Canadian farmers, distressing to know, that notwithstanding the great necessity that exists for introducing improvement in agriculture here, they have no such Society as that of England to encourage improvement, or take care of their interests. Agriculture is left to take care of itself in Canada. The few Agricultural Societies we have, direct their principal attention to giving premiums on superior horses, cattle, sheep, and swine, and neglect altogether the improvement of the system of husbandry, that is of infinitely more importance than the improvement of live stock in a few hands. Better draining, ploughing, judicious rotation of crops, the destruction of weeds, and of vermin injurious to agriculture, is what we should direct our attention to first.

If rhubarb seed is not wanted, it is a mere waste of the powers of the plant to allow it to

flower. For the same reason asparagus should not be permitted to bear berries, nor sea-kale flowers and seeds.

A Society has been organized in Ireland for promoting the "Improvement of the growth of Flax," and several deputies have been sent by the Society to Belgium in order to acquire a practical knowledge of the cultivation and management of that important crop in that country.—These deputies have returned and have gone to their respective districts the last spring, to give to Flax-growers, the benefit of the information they have acquired. When shall a Society be organized in Canada for a similar object? We answer, not certainly until agriculturists possess more influence than they do at present in the country.

The late Lord Sydenham, when transmitting to Lord John Russell, the joint addresses of both Houses of the Canadian Legislature on the subject of the Timber Duties, made use of the following terms in his dispatch:—"In transmitting these addresses, I am bound to remark that, notwithstanding the authority from which they proceed, I am not disposed to attach very great importance to them." Such was the opinion entertained by the late Governor-General of the joint addresses of our Legislature on a subject of great importance to Canada. It could scarcely be expected that the Colonial Secretary would attach much consequence to addresses transmitted to him with so doubtful a recommendation, and it was certainly a very poor compliment to the wisdom of our Legislators. The dispatch of the Lieutenant Governor of New Brunswick, when transmitting addresses from the Legislature of that Province upon the same subject, is in strong contrast with that from Lord Sydenham. His Excellency Sir W. M. G. Colebrooke, recommends to Lord Stanley, the present Colonial Secretary, the prayer of the addresses in the strongest terms he could employ. It must always be cause of deep regret, when the Governor-General of Canada, under our present Constitution, in transmitting to the Home Government, the joint and unanimous addresses of both Houses of our Legislature, on a subject that may be of vital importance to the country, should conceive it to be his duty to speak of it in such terms as those which Lord Sydenham employed on the occasion referred to. Such a course must decidedly show a doubt in the wisdom of the Legislature—that they are not always influenced in their motives and measures to promote the general good of the country they legislate for—and that they are not competent to form a correct opinion of measures that would be the best calculated to advance the general welfare.

We have seen fields in Eastern Canada so completely occupied with a crop of thistles, that any stranger would have supposed that they were a crop that had been regularly sown and cultivated. Will any one pretend to say that it would not be expedient for the Legislature to pass a law that would inflict a penalty upon any farmer or occupier of land who would not cut down their thistles, or other weeds that scatter their seeds, before they mature their seeds? We think it actually necessary to introduce such a law, that it would be an expedient and reasonable law, and a law that no well disposed occupier of land would complain of.

It is said that the value of the estate of the late Earl of Leicester, was ten times greater at his death than at the period it first came into his possession, and this increased value was chiefly produced by the improvements introduced by his lordship in agriculture. No man that ever existed, perhaps, has done more for the promotion of practical agricultural improvement than the late Earl of Leicester, during a period of 43 years, that he was actively engaged in extensive farming. His experiments and example were for the benefit of all who choose to adopt them, and his large fortune enabled him to make these experiments, and show this example, that was of such vast importance to the whole of the British Isles. If we had such a man in Canada, we might expect that the improvement and prosperity of our agriculture would be promoted.

The annual meeting of the Royal English Agricultural Society took place at Bristol, on the 13th of July and continued for four days. The meeting was numerously attended by landed proprietors and farmers from all parts of the British Isles. There were 510 lots of cattle, sheep, and pigs exhibited for premiums; and the exhibition of new and improved implements of husbandry amounted to several hundred. The proceedings altogether, as reported in *The Mark Lane Express*, are most interesting. We can only wish that we had such a Society in Canada, but never can expect it. We give a few extracts from the reported proceedings at the meeting. The following remarks on the utility of the Society and the amount of the funds received at the Bristol meeting, may give some idea of the good they are likely to produce:—

“Although established but four years, the good accomplished by this society has, even in so short a time, been great indeed. The capabilities of our soils are already better understood; the chemical qualities of their component parts, and the nature of the artificial aids which they require, have been carefully investigated; the powers of mechanism have been invoked, not to supersede but to aid the labour of man; production has been increased; improvements in the breeds of cattle have been effected; a mass of facts, the only safe foundation for an enlightened theory, have been collected; prejudices, long interwoven with the habits of a class peculiarly attached to old habits and customs, have been broken down, whilst the careful test of experiment has prevented the spread of the opposite error of confounding all that is new with all that is valuable; a general amalgamation of those interested in one common pursuit has been effected; and, to crown all, the eminent success of the past offers a guarantee of a yet more brilliant future—brilliant, indeed, to the eye of the philanthropist, since it is a future teeming with an abundance of the treasures of our soil, produced by mature industry, and more than sufficient for the wants of our native population.

“The receipts of the Association were also very large, and larger than in former years. I can, in round numbers, give you an estimate of the receipts, which will convince you that I have not formed an extravagant estimate of the numbers who attended.

Wednesday.—Show of implements—	
800 at 5s. each.....	£ 200
Thursday, up to one o'clock.—Cattle	
Show—16,000 at 2s. 5d.....	2,000
After one o'clock, to six P.M., 12,000	
at 1s. each.....	600
Friday.—5,000 at 1s. each.....	250
Council dinner tickets, exclusive of invitations.....	450
Pavilion ditto.....	1,200
Judges' Gallery ditto.....	150
	£ 4,850

besides about £1,200 arrears of subscriptions which were received on the occasion.”

The following article has been copied from the Journal of the Royal English Agricultural Society. We think that winter rye might be very profitably cultivated in Canada for spring food for cattle. In ordinary seasons it would afford considerable feed early in May, and the land would be rather improved than injured by it. The pastures are very backward here up to the 1st of June, and a few acres of rye would be a great help to stock in the month of May. The farmer who would not require it for his stock might let the crop go to maturity. We would not recommend the sowing of rape seed with the rye. We copy only a part of the article.

“It is the intention of the writer now to state his experience, and offer his recommendation of a crop embracing all the advantages of the preceding, and several peculiar to itself. It is that of rye, eaten in the early stages of its growth. It is intended to intervene between the last crop of the four course system, which is generally wheat, and to be eaten, and the land ploughed and worked for a crop of turnips. It is equally applicable to all kinds of rotations, and would well precede a fallow or a crop of rape. As it is generally upon farms where the four-course system is pursued that spring feed is most wanted, the writer will confine his observations to that rotation.

So soon as the wheat is cut in the autumn, the plough should be set to work. This may be done even before it is carted, during the mornings of harvest. A single ploughing is given, and a very slight dressing of any kind of short manure. In some cases where the farmer lays on his manure in the autumn, or turns up the ensuing year, it might be better to lay it on before the ploughing. It should be remembered that the slight dressing should not all be considered as given to the rye; in reality it becomes incorporated with the soil, and more intimately mixed with it than by the ordinary mode of spreading it on in the autumn, and any part of it which the rye may abstract, will be more than compensated by the droppings of the stock and the carbonic acid gas which they evolve while consuming it; and which the soil more readily absorbs in the spring than in any other part of the year, evaporation going on at that period to a much smaller extent than in any other.

The seed must be sown upon the plough-scan broadcast, at the rate of 2½ bushels per acre, and if of that year's growth, so much the better, as it is earlier and more certain of germination. To this, a peck of rapeseed per acre should be added; for although the latter is not able to stand a winter when the frost sets in early and severe, in many cases it will get sufficiently vigorous to resist any ordinary frost, and will much improve the feed in the spring. Should the rape not be sown, a peck of winter-tares per acre will improve the feed, or an additional peck of rye may be added; as a fuller bite and excited growth in its early stages will be secured—a point gained when wanted to depasture, although it might be injurious if sown for a crop.

In cultivating rye as feed, there need be no fears entertained of its becoming “winter proud,” for as that only affects the ears of the corn, it is a circumstance of no importance, and therefore the earlier it is sown the better able it is to resist the early frosts, as well as having a better cover and more feed when wanted. When sown it should be thoroughly harrowed, but not rolled—a double with a pair of Enc harrows is sufficient, and the surface weeds should be gathered off, or the whole raked with the hand, which will more efficiently cover the seed. An advantage is gained to the soil by this ploughing, which cannot be obtained when the land is sown with the vetches. The annual weeds on the old surface are prevented from running to seed, and a new surface is exposed to the air and frost.

The rye will be fit for consuming the last week in March or the first in April, or if allowed to remain until the middle of the latter month, it will carry a greater quantity of stock. After it is thoroughly eaten up, it should be freed, and by the first week in May, will afford another pasture of fine young nutritious feed; at least, in ordinary seasons. It is bad management, though some-

times practiced, to allow the rye to remain un-eaten until the seed-stalk begins to shoot, for in that case it will become much less palatable and useful. By consuming it young, it is much more valuable, and the succession crop equally so as the first.

The second crop being consumed, the plough must be put into operation, and the soil prepared for the succeeding crop; and the advantage of its cultivation, by no means a small one, is, that it interferes with no other crop.

Perhaps a short digression may be pardoned on the subsequent preparation of the soil. The writer's practice is different to that of most other persons. Usually it is cross-ploughed a fortnight after its first ploughing. Time is thus lost, and the shees are cut into squares difficult to be acted upon by the harrow. The writer begins to harrow as soon as the newly turned up surface of the first ploughing is sufficiently dry. This brings up the lowest part of the roots of the weeds and closes the interstices of the furrows, so that the remains of vegetation being covered, deprived of air, and gathering moisture, begin to decompose. Instead of cross-ploughing, it is again ploughed lengthways, and the old surface again brought up and harrowed. The weeds separate much more easily by this process, and much time and labour is saved; the same practice is applied to bastard fallows with the same good effects.

Rye has the decided advantage of being capable of resisting any conceivable degree of frost, and when even the hardy wheat is carried off by an ungenial season, it will escape injury, and even thrive. At this time (February 21, 1840), the writer has a plot growing for feed which would now afford more eating than almost any mixture of artificial grasses in the middle of April, and that on a thin light soil not worth more to rent than 25s. per acre. Some of the rape has succeeded, even in this season of incessant rain, which prevailed not only in the early stages of its growth, but ever since it was sown. It can bear so much and constant wet, worse even than frost.

The expense of this crop will be somewhere as under. Say per acre—

2½ bushels of rye at 4s. 6d.....	11s. 3d.
½ peck of rape.....	0 10½

12 11½

It should be remembered that this interferes with no operation of husbandry, and prevents no crop, so that no rent of land or other extras are to be reckoned—the ploughings would be nearly the same if the rye were not sown. Nothing is better relished by stock at the season when it is intended to be used; a guide by no means unsafe as to its nutritious qualities, and which is borne out by the condition of the stock feeding on it.

To recapitulate the advantages of its cultivation:—

I. Provision of excellent green food is made at a season of the year, when of all others it is most wanted.

II. It is produced without sacrificing any portion of the usual rotations pursued on a farm, and with little extra labour, nor does it interfere with the management of any preceding or succeeding crops.

III. It will grow on any soil, but is especially calculated for poor loose sand, when every other green esculent is more or less uncertain.

IV. It will bear any degree of frost to which our climate is subject, and is sufficiently hardy to defy the effects of the coldest situations in the country, being there cultivated instead of wheat for a corn crop from necessity.

V. It is as inexpensive or more so than any grass or leguminous plant.

VI. It is readily consumed by stock, especially young animals.

VII. It improves rather than deteriorates the soil upon which it is grown.

Thorpfield, near Thirsk, Yorkshire.

We strongly recommend experiments on this plan. We know that cattle suffer severely here for want of food in the spring. Rye will answer all the purposes of winter tares, that are found so useful in England, and tares would not stand out-winters.

AGRICULTURAL REPORT FOR CANADA EAST.

From the date of our last Report to the end of July, and for the first week of August, rain fell frequently, though not in large quantity; and as that happened to be the period of the hay harvest, a very considerable portion of the hay received some degree of injury in curing. A slight shower in the twenty-four hours may cause injury to hay that is in process of curing, though it might have a beneficial influence upon every other crop of the farmer. Unsettled weather, during the hay harvest, causes also a great loss of labour to farmers; and this has been the case this season. Rain has come on when hay was ready for the barn or stack, and unless in well made cocks, secure from the effects of wind, it has been rendered unfit to cart until again spread out and dried. Those who are unacquainted with agriculture, often charge farmers with being a complaining and unthankful class, but if those who make these charges were to be farmers only for one season, that the weather was broken and showery during the harvest, we are almost convinced they would complain more than any practical farmer ever did or ever will. A practical farmer is generally prepared to expect these occurrences, and endeavours to guard against them as much as possible; but the farmer of one season, would not have either experience to direct him, or patience to submit to the injury to the crop, and the loss of wages and of labour that would be the consequence of broken weather. From the 10th of August to the present, the weather has been very favourable for the hay and grain harvest, and most of the hay and barley in the District of Montreal is secured. We are sorry to report that wheat is almost a total failure, we believe generally throughout Canada East. Between the fly and rust, or mildew, the crop is not of much value. We were induced to sow a small quantity, both of fall and spring wheat, in consequence of the reported success of others in growing wheat last year, but both are nearly a failure; the fall wheat from rust principally.—From the date of our last Report up to this time, the weather was exactly such as would be sure to produce rust in wheat crops that were late, and the straw soft and green. We had rain frequently, fogs occasionally, copious dews, and calm warm weather generally, and under such circumstances, the growing wheat, cultivated as it usually is with us—sown broadcast—and having much grass and clover, if not weeds, growing with it, we could not expect that it would escape rust or mildew. We are of opinion that rust may be prevented in a considerable degree—Thorough draining—the application of lime—sowing in drills—hoeing the crop—and preventing the growth of all grass and weeds—we conceive would greatly check, if not entirely prevent, the disease of rust or mildew in ordinary seasons. The application of lime would make the straw of wheat more firm and strong to resist disease.—Drilling would allow a more free circulation of air, and hoeing would prevent the growth of every plant but that cultivated, and hence remove all that would have a tendency to retain moisture too long about the stalk of the growing crop, which we believe to be one chief cause of rust—though not the only one. There are in most

soils, salts that are known to have a tendency to produce rust in wheat; until their influence is overcome by the application of lime. Sowing wheat in drills, and hoeing the crop would have a beneficial influence in depriving the wheat fly of its hiding place, and perhaps the place of its production; but unless this system was to be generally adopted, it would not have much effect in checking the fly, because the farmer who would not adopt the system, would still continue to keep the insect in existence to destroy his neighbour's crops as well as his own. Farmers have boasted of raising crops of wheat when others have failed to do so. It was not by any superior cultivation or management that they have done so, but merely from accidental circumstances of the wheat not coming into ear, at the particular period that the fly was present to deposit its eggs or larvæ in the ear. If the fly is in existence (and it generally appears about the 25th of June) when the wheat is coming into ear, no mode of cultivation that we are acquainted with can save the crop from their ravages. We state now, as we often did before, that if wheat was sown early in the fall, on land prepared by summer-fallowing, and dressed with lime, the seed deposited in drills, and the crop once hoed in the first week of June, it might escape the fly as it would be early in ear, and be also free from the disease of rust. It is useless to sow wheat, unless cultivated in this way. Indeed it is only wasting land and labour, to produce food to support the most destructive insect that ever afflicted mankind. This matter is of so much importance that we beg to offer a few more observations.—Last fall we purchased some seed wheat imported from Canada West. We perceived at the time that the sample was mixed, but we had no remedy as we could not procure better seed in time to sow, as we were anxious to sow early in September. When the wheat came into ear, it proved that there were five or six varieties, and also some rye. It came into ear the first week of July, and the fly was very numerous at the time. We now find that of these varieties, there are two that have scarcely suffered any damage from the fly, while all the other varieties are nearly destroyed. The varieties that are safe, have a strong rough ear and very thick glums,—one is bearded, and the other not. The varieties that are damaged on the contrary, have a smooth ear, and to these circumstances we attribute the safety of the one, and the damage of the other. The fly is a very delicate one, and is not, perhaps, able to pierce with its ovipositor, the glums of the wheat that is rough and thick, to deposit its eggs or larvæ within side of these glums.—We have heard that the variety of wheat, known in England as the Cone Revit, or German Thick-set, is proof against the ravages of the fly. We have never seen this wheat unless it be one of the varieties referred to above, and we think it probable. The Cone Revit is a coarse inferior wheat, of about one fifth less value than the best English wheats. We have seen, however, the report of an experiment made in England with several varieties of wheat, and the Cone Revit was one of them; and from its large produce in straw and grain, it was nearly of as much value as any other variety tried in the experiment—and of more value than some of them. We did propose to make seed of the two varieties that we

found safe from the fly, but the sample was so injured by the crop becoming rusty and mildewed that we fear it would scarcely vegetate. We have repeatedly reminded our importing merchants, that a variety of wheat might be imported from England that would resist the ravages of the fly, but not one bushel has ever been imported to our knowledge. If we could even grow an inferior wheat that would be safe from damage, we should be well satisfied. Though this season has been such as to produce rust, other seasons may not be so. It is another proof, if any were wanted, how much our agriculture and our interests are neglected, that no new variety of wheat has been imported to make experiments. Our Governors and Legislators have for the last eight years, been perfectly aware of the misfortune and loss the country sustained by the failure of the wheat crop; and yet not one has moved *one step* to remedy the evil, though they have been made acquainted with the circumstance, that there were varieties of wheat that might be successfully grown here. It may be replied that these matters should be left in the hands of private individuals who are most interested. We beg leave to deny this, considering the situation and circumstances of the agricultural population of this country. We humbly conceive that under such a calamity, as deprived nine-tenths of the population of their principal means of subsistence, the Government and Legislature were bound to inquire into the subject, and do all that was possible to provide a remedy. There are no private individuals here that possess sufficient wealth, and feel sufficient interest in the prosperity of agriculture to undertake the trouble of inquiry, and the expense to remedy a calamity of this nature and magnitude. If a remedy was practicable, any expense that would be incurred by the Government would be soon repaid. A poor population cannot contribute much towards a revenue. If they have nothing to sell they cannot purchase articles that pay a revenue. We may be blamed for speaking thus plainly, but we do so from a sincere conviction that if any remedy was possible for the calamity we have so much cause to deplore, every class of this community would be greatly benefited by it, and therefore we conceive it to have been a subject well deserving the attention of the Government and Legislature. If the country was naturally unfit to produce wheat we should make no complaint; but the country has produced good wheat, and we believe would do so again if proper and judicious measures were adopted, by introducing new seed, and a more suitable method of cultivation and management. Whatever may have been possible, the agricultural class owe no gratitude to any quarter for having taken any measures for their relief. They have been left to themselves to sink into poverty, or rise above it in the best way they could. Had such a calamity occurred in England, every class of the community would have united to inquire into the matter, and endeavour to seek a remedy if it were possible to be. We are still of opinion that a remedy is possible here by adopting the proper means. For the present we shall say no more on this subject.

Oats have greatly improved since our last Report, and where any justice have been done to the soil they will be a good crop. The wild mustard that prevailed so much in July is now in

seed, and does not appear in the crop at a distance, though it is there in abundance. Thistle and other weeds that are higher than the oats, are still to be seen in this crop, in peas, and by the road side and fences. We hope that a part of the oat crop will be manufactured into meal, for exportation next spring, as it is very probable the price in the British market will be sufficiently remunerating to those who may ship it for that country.

Peas have suffered by mildew, but we believe there will be a large crop of them notwithstanding.

We have not seen much rye this year, and cannot report the state of the crop. We believe it is likely to be injured by the fly as usual. Indian Corn has improved very much; but we cannot say whether the crop will ripen properly and prove a profitable one. It was very much retarded in its growth this year, by the cold and wet in May and June. On soils that are suitable for it the crop may still be good; and it should not be planted on any soil but that which would be suitable in any season.

Buck-wheat looks well and there is a considerable quantity sown. We before observed that the barley is a good crop and now safe. This crop fortunately escaped the disease of rust and mildew, as it was too far advanced towards maturity before the season of rust. All other grain crops have suffered in a greater or less degree from this disease, and it materially lessens their value.

The potatoe crop in the neighbourhood of Montreal is generally good; but we have observed that there are many failures, both from dry rot in the seed, and from insufficient draining. This season was not the most favourable for the cultivation of potatoe on clay lands, in consequence of the frequent rain during the time of ploughing them. The soil in the drills of such lands is now extremely hard, and not favourable for the production of a very large crop per acre. There will, however, be abundance for our wants.

The hay crop is abundantly sufficient for all our wants. A part was injured, but a large quantity is well got in. Had we the supply of our own markets with all the agricultural produce we could raise, we could convert some of our hay into beef and mutton; but that privilege is denied us. The consequence is that hay will scarcely pay for the labour of cutting, saving, and taking to market. The pastures have been better this year than usual. Dairy produce is abundant and at a moderate price. It should be a good season for fattening cattle and sheep, if we done much in that way; but there is no encouragement. We hope the time will come when we shall have a large proportion of our best lands applied to this purpose.

Fruit is scarce in this neighbourhood. The orchards suffered much in the spring from the ravages of the caterpillar, and also from night frosts.

Throughout the season, labourers have been to hire at more moderate wages than usual; but still too high in proportion to the farmer's means of paying them. The depression of agriculture, and scarcity of money, checked all improvements with farmers, and even prevented them executing works that were necessary. Other classes of this community will discover how necessary it is to their own success, that this country should yield an abundant and valuable production. No foreign produce brought into it will enrich it much, unless paid for by a produce raised here from our

own lands and industry. We are receiving a large supply of the most valuable commodity that could be sent to us from the British Isles, in able-bodied men, if we only employ them usefully—Would it not be the duty of every one to try all possible means, that they should be able to raise in Canada the bread and meat for their own food, and not be depending upon a foreign country for it? Any man who sees this fine country, must be astonished when he learns that it is not producing food for her own thin population.

Cote St. Paul, 26th August, 1842.

DRAINING.

This is the best and most convenient season in the year for draining and top-dressing grass land with compost manure. Unless draining is attended to now, it cannot be executed so well at any other time during this year. One man will do more work at draining at the proper season, than two men will do when the soil is too wet, and the days often wet and short. We have repeatedly stated that perfect drainage would effect more improvement in the soil here, than any other plan that could be adopted. Indeed it is impossible that any profitable improvement can be introduced in our agriculture without more perfect drainage. Much of the efficacy of drains will depend upon their proper formation. In every soil open drains should be well sloped, to prevent the sides falling in after frost. For all small drains, the width of the shovel will be sufficient at the bottom; but drains of two feet deep should be from four to five feet wide at the top, and those of two feet and a half to three feet deep should be from five to six feet, and perhaps wider at the top. In the middle of arable fields, it would be well to have drains so sloped, that the plough and horses could readily pass through them. These sort of drains look well, answer every necessary purpose, and are easy to keep in order.

FLAX.

Flax requires a great depth of soil, as the fine suckers of the plant are said to strike down to at least a third of their height above ground, where they can penetrate the soil. The manure should be put into the soil one year before the flax is sown. The ground should be fine moulded, and the seed put in with care, so that it be not covered on an average above three inches deep. The soil should be well drained, as stagnant water is very injurious to it. In the district of Courtrai, in Belgium, the flax is dried and kept over until the following spring before it is steeped, and this mode of management is said to improve the quality of the flax, and that the longer it is kept before it is steeped so much better the flax will be, provided it is kept safe and dry. The pus should be formed for steeping flax, three months before the flax is put into the water. The water in which flax has been steeped is said to be a good manure for top-dressing grass, and the husks of flax to be excellent feeding for cows—in fact the best of feeding. It was ascertained last year, by a Committee of the House of Commons, that 50,000 tons

of flax had been imported into Britain from foreign countries, at a cost of six millions pounds sterling. We have no doubt that flax might be produced in Canada by cultivating the land properly, as they do in Belgium for this crop. We have this year, seen crops of flax grown in Canada East, that were of middling quality, notwithstanding the soil was cultivated in the most slovenly manner possible, and not manured, or the weeds taken out of the crop. Indeed we never have seen, in this country, one acre of land properly cultivated for producing a good crop of flax. We have for many years, urged the expediency of encouraging the cultivation of flax, to make up, in some degree, for the loss of wheat, but no attention has been given to the matter—another proof, if any is wanted, how little the interests of agriculturists was regarded by our rulers, legislators, or men of influence in the country. The most unimportant political party question would attract attention, obtain consideration and discussion, while the most important interests of the country has been utterly neglected, as if they were undeserving the slightest consideration. All political parties have alike neglected our agriculture.

We copy an interesting paragraph from a communication which appeared in *The Mark Lane Express* of the 1st of August, relative to the weight of cattle in different degrees of fatness:—

“The gross weight alone is an imperfect test of condition—the heavier animals are not always the fatest, more the smaller ones invariably in a lean state; the weight of a carcass or quarters of animals, in different degrees of condition, exhibit considerable variation in relation to their weight alive; the carcass or quarters of oxen, for instance, are found to bear the following proportions to the gross weight:—

	Per Cent.	Per Cent.
A lean Ox,.....	46—the official being	54
Half fat.....	54	46
Moderately fat.....	62	38
Extra fat.....	70	30

It is universally admitted that cattle ought not to be put to rich pastures or forcing food, in a lower state of condition, than that denominated half fat.”

CORN LAWS.—We wish to call the attention of parties, who are so fond of contending that the British farmer has considerable protection by the extra freight which foreign grain has to pay when imported into this country, to the fact, that there are at present in the Tyne three vessels with wheat, one from Bremen, at sixpence per quarter freight, another from Hamburg, at ninepence per quarter, and the other from Stettin at two shillings per quarter. Vessels, we are informed, are freighting from the ports in the Mediterranean at 4s. 6d. per quarter for wheat. Now, the majority of these rates are much below what the farmers in the northern counties in England pay before their grain gets to market. — *Newcastle Journal*.

POETRY.

(Copied from *The Mark Lane Express*).

DUST!

Dust! Dust! thou art old in fame,
For man gamed from this his form and his name;
And though proud he may be of his noble line,
'The haughtiest race are but sons of thine,
Thou wert the food of the first false thing,
That glazingly coiled with a hidden sting.
Thou wert cursed, and that curse is existing now,
While the furrow is moist with "the sweat of
thy brow!"

Thou choked the artisan over his toil,
Thou dwellest with the skulls on the dead-strown
soil.

Dust! Dust! who shall distrust,
Mingling with thee, and the moth, and the rust?

Horses that look on ten thousand foes,
With unshifting gaze, and a firm repose,
From the coming dust will turn and shrink,
With retreating steps, and a cowardly wank.
'The maiden's dark eyes shall conquer all;
'The prince and the peasant alike may fall;
But those brilliant orbs shall quail to meet
Old blustering March with his whirlwind sheet:
For the glance that bids each captive sigh,
Oh! where is its might when there's "dust in
the eye?"

Dust! Dust! thou art rudely thrust
On the present one's face and the past one's bust!

Dust! Dust! where'er we may be,
In palace or hut, we are jostled by thee.
Scattered over Creation thy atoms we find,
'Thou ridest on sun-beams and mountest the
wind.

Thou art watched for and feared on the red desert
ground,
At the hearth of our home thou com'st edding
round;

On the threshold and housetop thy presence is
seen,

On the high mountain path, and the hedge-row
green.

In the cradle's fair crivoth thou steal'st to lude,
And thou'rt thrown on the coffin-lid, dimming
his pride.

Dust! Dust! who shall distrust,
Mingling with thee, and the moth, and the rust?

There's a famous old dustman comes cleaning
the way,

He gathers by night, and he gathers by day;
He sorts the shroud-rags, he keeps gray bones,
And locks up his stores under marble stones.
When he comes for your ashes you know him
full well,

For he carries a scythe instead of a bell.
His name's, oh! whisper it under your breath,
For 'tis he—the immortal old scavenger, Death.
Make ready—make ready, ye shall and ye must,
There's no putting him off when he calls for dust.
Dust! Dust! who shall distrust,
Mingling with thee, and the moth, and the rust?

Eliza Cooke.

THE FARMERS' SONG.

"Well, farmer, how speaketh the weather to-
day?

How springeth the seed through the soil?
And how, when their trust these broad acres re-
pay,

Wilt thou find the reward for their toil?"
The farmer look'd up through the calm of the
sky—

The farmer look'd out o'er his field,
And he paused as if scanning with spirit and
eye,
The harvest those acres would yield.

"For years have my forefathers followed the
plough,
And the harvest the Godhead has given!
With the fruits which in autumn, they shook from
the bough

They gave to the purpose of heaven?
The fruits have the board of the festival grac'd,

And the grain has been ground in the mill;
Where the poor have requir'd, it has freely been
plac'd,
But it never was food for the still!

"All blessings have follow'd to them and to
theirs,
And plenty, and pleasure, and peace;
They sow'd not in evil, they reap'd not in tears,
And each season was crown'd with increase!
Like them have I sow'd, and like them have I
mow'd,

And I've reap'd, and I've gather'd like them;
And while I tread in so blameless a road,
Neither Heaven nor earth will condemn!"

THE ROYAL ENGLISH AGRICULTURAL
SOCIETY.

The Anniversary Meeting of the Royal
Agricultural Society of England, was held
this day at their house in Hanover-square;
Henry Handley, Esqr., President, in the
chair. The following report of the Council
was read:—

REPORT OF THE COUNCIL.

Four years only have elapsed since the
foundation of the English Agricultural So-
ciety, and two only from the date of its in-
corporation to the present time. In looking
back upon the progress of its labours and
the steady prosecution of its national objects,
it cannot fail to be the source of sincere gra-
tification to its numerous members, and to
every well-wisher of his country, that, based
on principles of the soundest policy and
most evident practical utility, this society
has succeeded in impressing on the agricul-
tural world, a just sense of the incalculable
results which must attend the rational ap-
plication of science to agriculture, in in-
creasing the immense capabilities of our
native soil, and in developing the hidden re-
sources of the empire. In that short period
the society has laid the firm foundations of
its future progress; and although the full
accomplishment of its objects can only be
the result of a more extended sphere and
circuit of its labours, the influence of its ex-
ample and operation has already tended to
clear away those local prejudices in farming
which from time immemorial had proved the
fatal obstacles to improvement, and has ex-
cited a candid spirit of inquiry on every sub-
ject connected with the common good of the
country and the individual interests of its
members. The good seed has been care-
fully sown, the young plant is up and thriv-
ing, and there is every promise of an abun-
dant harvest to be reaped in future years.

The motto of the Society comprises in
the terms of its enunciation, the vital germ
of every progressive and stable improve-
ment, not only in agricultural economy, but
in every other branch of national industry
under the direction and control of the mind;
and the union of practice and science con-
stitutes accordingly the perfection of our
principles of action in every department of
good husbandry, the salutary restraints of
the one principle preventing the undue pre-
ponderance of the other. The routine of
local practice and the limited rules of culti-
vation invariably adopted and followed in
particular districts, have at length been
found not only to be imperfect means for the
attainment of the end in view, but being
confined to their own peculiar case they
have had no general application because
founded on no general principles. While,
however, these local prejudices have so long
proved obstacles to improvement, and are
necessarily the result of the adoption of
practice only, obsolete in its date and un-
corrected by intelligent principles, the Coun-
cil are most anxious at the present moment

to guard their members against the opposite
evil of the undue and arbitrary application of
mere unaided and theoretical science to the
operation of agriculture. It is the natural
tendency of the human mind to run into ex-
tremes, instead of holding the just balance
of dispassionate reason in the pursuit of its
inquiries. No sooner are men convinced of
one error than their liability to fall into an
opposite one becomes apparent: and in the
case of agriculture, the prejudices of past
ages having given way before the salutary
conviction of just principles; it has naturally
resulted that the evils of the present day are
those attendant on an incorrect or undue
appreciation of science itself, or of science
falsely so called; practice, in many instan-
ces, instead of being enlightened or directed
in its operations by the guidance of novel
and untried theories, being only found to be
disturbed in its course by the adoption of
suggestions for its improvement, derived
from a science hastily assumed to be perfect,
while its very elementary truths are either
distorted or imperfectly understood. To
discover the recondite laws of vegetable life,
and to ascertain the effect of chemical influ-
ence, as well as of mechanical and physical
condition, in promoting, retarding, or modi-
fying their agency, are among the problems
of a higher science than we yet possess,
and it is the empirical assumption of fallacious
principles having the semblance only of
truth, which leads to so many false theories
and wrong practices, and brings disgrace
and injury on the just cause of a sound and
discreet application of genuine science. It
will be the constant duty of the Council to
impress upon every member of the Society
their uniform and decided opinion that expe-
riment must ever form the indispensable
basis of scientific truth, and practice the
only sure and satisfactory road to agricul-
tural improvement.

This report states that the present amount
of members are as follows:—

Life Governors.....	105
Governors.....	211
Members.....	5,194

Total..... 5,834

The remainder of the report is not parti-
cularly interesting to us.

THE COLIC IN HORSES.

CAUSES.—The colic is sometimes occa-
sioned by perspiration being suddenly check-
ed from imprudent exposure to wet or cold,
or drinking a large quantity of cold water
when the body was heated by exercise, or
it may be produced by eating too much im-
mediately after fatigue, or by bad hay, new
corn, or whatever is new or prone to foment;
and sometimes it may originate in weak and
delicate animals, from the fomentation and
confinement of air in the intestines.

SYMPTOMS.—This disease is generally
manifested by the horse's suddenly lying
down and rising again, and sometimes strik-
ing his belly with his hind feet; he stamps
with his fore feet, and refuses every kind of
food. When the gripes are violent, he
throws up his body in convulsive motions,
his eyes are turned up, and his limbs are
stretched out as if dying; he falls into pro-
fuse sweats, succeeded by cold shivering
fits; strives to stale; turns his head fre-
quently towards his flanks; rolls over, and
often turns on his back.

When the pulse becomes small and fee-
ble, the horse frequently lying on his back,
and voiding small portions of dung like
ginger-bread nuts, his back-bone elevated,

and his legs and ears cold, it is a certain indication that inflammation has taken place. When a mortification advances, the animal appears free from pain and easier, which is a sure prelude to death.

Clyster.—In all cases of the colic, clysters should be administered with as little delay as possible; and repeated every half hour until the disorder be removed or considerably relieved. Previous to introducing the clyster-pipe, the hardened dung in the rectum should as before stated, be cleared away.

Mr. White recommends to give, as soon as the disorder is observed, the following draught:—

Balsam of Capivi,	1 ounce,
Oil of Juniper,	2 drachms,
Simple mint-water,	1 ounce,

to be mixed in one dose. Or the following: Venice turpentine, one ounce, mixed with the yolk of an egg; adding gradually peppermint-water, one pint; also spirit of nitrous ether, half an ounce for one dose.

A clyster also should be injected, consisting of six quarts of water-gruel, or warm water, and eight ounces of common salt.

If the disease has continued for several hours, and the pain excessive, with a quick pulse, it will be proper to bleed to three quarts, or sometimes more, to prevent inflammation and remove the spasmodic contraction of the intestines. The draught and clyster should also be repeated, and the belly be rubbed for a length of time with mustard embrocation. If the disease be exceeding violent and resists these remedies, which will very rarely occur, a pint of castor oil, with an ounce and a half of tincture of opium may be given. The horse must be rubbed perfectly dry, and well clothed; and his stand filled with clean litter for a considerable light. — *Lawson's Modern Farriery.*

SPRING CARRIAGES.

The great advantage of springs in lessening the labour of draught has been ably illustrated by Edgeworth, who thus explains their action in this respect:—"Theory shows," he observes, "that whilst the wheels of a carriage pass over an obstacle, the load on the carriage must rise along with the wheels, unless it be supported by springs; but that if the load be hung upon springs, whilst the carriage-wheels tend to throw the load upwards, as they rise suddenly over an obstacle, the springs will bend, because they are opposed not only by the weight, but by the load acting downwards; and the load will consequently not be thrown up suddenly so high as if there were no springs." But the advantage does not rest on theory alone. Among the interesting experiments on carriages, of which the results are recorded in Edgeworth's treatise, are some which are very decisive as to the saving of labour occasioned by them. In one experiment with two-wheeled carriages, a gross load of 8 cwt. 2 quarters, was drawn with rather greater ease with springs, than a gross load of 5 cwt. 2 quarters, and 7 lbs. without them. In another trial with four-wheeled carriages, the gross weight drawn with and without springs were respectively about 17 cwt. and 15 cwt.; but in this case, it is stated, the carriages were not loaded sufficiently to bend the springs with facility, so that their full effect was not ascertained. Some of these experiments were directed to the effect of wooden springs; and the results were sufficient to show how much might be gained by their general adoption in such carriages as are

generally constructed without any springs whatever. In one of the cases related, a man was found capable of drawing in a two-wheeled carriage with wooden springs blocked, to prevent them from acting, a load of 2 cwt.; but when the springs were allowed to play, he drew a load of 3 cwt. 2 quarters, with equal ease. Edgeworth states that he had employed carts with wooden springs for nearly four years, and had used both straight and elliptic wooden springs successfully. He recommends as cheap and durable, a piece of common tough ash, five inches and a half deep in the middle, two inches at each end, and three inches broad, mounted on fixed shackles at one end, and with linking plates at the other. The iron work of the shackles will last for many years, and the wooden springs may be renewed at very trifling cost. Three wooden springs, connected in a similar manner to dunnet-springs, may be used conveniently for common carts.—*Penny Cyclopaedia.*

We have no doubt, that the adoption of wooden springs in constructing common carts, would enable a horse to draw a load on our uneven roads, with much greater ease, than in a cart without springs.

SPRINGS.

Rain and snow fall in quantities so unequal in different districts, and on soils which exercise upon them such various influences, that the phenomena of springs, which are primarily dependent on the penetration to some depth in the earth of water which was absorbed at the surface, are extremely complicated and curious. It is very interesting to geologists to classify and determine the causes of these phenomena, and very important in agriculture and the arts to acquire a power of directing the water currents in and below the soil and strata.—The art of draining consists essentially, in diving to the diffused and injurious springiness of particular soils and situations, a concentrated, perhaps beneficial current; while the artesian wells relieve the hydrostatic pressure prevalent at great depths, and yield copious streams in dry lands and deserts.

As a general rule, springs are permanent in proportion to the depth to which the water which supplies them has descended from the surface; they are perennial and almost inappreciably constant in temperature and volume, whether hot or cold, copious or full, in situations where, from the arrangement of the mineral masses of the globe, deep subterranean channels exist for the reception of rain, and particular impediments direct and contract the passages of reflux to the surface. Such cases are common in stratified countries where jointed limestones or sandstones receive water at elevated points on the surface, and conduct it downwards below strata of clay, which are only pervious at a few points, and there permit natural discharges at lower levels than the recipient surfaces. Frequently these argillaceous strata are so nearly impervious, that artificial perforations relieve the pressure of the subterraneous columns of water better than the few natural points of efflux, and thus pits and levels excavated for mines may drain springs at some distance.

On the contrary, in a country which contains narrow and frequently mixed masses of clay and gravel, or clay and sand, which cover the solid rocks, concentrated springs are almost absent, but there is a prevalent terribility and diffused springiness along the limit of the gravelly or sandy tracts. After a continuance of dry weather such springs

and wetness disappear, to be renewed after the next fall of rain. * * *

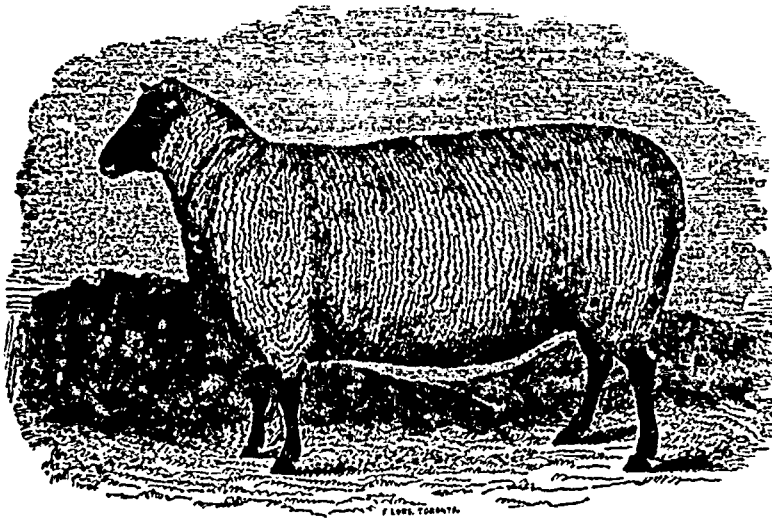
In general then, the water which issues from the earth in one copious spring, has been received by minute absorption on a large surface; as the living tissue of a sponge receives water by absorption through the numerous pores, collects it internally in a few channels, and rejects it by a very limited number of orifices, or as the capillaries collect blood for the veins, and these supply the heart, so 'he porous texture, and channelled structures of rocks permit that continual circulation of water below the earth's surface on which, in a great degree, its habitual character depends.

Between perennial or constant springs, and those which are more dependent on the last shower of rain, the gradations are insensible, and the explanation is entirely obvious upon the general principle stated. One of the most interesting cases of this intermediate series, is that of the intermittent springs. It is a common circumstance on the chalk downs of the South of England (Wiltshire, Dorsetshire), for the valleys to be quite dry in one part of the year (autumn or winter), and very fully watered in another (spring, summer): the springs bursting higher up the valley in some years than in others; according to the quantity of rain which fell in some previous season (as the autumn) and the rate of its transmission through the jointed and absorbent chalk.—*Id.*

SPRAIN, OR STRAIN—Is an injury of muscular or tendinous tissues, resulting from their being forcibly stretched beyond their natural length. The treatment to be adopted for sprains is the immediate application of leeches, in number proportionate to the injury and to the importance of the part.—They should be repeated till the pain and swelling are distinctly decreased; the part should be kept perfectly at rest and cool, and the patient's general health should be kept or made good. When the pain has nearly ceased, and there remains little more than stiffness of the injured part, stimulating liniments, (the common soap liniment, or a mixture of hartshorn and oil for example) may be used.

RUTLANDSHIRE, is one of the best cultivated counties in England. Thirty years ago, it was said that half the land was under grass, and that there was only thirty acres of waste land in the county. The pastures are said to produce from 300 to 400 lbs. of meat annually per acre, which is generally worth from £6. to £8. The plough in general use is one with two unequal wheels attached to the beam, one of which we have imported, and is a most excellent implement on any land that is free from stones and roots. If our pastures in Canada were improved and taken the same care of as in Rutlandshire, perhaps they would produce nearly as much meat per acre; but we have no such thing as pastures here, such as may be seen in almost every county of England and Ireland. We cannot fatten cattle unless we have such pastures as they have in the old country, and the sooner we turn our attention to this particular branch of farming, the better it will be for the farmers and for the country generally.

Mr. Howitt's South Down Ewe.



F. LLOYD TOMBS

We beg to submit to our Agricultural Subscribers, the following extract from the Liverpool Correspondent of *The Montreal Gazette*, dated the 3rd of August. The writer, after stating the probable loss on American flour exported to Liverpool from Canada, says—

"I think you had better fatten stock with your grain, than grind it into flour on any such speculation; and this brings me to another branch of the great food question.

"Since the Tariff came into operation, the expectation of getting live stock from the continent have become more and more faint; but there has been a considerable import of cured meats. American pickled tongues, very good, are supplied at about 22s. the cwt.; American hams, of very tolerable quality, but inferior to the best English, at 45s.; German hams, at 56s. These are wholesale prices. The best Cumberland ham may be quoted at 70s.—some very choice ones, for private use, at 80s.; Irish hams at Liverpool, at 61s. to 66s. At these prices, I consider that, for family use, the Irish and British are fully as cheap as either the American or the German, because they are not so salt; consequently do not require their goodness to be much exhausted by boiling as the former, and their fat is in better condition than in either. There seems every prospect of those articles maintaining something very like present prices, and the slightest revival in trade is felt very sensibly in the demand for bacon. You should, in my opinion, at once get rid of the flour trade, until times change, and commence curing for the English market. Surely, with the advantage of 3. 61 duty, instead of 14s., you can beat the Yankees in the article of hams; if not, it says little for your farmers. But I see no reason why you should not send us as good hams and bacon as the farmers of Cumberland. It is only a few years since the Irish were a little known in our markets as you. Cumberland ham will, as I tell you, bring at the rate of 70s. easily. It will keep eighteen months, and improve if properly packed; and that is just the thing in which American hams I have seen appear to me to be deficient—I will cross the line once or twice, and eat perfectly good in Calcutta or Sidney. You have every advantage; you have a temperate climate—have our fish breed of pigs—have plenty of corn and peas to fatten with. If you have the shrewdness and spi-

rit to occupy it, you have a boundless market for an article which fluctuates in price less than any other, and which is vexed by no "sliding scale," and little affected by the seasons. It is a very few years since the Hüssels, (little farmers and provision dealers), went out of the west of Cumberland to Limerick, and now they kill and cure, every year, for the English market, 30,000 swine. I do not believe your whole continent sends us so much as that one house.

"The coming into effect of the new tariff occasioned a good deal of stir in the ports. Many articles on which the duty was lowered, were taken out of bond to a considerable extent, particularly coffee. Our export trade is a little livelier, and there are signs of improvement, particularly in Manchester and Leeds. But, altogether, the country continues in a very bad state, and the prospect of a fine harvest, and the low value of money, with the autumn orders, could scarcely have done less for us. The funds are firm, but not very high; though money is so plentiful, there is a remarkable indisposition to invest in stocks or shares, native or foreign. Money is accumulating in the hands of the bankers, and good bills, even with three months to run, are freely discounted at 2½ per cent. in London—so difficult does it appear to be to employ money profitably."

From this communication it would appear that something might be done in the way of fattening and curing meat for the home market. But if any thing of the kind will be commenced, we shall have an immense importation of beef and pork from the United States, and it will be the meat of that country that will be shipped by our merchants instead of Canadian. But in any case, it would be well if we had establishments here for curing beef and pork in a proper manner for the English market. One thing is certain, that unless the meat is prepared in such a manner as will please those who are expected to become customers and buy it, it will disappoint those who ship it. The chief point to insure success in this trade, is to cure and prepare the meat according to the English system. We generally entertain too high an opinion of ourselves and of our manner of doing business on this side the Atlantic: but this high opinion of our-

selves will not sell our beef and pork to Englishmen, unless it is cured and prepared to suit their taste, and we may give Englishmen credit for being as good judges of the perfection of all sorts of meat as any other men on earth. We must, therefore, conform to their tastes and opinions in preparing meat for them, or we need not send it to them.

We perceive, by the communication referred to, that money is abundant in England, and would be readily invested in security and profit could be offered to those who have capital. If our affairs were in a healthy state, and all matters proceeding with us as they might be, there would not be any difficulty in obtaining capital to any extent that it might be required for useful employment.



For the British American Cultivator.

FARMING IN THE VICINITY OF YONGE STREET
—THE FOURTH RIDING—THE VILLAGE
OF NEWMARKET—AGRICULTURAL SOCIETY—IMPERTINENCE—NINETY MEMBERS
ONLY, INCLUDING MESSRS. BALDWIN AND
LAFONTAINE!—OFFICERS OF THE SOCIETY—
THE BEST FARMERS—SQUIRES—
PROPOSED AMENDMENT—CONCLUSION.

The satisfaction and pleasure, which a Canadian experiences, derivable from the fact, that the longer he lives and the more he knows of his own native land, the higher rises his idea of its worth and importance, will be best understood by those whose souls, swelling above the trifling transactions of the hour, which embrace what relates to their own immediate interests, warm with a generous spirit of love for their country.

It was my pleasure lately to visit a portion of the back country, lying contiguous to Yonge Street, which your readers all doubtless know, is the great highway leading from the now flourishing City of Toronto to the Holland Landing, a distance of about 35 miles. On each side of this highway, comfortable looking farms, with, at this season of the year, large fields of grain, are presented to the eye of the traveller. The whole aspect of the country is in short very ominous of a wealthy and influential yeomanry, whose descendants are destined to become, under prudent management, the future aristocracy of the Province.

Turning aside from Yonge Street, on the one hand, I passed through a part of the Fourth Riding, somewhat in our political annals, and instead of coming to the conclusion that it was but a back portion of the District, inhabited by a few scattered indigent farmers, the fact was sent home to my mind, that here was indeed one of the really beautiful, fertile, well-cultivated sections of the country, owned by a sterling, persevering, spirited people. It made the heart rejoice to witness the bounty of nature, which every where called forth the husbandman with his numerous retinue to the harvest field. Horses, teams, and men were all engaged, and obliged to be for continuous days together, in gathering and housing the pro-

ducts of the rich wheat field; all seemed to be fully alive to the importance of the hint, "Work while the sun shines."

When at NEWMARKET, a pleasantly located village, upon the East Branch of the Holland River, with its two or three mills—its flourishing Woollen Manufactory—its Stores, Hotels, Coach Manufactory and Cabinet Shops—its four Churches, etc. I was lead to make inquiry as to the existence of an Agricultural Society, and certainly anticipating, after the farms I had seen, finding one in rather a flourishing condition. The vicinity exhibited sufficient marks of the intelligence of the yeomanry, to lead one to believe they were fully alive to the truth of the maxim, that "Union is Strength."—However industrious and active individual farmers may be, yet it is most certainly true, that combined they can do much more to further their own interests and those of their neighbourhood, than they can single-handed. It is an observation, generally true, that where a people exhibit a spirit of interest in each other's welfare, and are careful not only for themselves, but are really anxious to secure weal to their neighbours—prosperity attends them. There is something that deserves success in—

"The heart that can feel for another!"

However, the result of my inquiries as to the Society, was, to say the least of it unexpected and unsatisfactory. It may be true, in impolite language, that "it is none of my business" that the Newmarket Agricultural Society has not been a vigorous and active one, but I shall not the less give the public the benefit, if benefit it be, of such information as I obtained. I found that a society had been formed some few years ago, with the expressed design of promoting "Agriculture, Horticulture, Household Arts, and the Importation of Stock." This society has doubtless been in some degree, indirectly instrumental in furthering some of these objects, but I must be permitted to ask,—not its members truly, for they have been few—but those who should have become so; how much new and valuable seed grain—what useful plants and vegetables—new and improved farming implements, valuable stock embracing the improved breeds of the day—what useful and interesting publications, calculated to promote the intelligence of their rising families, and to infuse a general spirit of inquiry—they, the good people of the Fourth Riding, joined together hand in hand, like brethren, the *Bond of Union* their agricultural Society have introduced? I beg pardon of the farmers for impertinence, but in the present instance, there is such an appearance of excuse for it, that the guilt causes "no pang of conscience!"

The Newmarket Society, established as above mentioned, and which should have been an object of peculiar interest to the farmers, has I am told never had more than ninety members, and even some of these are far-fetched friends, to wit, Messrs. Lafontaine and R. Baldwin. I am happy I must say to find, what I need hardly have expected to have been otherwise, that these gentlemen, whose names are so intimately connected with the Riding, have not neglected to lend their influence and subscriptions to further a noble cause. It is right however to add, that if these gentlemen, and the remark applies to others as well, could amidst their many avocations, find time to attend occasionally, the meetings of the Society, and by their "powers of speech," would endeavour to dissipate the carelessness and indifference which pervades the minds of many upon the important subjects which are within its peculiar scope, they would render

the Society and the Riding a valuable and praiseworthy service.

But to return. Ninety members! Bless me, where are the hundreds of proprietors of the valuable and rich farms, which are so pleasing to the eye of the traveller, and capable of supplying these proprietors with all degrees of temporal comforts and satisfactions! It would astonish an intelligent person, brought up in a land of enterprise, were he told that some of the most influential and wealthy farmers in the immediate vicinity of Newmarket, have not properly honoured the Society with their presence, and themselves by doing so; while others have of late neglected to pay their annual subscriptions!

The present Officers of the Society are—

Colonel Carthew,	President,
Geo. Plater,	Vice-President,
Michael P. Empey,	Secy. & Treasurer,
Rev. M. Ritchie,	Chaplain.

COMMITTEE:

James Pearson,	Isaac Jandy,
Nathaniel Pearson,	John Rogers,
Peter Pearson,	Capt. Irving,
James Forsyth,	F. Green,
P. Lyne,	Geo. Simpson,
R. H. Smith,	Thomas Garbutt,
Joshua Wilson,	Lot Harman,
Thomas Cosford,	John Clubine.

It is useful to remark that much, very much indeed, depends upon the efficiency and energy of the officers of an institution, and if under their auspices it has not been vigorous and flourishing, there is evidence either of want of zeal or of want of good management. Those who are fully alive to the importance of the Agricultural Society, will not fail to appreciate the exertions of such officers as have faithfully discharged their duties, while at the same time, they will not omit also to make in their own minds, (for the task of 'speaking out' would be an invidious one), a proper estimate of the character of individuals who accept of office, and then treat its duties with carelessness and neglect. Some situations are purely honorary, and originated to promote the public good, having no pecuniary emolument connected with them, and these are the situations which the best and most patriotic friends of the country are the best calculated to fill. No truly honourable man would think of accepting such a situation, without expecting at the same time to be zealous and spirited in the discharge of its duties. The application of these remarks to the various officers of an Agricultural Society is obvious; and in reference to the officers of the particular institution which has called them forth, it is not incumbent on one to make this application.

Desirous of knowing who were the most intelligent and enterprising farmers in the vicinity of Newmarket, I asked who among them had been the most zealous in forwarding the interests of the Society, under the impression that these would most probably be of that class. I was told that Captain Irving had been elected President in Oct'r, 1840, and that he acted for the then ensuing year, aiding and assisting the Society, both by liberal donations, and which was quite as important, by carefully attending to the duties of his office. Preceding him was James Pearson, a wealthy farmer, who was instrumental in getting up the Society, and who has proved himself friendly to the cause of agriculture, by giving a share of his time and attention to its interests. I may remark, that Mr. Pearson and perhaps some others whom I may mention, from the situations which they hold, are entitled to be dignified as "Squires," were it my particular business to be very courteous, but I beg leave at this time simply to write of all such

as farmers, believing that the appendage of Esquire to the name of an honest yeoman, does not make him a better or more noble man, nor is it particularly calculated to raise him in the estimation of those who know of what true worth is really composed. The names of Isaac Jandy, Joshua Wilson, Geo. Plater, James Forsyth, George Simpson, Peter and Nathaniel Pearson, and Lot Harman were made honourable mention of as good friends to the Society, and of the noble cause of agriculture. It is right that such men should be pointed out, and respected in proportion to their usefulness. Michael P. Empey, a merchant at Newmarket, it will be observed is the Secretary and Treasurer of the Society, and though not a farmer, is known as one of its warmest and useful friends.

By the Constitution of the Society, it appears the members of the Executive Committee is limited to 16. It is read 16 "or more," it appears to me, there would be a manifest improvement. The office of Committeemen, is one of the most efficient connected with an Agricultural Society; and in order that its influence might be generally felt, it is always advisable to endeavour to have one good Committeeman in every line to converse with his neighbours as to prosperity and business of the Society, to warn them out to the general meetings, and to solicit their support.

I was on the point of concluding this essay, when those 90 members run into my mind again. Only 90 members! just think of this ye friends of agriculture! One of the most fertile sections of the Province, well settled and pretty well cultivated, is able to turn out ninety members as belonging to their Agricultural Society! What a spirit of "looking on and doing nothing" is here manifested! It would not be easy to calculate the amount of good which might be effected by a Society managed with spirit and ability. There has been no such discovery yet made as absolute perfection in agriculture, but on the contrary a vast field is lying open unimproved, and I know no better way of occupying the untenanted tract, with profit to those who immediately occupy, and to the country at large, than by bringing as it were into one vast store house, all the knowledge and skill derived from experience which the oldest and the ablest, as well as others of those, who have followed the necessary and honourable business of cultivating the earth, have been able to acquire, in order that all may have the benefit of them. The meetings of the Society itself, afford an agreeable opportunity for collecting and conveying information throughout its own neighbourhood, and THE CULTIVATOR, now happily established in the City of Toronto, affords a medium of more general communication with other parts of the Province.—It is a source of regret, that the friends of agriculture do not "arise in their might," and assist to make THE CULTIVATOR peculiarly interesting in each and every vicinity in Canada, by cheerful and spirited communications. There is no duty more gratifying to the enlightened and generous man than that of imparting useful instruction to his fellows; and there is no task which the really patriotic Canadian, whose attention has been turned to the subject, should be more ready to perform. W. O. BUELL.

August 20th, 1842.

IMPROVEMENT IN THE BREED OF IRISH PIGS.—Five years ago, some hogs were sent from Berkshire and Hampshire to Bristol, for Ireland. This is one cause of the improvement. Another is, the plan of frequently washing the skin, and rubbing it with a hard brush. This is the way Hampshire farmers manage their pigs.

From the Transactions of the New York Agricultural Society.

ENGLISH AGRICULTURE—A GLANCE AT ITS PROGRESS AND PROSPECTS — BY JOHN HANNAH, NORTH DEIGHTON, WETHERBY, YORKSHIRE, ENGLAND.

The paramount importance of agriculture as a producer of national wealth, its capability of rendering a people independent of others for the means of life and enjoyment, have always entitled it to take the first rank in a nation's estimation. And, although it has not always secured this estimation, we shall find, if we examine carefully the records, both of sacred and profane history, that the policy which has sanctioned this neglect, has caused the ruin of the best interests of the country.

But although this truth has been open to the eyes of the world for ages, it is an extraordinary evidence of the perversity of human intelligence, that it is only within, comparatively speaking, a few years that it has been perceived, or at least acknowledged, so as to be acted upon in England. The effect, however, of this knowledge has been so magical, yet so palpably evident; the improvement and extension of agriculture, as a practice, has been so rapid, and its estimation, as a science, so great, that it would be a labour worthy of the ablest pen to trace that progress, because it is a labour that would be fully appreciated by every inquiring mind. Composed, however, as such an inquiry should be, of a history of its condition, principles, practice, and statistics, and that too, in a country where an endless variety, seasons and climate combine to make exceptions to every principle, to vary every practice, and to mystify every calculation, it would seem to be a work which, if not above the power of an individual, would require every assistance that time and talent could secure him. To attempt, then, had we the ability requisite, to give such a history, of even one branch of the subject, in a paper like the present, and that too, in the few days which circumstances, over which I have no control, (I am now writing at exactly one month from the day, yet more than four thousand miles from the place of publication), I am able to give to its consideration, would be absurd. Yet, although the comprehensive nature of this subject prevents any attempt at such a view of it, it is attended with one advantage, its high importance will give, even to this cursory "glance," which it would not otherwise possess.—That this interest will not be entirely wasted I have the presumption to hope. Information is the corner stone of interest, and few inquiring minds can be led to the view of any subject in its past and present phasis, without making some lesson for the future.

In entering upon the first part of our subject, the progress of English agriculture, the course that suggests itself to us is to divide it into those marked epochs of transition, or change, which are discoverable in the progress of every thing connected with, or influenced by human nature; and to look at the spirit pervading the practice at each period. Taking, however, a general view of the subject, we observe but one period of marked transition; a change from a state of things under which agriculture languished for hundreds of years without making any advance to one, under which, in fewer months, it has made wonderful progress and improvement. This is the great phenomena that presents itself to us in tracing the progress of English agriculture; and indeed that a science which was necessarily prac-

ticed and extended with the increase of population, should remain comparatively speaking, stationary; at least, that it should be surpassed by every other art or science, in all approaches to permanent principle; and that, after a torpid existence of more than 1,600 years, it should start at once into the vigour of youth; develop, in the course of a generation, the energies that centuries had failed to elicit, is one of no mean order. In order, therefore, to illustrate this progress, it will be necessary for us to look, first, at the practice of agriculture previous to the transition; at the influences tending to produce a change; a third, the result of these influences, as developed in the practice up to the present time.

Of the practice of agriculture in England before the Roman invasion, we find little mention made by historians. We are told by Cæsar that it had made slight progress in the counties of Somerset, Hants, and Wilts; that they grew corn, manured the land, and had abundance of cattle; while the rest of the people led a more savage life, living upon the game of the forest and the spontaneous productions of the earth.—After the conquest of Britain, a change took place. "Whosoever the Roman conquers, he inhabits," says Seneca, (Consolat. ad Helvætiam, c. 6); and where he inhabited, history assures us he always carried the language, the manners, the arts and the vices of Rome. Africa, Spain, Gaul, and Pannonia, are, as is attested by Apuleius, Strabo, and Paterculus, evidences of the manner in which "the nations of the empire insensibly melted away into the Roman name and people." And Britain, if we may believe Tacitus, was not an exception.—"Thus, he tells us that Agricola, "to wean them from their savage customs, enticed them with pleasure, and encouraged them to build temples," &c. Also, that "to establish a system of education, and to give the sons of the leading men a knowledge of letters, was a part of his policy," and that by these and other means, "they who had always disclaimed the Roman language, began to cultivate its beauties. The Roman apparel was seen without prejudice, and the toga became a fashionable part of dress.—By degrees the charms of vice gained admission to their hearts; baths, porticoes, and elegant banquets grew into vogue, and the new manners, which in fact seemed only to sweeten slavery, were, by the unsuspecting Britons, called the arts of polished humanity." With the other arts of Rome, it is but fair, therefore, to presume that her colonists introduced and practiced her agriculture. Indeed, it must have been both introduced and encouraged, for we have it from the Emperor Julian himself, (Orat. ad S. P. Q. Atheniensem, p. 250), that he at one time freighted a fleet of 600 vessels with corn exacted from the Britons. "And if," says Gibbon, (ch. 19, Decline and Fall of Roman Empire), "we compute those vessels at only 70 tons each, they were capable of exporting 120,000 quarters, and the country which could bear this must have attained an improved state of agriculture."

From these facts then, it will be evident that if we would look at the condition of English agriculture during the first five centuries, we must turn to that of Rome.—Indeed, our reason tells us that, practiced by Romans themselves for more than 400 years, it must have approximated to that of the mother country, almost as much as climate and other differences between the two countries would allow. But although we have no records illustrative of the subject, it is impossible for the fact to be otherwise; for at the period when Rome sent her colonists to Britain, agriculture was, and conti-

nued for ages afterwards, to be the most honourable and esteemed of all professions. Her highest characters, amongst whom it will suffice to mention Cincinnatus and Curius Dentatus, employed themselves in the pursuit; and Cato himself tells us that "when they would praise a deserving man, he was called a farmer and a good husband-man." But not only had it attained this estimation as a profession, but had made no mean advance as a practice. Industry and observation had removed the errors of ancient custom, and Cato, Varro, Cicero, Virgil, Columella, and Pliny had employed their pens in promulgating its principles. Thus, we are told that they cultivated wheat, barley, oats, beans, peas, flax, lupines, kidney-beans, tares, turnips, &c.; also, the vines, olives, &c. Gibbon too, tells (Decline and Fall, c. 2), that "the use of artificial grasses became familiar to the farmers both of Italy and the provinces; and that the assured supply of wholesome and plentiful food for the cattle during the winter, multiplied the number of flocks and herds, which, in their turn, contributed to the fertility of the soil." Thus, in fact, they had partly approximated to that system which has enabled the farmer of the present day, by alternate white and green crops, to double the value of his produce and to increase the fertility of his soil.

Of manures, they used those animal and vegetable ones which are at the present day employed. Lime, marl, and various composts were in use. Of the value, too, of liquid manure, and of the injury done to the dung-heap by being too long exposed to the action of the atmosphere, they were conscious, and dug pits in which to store it, in order to prevent the double waste. In this, they made a slight approach to the Flemings of the present age, whose careful management of their farm-yard manure, and the liquid from it, is worthy of our imitation.—A still further knowledge of the value of manure is displayed by the Romans in their burning the stubble, collecting ashes, and even sowing green crops for the purpose of ploughing in. (Varro. l. c. 3).

They also used top-dressings of hot manures, such as pigeons' dung powdered, which was put in with the hoe. In the practical operations of agriculture, when we take into account the simple mechanism they employed, they were by no means contemptible. Thus, Pliny tells us that they were particularly careful in ploughing, endeavouring to have perfectly straight and even furrows. They ploughed the land three times over, always before sowing; sometimes taking a furrow nine inches deep, and sometimes only three. On heavy soil, nine ploughings were frequently given. They made a fallow every other year. Indeed it would appear that the advantage arising to vegetation, from the soil being well pulverized, was well known; for Cato being asked, "What is good tillage?" answers, "To plough." "What is the next?" "To plough. The third to manure. The remainder is to sow plentifully, to choose the seed carefully, and to eradicate as many weeds as possible."

For this purpose, the hoe was used liberally. Crops, when too luxuriant were, as now, depastured for a time. The seed was sown in the ridge, as well as broadcast furrow, a practice now termed "ribbing," and which, with an efficient system of ploughing, if not superior, is equal to the drill system.

Among the permanent improvements, draining was esteemed and practiced in some degree, if we may judge by the mention made by the Latin writers, of the good effects derived from it, and by the particular directions given as to their construction,

Live stock, in which we include horses, oxen, asses, sheep, goats, swine, geese, ducks, hens, bees, &c., &c., occupied their care and attention. And the various breeds were propagated upon principles, some of which would be well worthy of attention at the present day.

Indeed, let us look which way we will upon the subject, we find the high estimation in which it was held as a profession, an index of its advance as a practice. It is, therefore, far to presume not merely that the Roman colonists introduced a system of agriculture into Britain, as stated by all authorities, but that they introduced the Roman system, and made use of Roman experience in practicing it. Reason tells us it must have been so; for facts, some of which we have mentioned, show that she did so, with respect to every other art, science, or custom, not merely in Britain, but wherever she carried her victorious arms.

In the preceding sketch, therefore, of the practice of the Romans, we obtain a pretty correct, and indeed the only view of the agriculture of England, during the first five centuries of the Christian era. It is true, that a difference in the climate, &c., might cause some slight variation in the practices of the two countries. But, in the foregoing summary of agricultural knowledge, as practiced by the Romans, during the time Britain was a part of their Empire, it will be obvious that we have recorded nothing but what was adapted to England. It would, therefore, be far to infer that every practice there mentioned was adopted. Assuming this, and looking forward for a thousand years, we observe the phenomena which we have before mentioned, as characterizing the progress (if it be not an *Iberism*, so to call it), of agriculture till a late period. For even if we make the liberal allowance for a degeneracy in the science, owing to the transplanting it from Italian to English soil, we cannot, till after the sixteenth century, discover the least improvement developed in the practice.

Thus we can find no advance made in the use of tillages, in the construction of implements, or in permanent improvements.—The old Roman system of alternate crop and fallow, or at most, of two crops and a fallow, still held its unquestioned sway.—Nor do we discover any traces of those artificial grasses which Gibbon tells us increased the number of herds and the fertility of the soil. It is possible, however, that the Romans never did introduce these into England, or they could scarcely have gone completely out of use. Owing to this, we find that the principal part of the land was grazed on open commons; while those lands nearest their habitations were cultivated for the growth of corn. The consequence of this was, that as there was no fodder to be had, but such as was grown on natural meadows, the cattle starved upon the hungry common during winter, and the enclosed land, owing to no manure being made, grew gradually less productive. Thus we are told that they experienced the greatest difficulty in keeping their cattle alive during winter; that many died, and many were killed (to use an *Irishism*) to keep them from dying. That their oxen, too, were so badly fed, that it required six to plough half an acre per day; and that four times the seed was reckoned a fair crop under this management.

Their variety of crops was very limited, oats, barley, rye, pease, being the staple productions. Wheat, the farmers' paying crop, was then very little known. Thus, Tusser says:—

"In Suffolk again, where wheat never grew."

Even at the commencement of the 17th century, it was a luxury confined to the tables of the nobility of the land.

The most important part of the farmer's possessions was the live stock. And it only wanted a better system of management in the production of food, to have made him progress in this branch of his profession.—Cattle, however, could make but a poor growth on the common pastures, or indeed, upon any pastures during the winter months, and consequently, they were a scarce stock. Sheep could do no better upon this method, and thus, with the demand for wool, caused them to be kept in great quantities. The neglect of cattle for sheep, had so increased, that we find it ordained in 1533, that no man should keep more than 2,400 sheep, (25 H. 8. c. 31), and in 1555, that wherever there were 66 sheep, a cow should be kept; and a calf bred wherever there were 120, (2 and 3 Phil. and Mary, c. 3).

Nor was its standing as a profession very high. The position of the farmer was that of the humble and contented labourer, and his qualifications were industry and sobriety. Education and research were unnecessary, and consequently unknown. His path was the path of his predecessor; it was well beaten, and was easily travelled upon. But no where do we discover so closely, the characteristics of a people, as in the customs and duties of their women. No where do we see the station of the man more plainly than in the bearing of his help-mate. Apply this principle, in the present instance, and the farmer's true position will require no further illustration; for we are told by Sir A. Fitzherbert, that it was "the wife's occupation to winnow all corn, to make malt, to wash and wring, to make lay, to sear corn, and in time of need, to help her husband to fill the muckwain, or dung cart, to drive the plough, to load corn, hay, and such," &c., &c.

Such then was the position which agriculture, after a practice of more than 1,600 years, had assumed. From the middle of the 17th to the middle of the 18th century, a change began to creep over its spirit, the effects of which are evident in the practice of the present century. And it is now our duty to examine the influence which promoted this change.

Time is the parent of change. As there is a natural tendency in man to increase in knowledge and in strength, up to a certain period, so is there in every art or science, to advance towards, if not to attain perfection. That this spirit should operate upon agriculture is natural; that, however, it should be so long unmanifested, is a phenomena produced by certain influences; and to the removal of these influences we must ascribe its manifestation at all. Thus, if we saw a youth making no progress in size, from the age of 5 to 15 years, and then beginning to shoot upward, it would be his former stoppage, not his present growth, which would be marvellous. We should ascribe this to the removal of some disordered functions which had obstructed his natural tendency. What then was the disorder which obstructed that progress which agriculture ought to have made, and to the destruction of the influence of which we owe the after progress of the science.

That frequent changes of proprietorship from the Romans to the Saxons, the Danes, and the Normans, the ravages of war, the iron hand of feudalism and priestly domination over the mind, are amongst these influences, cannot be doubted; and for some centuries we may allow that they would be predominant. When, however, we consider that it was long after these influences were

diminished before agriculture began to awake from its lethargy; when we look at the great progress made in every domestic polished art, during the 14th, 15th, and 16th centuries, and when we consider that science had fixed upon a footing of security, trade, manufactures, and commerce; and that the paths of learning and literature could show the footsteps of such men as Chaucer, Leland, Ascham, Tyndale, Caxton, Sydney, Spenser, Shakspeare, Bacon, Milton, &c., &c., before agriculture had advanced one step towards laying the foundation of future excellence, we must call to our aid some other influence to account for the phenomena. This we shall find in itself.—Every age has a marked spirit which stamps with its influence every improvement, and tinges every event. Every science, too, at certain periods, feels a peculiar influence, which turns its energies to the development or non-development of truth. And by the combined operation of one spirit upon agriculture, we may explain the lethargic existence of English agriculture.

It was the oldest science, and consequently was considered to be the best *known* practice; whence, to use language we have before employed, "it became the youngest in theory; and without principles to regulate its common usage, sanctioned by ancient dogmas, ruled in their stead. Under all circumstances, these remained the same, and of course the practice varied not. The road which custom had marked out was *beaten and smooth, and the farmer continued to travel upon it. It was a circle too, and brought him always to the place he started from; and he never lost himself.*—But in travelling upon one path, and at one pace for a length of time, we both wear out the road, and incapacitate ourselves for travelling at any other pace. So a long course of injudicious management and cropping, not only exhausted the arable land, but, as the fatalism of the Turks has prevented them from marching on with contemporary nations in the scale of civilization, the practice of a science, the cultivation of which (the same here and every where) required no exertion of mind, deadened the spirit of inquiry in the farmer, and left him an easy uninquiring being, knowing nothing from himself, but governed by an hereditary feeling of obedience to ancient usage."

This, then, was the weight which bound down our agriculture to one long mediocrity. It was considered merely an *imitative* science, instead of an *experimental one*, which, owing to its great variety of operations, and the many different circumstances affecting these operations, it must also be considered, if we would cultivate it with success; for, says Varro, "Nature has given us two ways to agricultural knowledge; imitation and experience. Preceding husbandmen, by experiment, have established many maxims which their posterity generally imitate, but we ought not only to imitate others, but to make experiments, not dictated by chance, but by reason."

But it was not till the middle of the 17th century, that this evil influence began fairly to lose its power. In the Elizabethan age, the mind of man appears to have received a general stimulus, the effect of which is sufficiently manifest in the progress of every branch of human knowledge, and agriculture appears soon after to show some marks of general advance.

It was not however till a much later period in the 18th century, when modern science (by pursuing a system of observation and research, in which the mind of the observer, and the stores of the science were improved at the same time), had, by its

achievements, became justified in acknowledging *no perfection and knowing no impossibility*, that the principal of imitation entirely lost its influence. Then, when every branch of science had reared itself a structure founded upon the rock of observation, when the eye of the philosopher took a wider range, the hitherto unexplored grounds of agriculture were pierced into. Here a neglected spring was brought to light—and there a “mine of rich discovery.” At last the proprietors of these undeveloped resources began to awake; confidence in the hitherto unresisted axioms grew weaker, *imitation* subordinate to *research, observation and deduction*, governed upon Cato’s principle, “not by chance but by reason.” Or the whole case may by thus summarily stated:—

It was the practice to take ancient customs as an infallible guide; nothing was then doubted; nothing investigated; and consequently nothing improved. It is now the principle to do nothing without a reason; every thing therefore, is investigated and consequently every thing improved.

The truth of the former position we have already showed; the results of the other are as clearly developed in the practice of agriculture up to, and at the present time.

(To be Continued).

FURTHER PROCEEDINGS OF THE BRISTOL MEETING OF THE ROYAL ENGLISH AGRICULTURAL SOCIETY.

The show of implements was greater than on any previous occasion, and we regret we cannot describe them all. The following report of the trial of implements may, however possess something interesting to our readers:—

“There was a great many instruments on the ground, consisting principally of ploughs of various construction, turnip-cutting and dibbling-machines, and a patent circular clod-cutting instrument. A plough invented by Mr. Mason, of Grafton, Warwickshire, which, having two arms attached to the share for scattering the soil, did the work of the harrow at the same time, and attracted much attention. It was so easy of management, that the gentleman who explained its advantages, Mr. Stokes, of Newent, Gloucestershire, would frequently hold by one handle for more than a hundred yards. Its slightness of draught, too, and its work, were generally admired; it is said, also, to be adapted to any soil, and, with sheep attached, particularly useful for breaking up old pastures, strong soils, or land which requires harrowing and dragging up to a fine tilth, without the common practice of kneading the surface with the horse’s feet. A subsoil plough, the invention of P. Pusey, Esq., was also pronounced to contain some decided improvements. A machine for superseding digging, the invention of Lady Vavasour, was tried, but proved a complete failure. A plough invented by Mr. T. Huckvalle, Over Norton, Oxford, was generally admired for its novel and simple construction. The share of this instrument being made to shift, a furrow could be taken right or left—thus the company considered a great advantage, enabling the ploughman to execute his work without losing a foot of ground. There was also Mason’s improved Warwickshire one-wheel plough, with double shares, adapted for light soils; a patent conical wheel plough, with tension share and coulter; and a one-wheel Scotch plough, considered by practical farmers, a very efficient instrument.—The Winkfield patent dibbling machine, invented by the Rev. W. I. Rham, was an object of great attraction; it was stated to be

capable of dibbling two, three, or four rows at various distances, from 8 to 27 inches apart, to deposit the seed and manure, and cover and roll the same at one operation, and complete four acres a-day. Most of the newly invented ploughs were tried with Cotnam’s dynamometer, for trying the ease of the draught, and the number of implements submitted for trial was much larger than on any previous occasion. Had the weather been more favourable, these trials would have been, from their great interest, attended by a large number of practical agriculturalists; but unfortunately the very heavy rain, which continued to descend for hours successively, tended both to limit the pleasure and the range of operations.”

At the Council Dinner, several interesting speeches were made by the noblemen and gentlemen present. We beg to select one or two extracts. The Rev. Mr. Smythnes, a successful competitor for Cattle, said:—

“There has been an attempt of late, to persuade the people that the interest of the farmer is at variance with, and opposed to, that of the merchant and the manufacturer; but the enlightened citizen of Bristol appears to have discovered that the bright sunshine of uninterrupted prosperity cannot long illumine the abodes of one class of the population without speedily extending its genial influence to every other; they seem to have discovered the great truth, that we are bound in one inescapable bond, and that we must sink or swim together.”

The Rev. Dr. Buckland made an interesting speech, from which we select the following:—

“At Cambridge the question was mooted how far it was desirable to establish through the influence of that society, example farms and experimental farms. (Hear, hear.) It was impossible to expect that the tenants and cultivators of the soil, who were not the proprietors, should consent to be the victims of experiments, some of which might be successful, and others of which might fail.—(Hear, hear.) It was in vain that the society had found its attention called during its short but most profitable existence, to such admirable works as Mutton on the “Nature and Property of Soils,” Liebig on “Agricultural Chemistry,” Professor Johnston’s “Lectures on Agricultural Chemistry and Geology,” delivered at Durham, and the Lectures of Professor Daubigny on Agriculture, at Oxford. It was in vain that the cultivators of this country had the means of reading such works, unless the proprietors who had the means themselves of higher education in science and literature, would come forward and show their tenants, by their own practice and example, what could be done in conformity with the motto of the society, by uniting “practice with science.” (Cheers.) He should be ungrateful for favours received within the last two days—he should not be discharging the duty which he owed to the gentlemen assembled if he were not to state to them the extraordinary delight he had felt in witnessing the example, the most useful, most successful example he had ever seen in practical agriculture, which within twelve miles of Bristol had been set by his right honourable friend the Earl of Ducie. (Hear.) They had heard much of the benefit of thorough draining and subsoil ploughing, but he knew but few examples in England (though there was many in Scotland)—and some of these had been most ably pointed out that day, moreover, in the Lecture of his friend Mr. Smyth, of Deanston, to whom agriculture owes so much—he knew of but few cases, except

that of the example farm of Lord Ducie, where ever it had been shown practically what could be shown by the application of science to agriculture. It was a fact that about 200 acres, which, seven years ago, was for the most part a morass and a wood, and the best of it grass land not worth 25s. an acre, was now throughout worth from £3 to £4 an acre, and was producing large wheat crops on every field in each alternate year, the artificial green crops sufficient to feed a splendid team of Clydesdale horses, an enormous flock of Leicester sheep, and a herd of short horned oxen and cows, without making or using a single ton of hay throughout the year. He could not do better than recommend every farmer present to go and see what had been done by the Earl of Ducie, and imitate his example. (Cheers.) Let them go and see not only what had been done in the improvement of the productive powers of the soil, but also what had been done in improved machinery in aid of agricultural labour. Let them look to the instruments for which they gave prizes last year at Laverpool. Let them look at the Uley cultivator and steam-engine, and ploughing and other instruments, all made in his Lordship’s own smithy at Uley, near Stroud, and then say if his Lordship had not laid on the agriculturalists of the kingdom, a debt of obligation which no living man could adequately repay. (Hear.) He hoped so splendid an example would be duly followed.”

Mr. Handley, the President of the Society, observed as follows:—

“He was induced to hope that the inefficiency of his services had, at all events, not been prejudicial to the interests of the society, inasmuch as he found that they now numbered amongst their members considerably more than 6,000 persons. (Cheers.) And, let him enforce upon them the fact, that they were 6,000 of the nobility and owners and occupiers of the soil (cheers), every one of whom felt the most intense interest in the great object the society had in view, viz., to augment the means of human subsistence. (Cheers.) If the society had done nothing more, it had at least made agriculture fashionable. (Cheers.) They had, in every part of the kingdom, gentlemen who were anxiously looking out for the purpose of testing every experiment the society might recommend as worthy of consideration.—They had, in every part of England, gentlemen who were most carefully and anxiously investigating the quality of soils and every description of seed, in order to ascertain the most preferable; and, in fact, they were paying that attention which had hitherto never been given to those practical means in agriculture, which agriculturalists knew were so essential to success. But it was not on practical means alone they depended, for they hoped to bring science to bear upon the agriculture of the country.”

We might select many more extracts from speeches delivered at the meeting, but fear our subscribers would not deem them of sufficient interest, so far removed as they are from the scenes of the society’s operations. We trust, however, that the selections we have given, may tend to make agricultural improvement fashionable with legislators and men of influence in British America. Those, we trust, who are anxious to introduce the habits and manners of the English aristocracy, will, we trust, follow the example of British nobles and gentlemen in forwarding agricultural improvements.—Let agricultural improvement once become

fashionable, and we shall not any longer have to complain that its interests will be neglected. We shall, in future numbers, give some interesting selections from Lectures and Essays read before the Society.

AGRICULTURAL SOCIETIES.

We know that such societies are calculated to effect much good, provided they are established and managed on proper principles. Without this they are not of much benefit to the general improvement of agriculture. The Royal English Agricultural Society should be the model for one in Canada, if we possessed the same sort of materials to form one here, which we regret to say is not the case. We have, therefore, suggested the propriety of forming a Board of Agriculture to act for Canada, in the same way the Royal English Society does for England. The following remarks from *The Bristol Mercury* respecting that society, may be useful in showing what might be expected from a similar Society or Board of Agriculture, formed here on the same principles:—

“The Royal Agricultural Society of England may be regarded as the natural head of the numerous ‘Agricultural Associations’ and ‘Farmers’ Clubs’ scattered throughout the country. From the wealth and intelligence, and scientific acquirements of its leading members, it is enabled to reduce theory to practice, and to engage in experiments of a nature and extent which would deter individuals or local bodies of more limited means. Hence its real value. It *proves* and then recommends. It is composed, not of dreaming theorists, or of scientific abstractions, but of intelligent men of business habits, anxious to turn the discoveries of science to practical profitable uses; to increase the productive returns of the soil by the application of manures, suited to its character and capabilities; and to increase the stock, and to improve the breed, of our valuable domestic animals, by careful attention to those principles of breeding the value of which have been tested by results.

“In order to accomplish this in the most effectual manner, and to pursue and render available the knowledge and information gained by its several members, in the course of their respective experiments, the society has established a Quarterly Journal in which, men glad with useful suggestions, and recommendations, are accumulated the fruits of the labours of men who, from inclination, interest, or a sense of duty, have turned their minds to the important subject of agriculture; and who, from their actual position and advantages, have been able to test the merits of discoveries, which would have lain dormant if recommended *untried* to the *hard-working* farmer. In short, the object of the society is to show the farmer what it will be for his interest to adopt.”

The same paper again observes:—

“If any thing had been wanting to convince us of the sterling value of such associations as the present, it would have been furnished by the appearance of the Show-yard. Persons of all classes, from the owner of the princely estate to the hard-working cultivator of the soil, were to be found mingled together in friendly conversation, exchanging opinions and receiving and imparting information in their remarks and criticisms on the various stock and ingenious

implements of husbandry. This, of itself is a great good. The agricultural mind too often becomes apathetic or prejudiced, from moving too much in a circle, and from limited means of observation; and the maxims and modes of a narrow locality becomes regarded with as much veneration as ‘proofs of Holy Writ,’ and are handed down from sire to son as fundamental laws. But as each locality is distinguished by its excellent management in some departments, and noted for its deficiencies in others, nothing tends so much to diffuse a knowledge of the one and to correct the other, as a mingling together of men from various districts, engaged in a common pursuit, anxious for improvement, and with the living proofs before their eyes of what may be effected by care, skill, and science. In the present instance, there were men from Hampshire and Northumberland—from Cornwall to Kent, with sprinklings from Wales, Ireland, and Scotland mingling with the dense crowds of farmers from Somersetshire, Gloucestershire, Worcestershire, Wilts, Hereford, Dorset, Devon and their neighbouring counties; and such being the case, it is impossible to calculate the sources of knowledge which may have been opened, the fresh trains of thought originated, and the obstinate prejudices which may have been broken down by a day spent in the Royal Agricultural Society’s Show-yard.”

The object of the society is not directed chiefly to the improvement of live stock, but to the general improvement of the cultivation of the soil and crops—of implements—and the destruction of vermin injurious to the produce of agriculture. Indeed, there is scarcely any subject that has any influence on agriculture, that is not an object of their inquiry and attention. When we have Agricultural Societies in Canada that will follow the example of the English Society, we may expect they will produce much good; but while our Societies direct their chief attention and encouragement to the improvement of live cattle alone, we shall not expect much good to be effected by them.

MR. HOWITT’S SOUTH DOWN SHEEP.

On the 136th page of the present number, will be seen a correct likeness of one of Mr. Howitt’s South Down Ewes,—a breed of sheep we consider in every respect well adapted to this country.

Within our recollection, the Canadian farmers have been sadly in error in their mode of improving their stock of sheep—they have run into two extremes in point of wool and mutton. Not many years since, a full-breed Merino or Saxon Ram would bring from £12 to £15. As the improvement of the wool was almost the sole object of the admirers of these particular breeds, no regard was paid to improve them in points which so much characterize good feeders; the result was obvious. The mutton was found to be ill-flavoured, and the stock not adapted to our cold winters. At a more recent date, the Leicesters and Lincoln breed of sheep have been introduced, and are at present held in high estimation. The principal fault that can be attached to the spirited gentlemen who imported these

sheep, and who still continue to do so, is that they have not paid sufficient attention to the improvement of the wool, a point by no means of secondary consideration in a country like this, where every farmer should feel proud in attuning himself in his own domestic manufactured apparel. We speak from experience. Five years ago, the *Mania*, for these particular grades of sheep became so very general, that we were induced to pay an extravagant price for a flock of them, and the particular sheep which we most highly prized, turned out worthless for wool, as the carding machines in use in the country, could not manufacture it unless they cut into pieces with transverse knives fixed for the purpose. The wool in question measured 13 inches in length and was extremely coarse. We wish it to be understood, that we do not mean to condemn either of the breeds in question. They may all be justly prized, under certain restrictions, but the idea we wish to convey is this, that some regard should be paid by breeders to the best interests of the country, and in their crosses should improve their stock in those points which they may be deficient in, and by that means we would have a stock that would not only be suited to our circumstances, but worthy of eulogy.

In our last we mentioned some of the particular features of Mr. Howitt’s South Downs, and have endeavoured to bring them into the favourable notice of the Canadian public, in doing so we have been actuated by disinterested motives. To show our subscribers that we are not alone in our estimation of the South Downs, we beg to give them the following paragraph from a late English paper:—

“THE BRISTOL MEETING.—Mr. Jonas Webb’s sheep, as our readers saw by our last week’s paper, carried off all the first prizes at Bristol; in addition to this he let there in the show-yard, six sheep for the season, at £409. 10s., and refused 120 guineas for the hire of another; and it is gratifying to us to add, that he exhibited four out of the fine best shearlings present, one of which obtained the second prize of 15 sovereigns, and the other three were all commended by the judges; thus proving the fact, that four out of the best five sheep were exhibited by this gentleman. The sheep, which obtained the first prize of 30 sovereigns against sheep of any age, was let by Mr. Webb at 100 guineas.—*Cambridge Independent.*”

These prices are higher than is paid for any other description of sheep at present in England. One hundred guineas for the hire of a ram for one season, is a very high price indeed, considering that the stock of sheep in England are so generally improved and of the best quality.

MUSHROOMS.—The following simple and easy method is recommended for trying the quality of field mushrooms:—Take an onion, and strip the outer skin, and boil it with them. If it remains white, they are good; but if it becomes blue or black, there are certainly some dangerous ones among them.

CHANGE OF SEASONS.

The phenomena of the seasons may be divided into those which always recur every year, and those which are different in different years. We have in every year the same succession of longer and shorter days, with a summer and winter; while the summer of one year is of a higher temperature, and accompanied by finer days, than that of another. The unvarying phenomena can be explained by what we know of the sun (or earth's) motion; the varying phenomena belong to the science of meteorology, and depend upon atmospheric and other circumstances, with which we have little or no acquaintance. At any given moment the light and heat received from the sun, at any given place, depend upon the altitude of that body in two ways. In the first place, the lower the sun is, the greater the thickness of the portion of the atmosphere which its rays have to traverse before reaching the spot; the greater then is the light and heat which is lost in the passage. In the second place, the less the altitude of the sun, the less the actual quantity of light and heat which falls upon any given spot. The quantity of light and heat received when the sun is at two different altitudes, are as the signs of those altitudes. Thus the sign of 30° being $\frac{1}{2}$ and that of 90° being 1, the quantity of light which falls on a given spot when the sun is vertical, is double of that which falls when its altitude is 30° .

The average temperature being nearly the same in different years, the northern side of the earth must be receiving more than it parts with during a portion of the year, and parting with more than it receives during the remainder. The summer half of the year is that half during which it gains, on the whole more than it parts with; the surplus being that which is lost during the winter half. The day in which most heat is received is the longest day; but it is notorious that the hottest weather is generally sometime after the longest day. This is easily explained as follows:—The time of greatest heat is not that at which most heat is received, but that at which the quantity of heat is the greatest, namely, just before the daily receipts of heat begin to fall short of the daily expenditure. As long as the receipt exceeds the expenditure, heat is daily added to the hemisphere, and the weather becomes hotter. The same reason may be given for the greatest cold generally following the shortest day, with a considerable interval. All these circumstances however depend much on the atmospheric circumstances of the year. The preceding explanation does not serve for the tropical climates; the days and nights are here so nearly equal throughout the year, that seasons are caused more by the effect of the winds, (which are very regular, and depend mainly on the sun's position) than by the direct action of the sun's light and heat.—The seasons are not a summer and winter, so much as recurrences of wet and dry periods, two in each year.—*Penny Cyclopaedia.*

THE SEA.

The distribution of life in the modern ocean is one of the circumstances most important to know, and yet is one not so perfectly nor so extensively investigated as it deserves. Probably to each different sort of sediment on the sea-bed, and to each different depth below the surface, as well as to every degree of shelter or exposure, and every degree of temperature, belong specific influences on animal and vegetable life.

Below some moderate depth (moderate at least as compared with the thickness of the strata) life ceases in the ocean from deficient light and air, and augmented pressure; to a few hundreds of feet perhaps some particular forms may reach; but corals which form reefs cease to live at one hundred feet, and the abundance of other orders of zoophytes, of mollusca, and crustacea, within a few feet of the surface, appears to justify the belief that the deep bottoms of the dark sea, like excessive heights in the cold air, and the centres of dry deserts, are nearly devoid of life.

The proportion which exists between the sea and land has contributed to maintain the productive powers of the earth. If that proportion was materially changed, its productive powers would be changed also. The sea by means of the vapours continually rising from its surface, supplies the atmosphere with sufficient moisture for the support of organic life. Countries which do not partake of the benefits derived from this source, and which are not refreshed by rain or dew, are uninhabitable and destitute of all vegetation. Those parts of the earth which are farthest from the sea are much less fertile and populous, than those which, owing to their greater vicinity to it, receive a larger supply of moisture from this great source. The sea contributes also considerably to the advancement of civilization. At the first view it seems to constitute an inseparable obstacle to the communications between nations who inhabit countries widely apart from one another; but the ingenuity of man has converted the ocean into the most frequented high road on the globe.—The easy communication which is thus established between nations at great distances from one another, has perhaps more than any other circumstance, contributed to improve the condition of the human race. It is at least certain, that all those nations which have acquired any considerable degree of civilization, inhabit countries either contiguous to the sea or at no great distance from it.

The whole amount of saline matter contained in sea-water fluctuates between three and four per cent. The most abundant principle of this saline matter is common salt, of which it forms about two-thirds.—It has been observed that the Southern Ocean contain more salt than the Northern Ocean.

Temperature of the air incumbent on the Northern Atlantic Ocean, is ascertained to be near ten degrees warmer than that on Southern Atlantic Ocean at 45 degrees latitude, on an average of the annual mean of both oceans, at that latitude.

It is a well established fact that places near the sea have a more uniform climate, than those which are at a great distance from it, though in the same latitude. Inland places experience a much greater degree both of heat and cold than places on the coast, and the difference between these degrees of heat and of cold increases with the distance of the place from the sea.—This phenomenon has been variously explained. The explanation is now pretty clear, since it has been proved by observation that the temperature of the air over the sea is less subject to changes than, or rather does not undergo such great changes as that of the air which is over the land. But as the temperature of countries situated between the tropics, is not subject to so great changes as that of countries in the temperate zone, and these again are less affected by them than the frigid zone, so it is found to be the case on the sea also. Beginning with the smallest natural division of time,

the day, it is found that between the tropics the difference of temperature within twenty-four hours seldom exceeds two degrees of Fahrenheit, and rarely amounts to three degrees. The difference of temperature within the temperate zone on the continents of Asia and America, sometimes amount to about 140 degrees, between the extreme heat of summer and extreme cold of winter.—*Id.*

MORPETH GAOL.

It appears from the accounts submitted to the Magistrates at the recent Quarter Sessions of the Peace, that the prisoners in Morpeth Gaol are now able to maintain themselves without any expense to the county. Mr. Cousins, the present Governor, was the first to introduce prison labour, and the profits realized thereby during the past year amounts considerably above £200.—The articles manufactured are hearth-rugs and carpeting of worsted of various patterns; Indian-grass, office and passage matting, of various patterns; cocoa-nut fibre, Manila, and Indian-grass mats, of all sizes, the whole of which are sold at exceedingly moderate prices. As a proof of the great benefits derived by the prisoners themselves from the plan in operation at Morpeth, it may be stated that instances have occurred of young men being sent to prison, having served no apprenticeship, and being unable to follow any regular profession for a livelihood, and at the termination of their imprisonment the same individuals have left the prison with the means of earning, at a regular rate of wages, nearly £1 a week; so that the county, as well as the prisoners themselves, partake of the benefit of the prison labour, introduced and carried on so successfully by the present Governor.

How desirable it would be to introduce the same system of useful labour into our prisons in Canada. It is unreasonable to support and lodge at public expense, criminals that are able to work for their living.—Indeed it is rewarding instead of punishing individuals for their evil deeds. We feel convinced that obliging criminals to work while confined under sentence for their crimes, would be a very great check to the commission of crime.

ROKHARA OR CANDIAR CLOVER.—A specimen of this plant was exhibited last August, at a meeting of the Yorkshire Agricultural Society, by Mr. Stickney, who states, "that if allowed to flower, it becomes biennial; and that a single plant in rich soil, kept clear of weeds, will cover a circle of two yards in diameter, and attain the height of fifteen feet. It dies down in the autumn, but in the spring shoots out again from the crown. Horses and all kinds of cattle eat it freely, either in a green or dried state.—It may perhaps prove useful in alternate husbandry; as it produces a great weight of herbage; and has at the second cutting in September, attained the height of two feet.—*M. L. Express.*

PUNCTUALITY.—If you desire to enjoy life, avoid unpunctual people. They impede business and poison pleasure. Make it your own rule not only to be punctual, but a little before hand. Such a habit insures composure which is essential to happiness. For want of it many people live in a constant fever, and put all about them in a fever too.

According to Dr. Reid, any man that is destitute of public spirit, or an affection to the community to which he belongs, must be as great a monster as a man born with two heads.

"Benevolence, from its nature, composes the mind, warms the heart, enlivens the whole frame, and brightens every feature of the countenance. It may justly be said to be medicinal both to soul and body. We are bound to it by duty; we are invited to it by interest; and because both of these cords are often feeble, we have natural kind affections to aid them in their operation, and supply these defects, and these defections are joined with a manly pleasure in their exertion.

The natural benevolent affections furnish the most irresistible proof, that the Author of our nature intended that we should live in society, and do good to our fellow-men as we have opportunity; since this great and important part of the human constitution has a manifestation to society, and can have no exercise or use in a solitary state."

We may therefore lay it down as a principle that all benevolent affections are, in their nature agreeable; and that next to a good conscience, to which they are always friendly, and never can be adverse, they make the capital part of human happiness.

STABLE-DUNG—from horses fed with much corn, is highly fertilizing; very prompt, but transient, having some "Humus." The more it is constituted of corn, the more there will be of phosphate and carbonate of lime and fertilizing matter in it.

The weight of produce of an acre of land, may be 10 or it may be 50 or 70 tons: whence then comes this weight? The earthy product may be only one ton out of the fifty, the rest must be made up of the constituents of animal and vegetable substances in the shape of manures, most part of these are also the bases of air and water—what is added to land in the shape of manure, is small compared to weight taken from the land. It may therefore be inferred, that those manures are universally the best, which contain the greatest variety of the original matters, of which both animal and vegetable substances consist, and they must be the mixed composition of those matters passed through the intestines of men, or of those animals, which consume animal as well as vegetable food.—*Selected.*

AGRICULTURAL COLLEGE IN GLOUCESTERSHIRE.—The success of the Kent Agricultural College, has led to the formation of a similar institution at Shepscombe, near Painswick, Gloucestershire. The design is, for a moderate annual payment, to bring up youths of from 14 years of age to 18, giving them, besides a good education, instruction in the theory and practice of agriculture, on the best and most scientific principles. On the Continent, agriculture is taught as a science. In this country it has been allowed to depend on isolated instruction, while all other arts and sciences have had the advantage of collegiate courses of education. The farms attached to the Agricultural College at Shepscombe, include various descriptions of arable, pasture, and woodlands in the immediate vicinity, and extend over 900 acres.—*Salopian Journal.*

SAW-DUST MANURE.—The *Inverness Courier* states that Mr. Home Drummond, M. P., has for some years been in the practice of using saw-dust as a manure without

dung. He mixes it with composts, and lets it thus remain for three years—decomposition being hastened by adding one-tenth of lime to the saw-dust. If the ground be well turned over with the spade, this kind of compost will produce an excellent crop of turnips.

HOME DISTRICT AGRICULTURAL SOCIETY

UNDER THE PATRONAGE OF
His Excellency the Right Hon. Sir Charles Bagot, &c. &c.

PURSUANT TO PUBLIC NOTICE, The Officers of this Society met at the Court House, in the City of Toronto, on the 10th day of August, 1842, for the purpose of making the necessary arrangement for the Autumn Fair and Fat Cattle Show.

The President EDWARD W. THOMPSON, Esqr., Warden for the District, took the Chair, whereupon it was Resolved,—

That the Autumn Fair and Fat Cattle Show, be held at the City of Toronto, upon the piece of ground in front of the New Gaol and Court House, on WEDNESDAY, the twelfth day of October next, when the undermentioned Premiums are to be awarded for the following Stock:—

SHEEP.

Rams.	Best.	Second.	Third.
" One Shear,	£1. 10.	£1.	10s.
" Two Shear,	1. 10.	1.	10s.
" Aged,.....	1. 10.	1.	10s.
" Lamb,.....	0. 15.	10s.	5s.

EWES—PEN OF TWO.

Best	£1. 10.	Second	£1.	Third	10s.
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WE LAMBS—PEN OF TWO.

Best	15s.	Second	10s.	Third	5s.
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YOUNG HORSES.

HORSES UNDER THREE YEARS OLD.					
Best	£1. 10.	Second	£1.	Third	10s.

MARES UNDER THREE YEARS OLD.

Best	£1. 10.	Second	£1.	Third	10s.
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HORSE OR MARE UNDER TWO YEARS OLD.

Best	£1. 10.	Second	£1.	Third	10s.
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SPRING FOAL OR FILLY.

Best	£1. 0.	Second	15s.	Third	7s. 6.
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YOUNG CATTLE.

BULLS UNDER TWO YEARS OLD.					
Best	£1. 0.	Second	15s.	Third	10s.

HEIFERS UNDER TWO YEARS OLD.

Best	£1. 0.	Second	15s.	Third	10s.
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SPRING BULL CALF.

Best	£1. 0.	Second	15s.	Third	10s.
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SPRING HEIFER CALF.

Best	£1. 0.	Second	15s.	Third	10s.
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FAT CATTLE AND SHEEP.

PAIR OF FAT CATTLE REARED AND FED IN THE HOME DISTRICT.					
Best	£2. 0.	Second	£1. 10.	Third	£1.

PEN OF THREE FAT SHEEP FED IN THE HOME DISTRICT.

Best	£1. 10.	Second	£1.	Third	15s.
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SWINE.

BOARS.					
Best	£1. 10.	Second	£1.	Third	15s.

SOWS.

Best	£1. 10.	Second	£1.	Third	15s.
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Persons intending to become competitors for Premiums, are informed that Pens have been constructed for the purpose of confining the different animals, so as to prevent their straggling or being unnecessarily driven about; for the temporary use of which the competitors will be charged one shilling and three pence each.

A piece of ground adjoining the Show Yard will be appropriated for the exhibition of Stock for sale, and an Auctioneer will be in attendance to offer the same for disposal.

As an encouragement to those enterprising farmers who have already imported Stock into this Province, and as an inducement to others to follow their example, it has been resolved that if any animal entered for competition be deemed, by the Judges, worthy of the first Prize, and if the owner of the same prove to the satisfaction of the Judges, that such specimen of Stock has been imported from Great Britain since the last Autumn Fair, he shall upon producing certificates of the age and breed of the animal, be entitled to the thanks of the Society, and receive double the amount of the Premium which would be otherwise awarded.

No person shall be allowed to compete for any of the above Premiums, unless he shall have been a member of this Society for at least four months previous to the day of the Fair, or pay the sum of fifteen shillings upon entering his Stock.

The Society have entered into such arrangements in the selection and appointment of Judges, as to prevent any idea of partiality.

No person or persons other than the Officers of the Society, are to interfere with the Judges when in the discharge of their duties, by conversation or otherwise.

In order to prevent any idea of partiality in awarding the Prizes, each competitor for a Premium shall be furnished by the Secretary, (George D. Wells, Esqr.), with a numerical ticket, to be fastened to each animal entered for a Prize.

The Stock in the Show Yard will not until the Premiums are awarded, be known to the Judges by the name of the owner's or graziers, but solely by the tickets and numbers corresponding with the Secretary's list.

The Stock to be on the ground by ten o'clock in the morning, and remain until three, P. M. At 12 o'clock noon, the Judges will commence their duties of inspection and decision.

The names of the successful candidates—the Premiums they shall have received—and for what adjudged—will be publicly announced by the President, at two o'clock, P. M., from the front steps of the old Court House, upon Church Street, and afterwards published.

The Fat Cattle and Sheep must be offered for sale to the Butchers, before the amount of any Premium for the same shall have been paid to their owners.

The Secretary will be in attendance at the Office of Messrs. Wells & FitzGerald, 150 King Street, Toronto, at 10 o'clock, on the morning of the Exhibition, for the purpose of entering the names of, and issuing tickets to the various competitors. At 11 o'clock the Secretary's lists will be closed, after which hour no further entry can be made.

A Ploughing Match.

Instead of a Grain and Root Exhibition, the Society have ordered that a sum not exceeding fifteen pounds be appropriated for Prizes in a Ploughing Match, to take place on Thursday, the 13th day of October next; and that the following Gentlemen, Messrs. Torrence, George D. Wells, Gibb, D. Smith, and N. Davis, be a Committee to obtain a field of Green sward, and make the necessary arrangements, of which due notice will be given to the public.

N. B. The above Committee will meet at the Office of Messrs. Wells & FitzGerald, 150 King Street, upon Wednesday, the 7th day of September, at 11 o'clock, A. M.

Any person having a suitable Green-sward Field within five miles of the City, will have the goodness to give notice of the same to the Secretary, George D. Wells, Esqr., before the 7th day of September next.

GEORGE D. WELLS,
Secretary, H. D. A. S.

NOTICE OF AGRICULTURAL SHOWS

The Home-District Agricultural Show and Ploughing Match, will take place in this City, on Wednesday, the 12th of October next (see Advertisement on page 143). We are most anxious to see more of the middle class farmers interested in the improvement of their stock, and farming operations. Agricultural Societies are calculated to act as a stimulus on the surrounding farming community, and unless an active interest be felt in their movements, by those whose welfare they are intended to promote, the benefit derived will be comparatively limited to a few. We would suggest the propriety for the Committee of management, or Board of Directors, to be considerably augmented.—One, at least, should be appointed in each Concession of the populous townships adjoining this city; and their principal duty should be, to exert their influence in enlisting their neighbours in their ranks, without regard to party, nation, or tongue. Too little attention has been bestowed by the generality of farmers to their own interests. If they wish their calling to be respected by other classes, they must learn to respect it themselves. Farming, and farming interests have, in very many instances, become a reproachful by-word, whereas, it might and should be considered the most honourable, especially in this country, where the mass are depending upon it for subsistence; we would therefore sincerely hope, that the Agricultural Show and Ploughing Match alluded to, will be numerous and respectably attended, and that the farmers of the Home District will shake off their stupid lethargy; and, at the close of the Meeting, that matters and things connected with their best interests will be discussed; and above all, that they will not forget to pass an Address to our Provincial Legislature, now assembled at Kingston, on the important subject of protecting the produce of this country, from a ruinous foreign competition. This consideration alone, should be sufficient to induce our independent yeomanry to attend the Show.

The Home District contains upwards of 50,000 souls, nearly the whole of which are depending directly or indirectly on the produce of the soil for a livelihood, and certainly any suggestions emanating from a Society, representing such a respectable body, must carry with it a due proportion of weight.

We beg to state, that at the last Meeting of the above mentioned Society, they passed a resolution, that their proceedings for the future should be published in our Journal, and that they also subscribed very liberally for it, on the credit of the Society.

We have also to notice an Agricultural Show which will take place on the 14th of October next, in the village of Stratford.—The list of premiums appear very respectable, considering that it will be the first exhibition of the Society.

WOOD ENGRAVING—ENCOURAGE DOMESTIC GENIUS.

In the August and September numbers of THE CULTIVATOR, will be seen, a few excellent specimens of Wood Engraving, executed by Mr F C Lowe, late of London, England, who regularly served an apprenticeship to that art, with Mr. Jackson, the celebrated English Engraver, whose engravings are held in high repute, both in Europe and America. The highly finished style, which Mr. Howitt's Heifer, in our last number, and the South Down Ewe in our present one, are portrayed, must be strikingly visible to every connoisseur; and recalls to our mind, grateful acknowledgements to the individual who revived in our modern age the almost forgotten or obsolete art of Wood Engraving. We mean Mr. Bevvick, the distinguished Artist, to whom Mr. Jackson owes his great celebrity.

This flourishing Province should, at least, support one Wood Engraver.

As it was through our solicitation that Mr. Lowe was induced to establish himself in this City, we have no objection of having orders addressed to us, and such shall be promptly attended to.

SALE OF STOCK.—We beg to call the attention of that class of our readers, who may be desirous of improving their Stock, to the Advertisement of John Howitt, Esq., of Guelph, and of the Hon. Adam Fergusson, of the neighbourhood of Hamilton. We have already had occasion to speak in commendable terms of the former gentleman's Stock, both horned Cattle and Sheep, and we feel no scruples in reiterating what we have already said, that they are the best that have ever come under our notice in Canada West. At the period we called on the latter gentlemen, being in the month of April last, horned Cattle of every description were not in a state to show to advantage, however, we were prepossessed in their favour, and would consider the sale a fit opportunity for selecting choice specimens of the Pure bred Durhams.

CORRECTION.—In the third line from the bottom, in Mr. Severn's Advertisement on the 128th page, for "One Dollar each," read "Two Dollars each."

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TORONTO MARKETS:

For the Month ending 1st September, 1842.

	s.	d.	s.	d.
Flour Farmers', in barrels.....	20	6	a	23 9
Wheat..... per bushel	3	2	a	4 0
Barley..... do.....	1	8	a	2 4
Oats..... do.....	0	10	a	1 0
Pease..... do.....	2	0	a	2 6
Clover Seed..... do.....	25	0	a	30 0
Grass Seed (Timothy)..... do.....	5	0	a	5 6
Potatoes..... do.....	1	3	a	2 0
Oatmeal..... per barrel.....	17	6	a	21 3
Salt..... do.....	10	0	a	10 6
Pork..... per 100lbs.....	15	0	a	18 9
Beef..... do.....	15	0	a	20 0
Mutton and Veal (qr.)..... per lb.....	0	2	a	0 4
Butter..... do.....	9	10	a	1 0
Turkeys..... do.....	2	0	a	3 9
Chickens..... per couple.....	1	0	a	1 6
Eggs..... er dozen.....	5	0	a	0 6
Hay..... per ton.....	32	6	a	37 6
Straw..... do.....	25	0	a	30 0

SHORT HORNS.

THE Subscribers propose to sell by public Auction, in Dundas, (Flamboro' West), on Saturday, the 15th of October, being the day of the Gore District Agricultural Show, a valuable lot of

THOROUGH-BRED DURHAM BULLS.

The animals are healthy, gentle, and of fine symmetry, and correct Herd Book Pedigrees will be furnished. Their ages vary from fourteen months to four years. Breeders are reminded that this is a rare opportunity of obtaining

GENUINE STOCK.

Terms—Fair and liberal. Easy water conveyance from Dundas.

Sale to commence at 12 o'clock, noon.

JOHN HOWITT.

ADAM FERGUSSON.

N. B.—At the same place and on the same day, Mr. Howitt will expose a large and beautiful lot of RAM LAMBS, pure Leicester, South Downs and Cross. Also, six valuable Calves, one a yearling.

PUBLISHED MONTHLY.

WM. EVANS Editor, and
W. G. EDMUNDSON Proprietor.

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Subscriptions may commence either with the volume, or with the seventh number.—And the subscriptions in all cases to be sent free of postage.

We authorize all Post Masters, all Secretaries of Agricultural Societies, and all Newspaper Proprietors, throughout the Province to act as Agents.

In addition to the above, we kindly solicit country and village Merchants, and Farmers possessing influence in their respective circles to procure subscribers.

Orders will be received at J. Eastwood & Co.'s—Leslie & Brothers,—George Leslie's Seed Store,—and at the Star & Transcript Office.

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