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# AGRICULTURAL JOURNAL,

AND

## TRANSACTIONS

OF THE

### Lower Canada Agricultural Society.

Vol. 5

MONTREAL: JULY, 1852.

No. 7.

The Directors of the Lower Canada Agricultural Society have addressed Circulars to Presidents of Agricultural Societies, to the Clergy throughout the Country, and to various other parties, soliciting their aid and co-operation in promoting agricultural improvement. The Directors are solicitous to unite all friends of Canadian agriculture in this good work, and there is no doubt that, by a willing and hearty co-operation, our agriculture would very soon be in an improved and prosperous condition. When the opinions, suggestions, and advice of all parties are brought together, we may reasonably hope that it would be quite possible to adopt the very best measures for insuring the general improvement and prosperity of agriculture. Without a thorough acquaintance with the state of agriculture, and the views and opinions of agriculturists as to the most suitable means for its amelioration, it will not be possible to introduce the measures that will be most likely to succeed; but with correct information, and the opinions and advice of those who are most interested, there would not be any difficulty in determining upon the course which ought to be pursued. It is of some importance to Canada, whether the annual produce of her lands should remain stationary, or be doubled in quantity and value, which, we are convinced, it might be very easily, and even beyond this. The population of Canada would think it a most valuable gift, if they were to obtain a grant from England of four or five million pounds currency annually, and there cannot exist a doubt, but their annual products can be augmented this amount annually, if our agriculture was to

be improved to the extent it is quite capable of, and we only have reference in our estimate to the lands at present occupied. It is possible parties may doubt this statement, but we conceive it is perfectly capable of proof. At the present moment, some farms produce from double to three or four times the quantity that other farms do of the same extent, and where the soil is of equal natural quality.—What then is to prevent similar results from all, if the same system of husbandry and management is adopted? The Directors of the Lower Canada Agricultural Society do all in their power to induce agriculturists to unite cordially in promoting the general improvement of husbandry in Lower Canada, and it is not their fault if this union does not take place.

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**THE OX-EYED DAISY.**—It is lamentable to see how this weed is extending in Lower Canada within a few years past. Where not one was to be seen a few years ago, they have now taken complete possession of the land, and they scarcely leave room for any other plant. It is necessary that some means should be adopted to check them, or they will be a serious injury to farmers, and to the country generally. We doubt whether pulling them up will effectually destroy them, as some of the roots remain in the soil that will sprout out again. Tillage will check them, but when the land is laid down under grass again they appear in increased numbers. Any farmer who would discover certain means for destroying them, so that the land could be effectually cleared of them, would be entitled to a handsome reward. We

do not know a more pernicious weed. What is known as the Canadian Thistle is quite easily to be got rid of compared to this pest.

It is a strange circumstance, that in Montreal at present, oatmeal sells for a higher price than flour. The want of oatmeal mills is one cause we may assign for this, and a considerable demand for oats for the United States market is another. The climate and soil of Lower Canada is favorable for the production of oats, if sown in time in the spring, we believe more favorable than any other part of Canada or the United States, and no doubt, it would be a very profitable crop to cultivate while the cultivation of wheat is so uncertain. We frequently see inferior samples of oats in our markets, but this is in consequence of late sowing, that does not give time for it to mature perfectly, and from poor soil and defective mode of cultivation. We would strongly recommend more attention to the cultivation of oats, and erection of mills for manufacturing it into oatmeal. One cwt. of oatmeal may be had from 4 minots of good oats, that would weigh about 45 lbs. the minot, but at all events 5 minots of good oats would yield 112 lbs. of oatmeal. From 40 to 60 minots of oats might be raised from an acre of good land, well cultivated, and sown in time. This would pay better than the average crops of wheat we can raise, and it is a much more certain crop. Fowls properly kept would pay farmers. There is a constant demand for them, and for eggs, for the United States, and there is every probability that this demand will continue, and increase.

We have heard several complaints this spring of the very feeble state of young foals after birth, and of the death of very many of them. We have seen several of them that appeared not able to stand on their limbs. There is probably some cause for this, and we should be very glad to hear the opinions of competent parties on this subject, as the loss of foals in this way is a serious one to farmers. This defect may not be general, but there is no doubt of its existence to some extent.

In consequence of having elected the Presidents of the County Agricultural Societies, in Lower Canada, Honorary Members of the Lower Canada Agricultural Society, we applied to the Hon. A. N. Morin, Provincial Secretary, to be pleased to order, that we should be furnished with a list of the County Societies, the date of their organization and the names, and addresses of the several Presidents. We have received in reply, from the Honorable Provincial Secretary, a letter which we insert, accompanied by a list of the Agricultural Societies in Lower Canada, for which we beg to return our best thanks.— We were at a loss when having occasion to write to the Presidents of County Agricultural Societies, for their correct address, but we shall have no such difficulty in future.

We cannot forego this opportunity of stating, that, for a period of thirty years, we have had the honor of knowing the Hon. A. N. Morin, we have ever found him the steadfast friend of agriculture. We had an opportunity of seeing his Agricultural Library, which is beyond comparison, the best we have seen in Canada, comprising all the new works on agriculture, both in English and French. We mention this circumstance, in proof of the Honorable Gentleman's regard for agriculture. We can state further, that these books were not purchased to fill up a certain space in his Library, but for reading and study, in order that he might make the information, he would acquire from them, available for the benefit of his country. We hope the Hon. Gentleman will pardon us for introducing his name in this way, but we would not presume to do so on any other subject. The example of such a man is calculated to have a very beneficial influence on other parties to induce them to take an interest in our agriculture. It is by the study of the subject that we shall be able to ascertain the measures that are required to be introduced for its amelioration in Canada. However well disposed parties may be to agriculture, they cannot do much to promote its improvement and prosperity, unless they study the subject in all its branches and bearings, and understand them perfectly.

SECRETARY'S OFFICE,

Quebec, 15th June, 1852.

SIR,—I have the honor to enclose the statement requested in your letter of the 3d instant, relative to the Lower Canada Agricultural Societies, for publication in the Agricultural Journal for general information.

I have the honor to be, Sir,

Your most obedient Servant,

A. N. MORIN, *Secretary.*

Wm. Evans, Esq., Sec. and Treas.

L. C. Agricultural Society, Montreal.

LIST OF AGRICULTURAL SOCIETIES IN LOWER CANADA.

1852.

District.	Counties.	Date of Organization.	Paid as District Society for the year.	Presidents	Address.
Montreal,	Montreal,	Prior to 1845,	1845,	John Dods,	Côte Visitation, near
"	Two Mountains, No. 1,	"	1848,	A. E. Montmarquett,	Montreal.
"	Two Mountains, No. 2,	18th June, 1846,		<i>Dr. L. Dumouchel,</i>	Carillon.
"	Beauharnois,	Prior to 1845,	1847,		St. Benoit.
"	Huntingdon, No. 1,	Prior to 1845,	1846,	Julien Gregoire,	St. Cyprien,
"	Do. No. 2,	12th April, 1846,		Wm. Cleghorn,	St. Philippe.
"	Rouville, No. 1,	Prior to 1841,	1849,	Edward S. Goodnow,	Henryville.
"	" No. 2,	22d Feb., 1847,		<i>J. N. Poulin,</i>	St. Marie de Monnoir.
"	Chambly, No. 1,	29th June, 1844,	1850,	Charles Roy,	Blairfindie.
"	" No. 2,	10th Feb., 1847,		John Yule,	Chambly.
"	Missisquoi,	30th June, 1845,	1851,	Hon. P. H. Moore,	Philipsburg.
"	Terrebonne,	17th July, 1845,	1852,	Ed. Masson,	Terreboune.
"	Berthier,	2d Sept., 1845,		P. E. Dostaler,	Berthier.
"	Shefford,	23d Feb., 1846,		George Boright,	Farnham.
"	Vaudreuil,	"		J. A. Matheson,	Vaudreuil.
"	Verchères, No. 1,	27th Feb., 1846,		J. N. A. Archambeault,	Varennes.
"	" No. 2,	25th Sept., 1847,		A. Vandandaigue,	Belœil.
"	Richelieu,	22d Feb., 1848,		M. E. Durocher,	St. Charles.
"	" No. 2,	5th Feb., 1849,		A. Nelson,	St. Victoire, viâ Sorel.
"	Leinster,	1st Feb., 1851,		A. M. Archambault,	L'Assomption,
"	St. Hyacinthe,	26th Feb., 1851,		P. E. Leclere,	St. Hyacinthe.
Ottawa,	Ottawa,	27th Feb., 1851,		John Egan,	Aylmer.
Quebec,	Quebec,	Prior to 1845,	1846,	<i>E. J. Dellois,</i>	Quebec.
"	Bellechasse,	16th Feb., 1846,	1849,	O. C. Fortier,	St. Michel.
"	Dorchester, No. 1,	23d Feb., 1847,	1851,	Jean P. Proulx,	Ste. Marie Beauce.
"	Do. No. 2,	25th Feb., 1847,	1852,	C. Robertson,	Pointe Levi.
"	Saguenay,	21st Feb., 1850,		<i>R. E. Dubois, Père,</i>	Chicoutimi.
"	Megantic,	22d Feb., 1845,		J. R. Lambly,	Leeds.
"	Rimouski,	21st Feb., 1848,		Louis Bertrand,	Isle Verte.
"	L'Islet,	21st Feb., 1851,		O. C. Casgrain,	Ouellette.
Amouraska,			1845		
"			and		
Three Rivers	Drummond,	Prior to 1845,	1850,	Hon. Wm. Sheppard,	Drummondville.
"	St. Brooke, No. 1,	24th June, 1845,	1847,	<i>Benj. Pomroy,</i>	Compton.
"	" No. 2,	28th Feb., 1848,	1852,	Adolphus Aylmer,	Melbourne.
"	Standard,	30th June, 1845,	1846,	John McConnell,	Hatley.
"	Yamaska,	10th Feb., 1846,	1848,	Ignace Gill,	St. François du Lac.
"	Nicolet,	26th Feb., 1846,	1849,	Hon. J. Dionne,	St. Pierre les Becquets.
"	St. Maurice,	26th Feb., 1849,	1851,	P. B. Dumoulin,	Three Rivers.
"	Champlain,	9th Feb., 1852,		Fred. Filteau,	Batiscan.
Gaspé,	Gaspé, No. 1,	15th Sept., 1845,		J. F. DeBlois,	Percé.
"	" No. 2,	12th Feb., 1849,		John Eden,	Gaspé Basin.
"	Bonaventure, No. 1,	24th June, 1845,		J. G. Thompson,	New Carlisle.
"	" No. 2,	16th Feb., 1848,		<i>J. Meagher,</i>	Carleton.

Those names in *Italics* are the names of the Presidents last elected, but whose time of office is expired and for which counties new elections are required for this year.

## COW HOUSE.

The convenient arrangement of the cow-house is of importance both to the owner and to the cattle kept in it. Those built of stone or brick would be best for Canada, as the most desirable temperature can be maintained in them. They should be lofty, at least from eight to ten feet from the floor to the loft, in proportion to the size of the house, and the number of cattle kept together. The most convenient and economical arrangement is to have two rows of cows with their heads towards each other, though, perhaps, this is not the best arrangement. We copy a description of a cow house from the "North British Agriculturist," which gives a very good idea of what a building for this purpose should be:—We conceive it to be a very bad plan to keep too many milch cows or breeding stock in one house or enclosure, and whether many or few ample ventilation is necessary. Air and exercise are also necessary for the health of young stock and cows in calf, unless when the weather is very severe. Where a large number of cows are kept in cities for the supply of milk alone, they seldom keep the cows for more than a year or two, and their confinement is not of so much consequence, as these cows are not kept for breeding. In ordinary circumstances, however, we think that air and exercise are actually necessary for young and breeding stock, and that without both these, neither the cattle nor progeny can be preserved in a perfectly healthy condition.

## ON THE FORM OF A COW-HOUSE OR BYRE.

In erecting a cow-house, it should be so arranged that it should stand convenient for the rest of the steading, particularly as to the straw-barn and boiling-house. The exposure should be south or west; the situation should be airy, dry, and level; and the whole should be so arranged that the cardinal virtue, cleanliness, may be easily and fastidiously followed out.

The size of the house must be regulated according to the number of cows to be kept—here, however, there is a necessity strongly to impress the importance of not *overcrowding*. Overcrowding is the most common, and in its effects the most fatal mistake in dairy management. Where the numbers are to exceed twelve or sixteen, there should be erected additional cow-houses, corresponding to the numbers intended to be kept.

On most dairy farms the common practice is to have one row of cows in the cow-house, with their heads close up to the wall, and a passage behind them. A more convenient form of byre for twelve or sixteen cows, is to have the building so wide that it can commodiously hold two rows of cows—the stalls should be so arranged that the cows can be tied up with their heads to the walls, leaving a free passage in front of the cows for the purpose of feeding. The passages at the head should be so wide that a wheel-barrow can be pushed along with food.

The building should be one story high, lofty, so as readily to admit of a free circulation of air. The walls may be of stone and lime, or brick, as may be found most convenient. In England some prefer one of the sides to be formed of wood, so as to admit of its being partially taken down during summer for coolness. There should be three doors on one side, two for passages in front of the cows, and one for the cows to enter; opposite this latter door should be another for the purpose of removing the manure.—This gives three doors in front, and one at the back. The level of the doorways in front should be a little raised above the level of the outside. A byre, to hold twelve ordinary sized cows, should be made 34 feet long, with a breadth of 24 feet, giving a breadth of stall to each cow of four feet. The length of 34 feet will allow of two passages in front of the cows of four feet each, two stalls for food of two feet each, two of seven feet for standing-room for the cows, two gripes of two feet each, a passage between the gripes of four feet; three feet may, however, be sufficient.

If sixteen cows are to be kept, the breadth of the house must be increased. It will then be necessary to have a double roof with supports in the middle of the byre. These may be of iron to save room.—Double roofs are seldom to be met with in farm offices. We consider this a great error, and often arises from a mistaken economy in having narrow buildings. These are almost always inconvenient, and the additional mason and wright-work in most cases more than counterbalances the work, &c., required for a double roof. The height of the walls should not be less than eight or nine feet. The doors should be wide, four to four and a half feet.—Above the doors should be a window, framed so as to be easily opened and shut by a rope. The form of the floor is important. The fore-feet of the cow should be slightly, but only slightly, elevated above the hind feet; the difference should not exceed three inches. The whole floor should be flagged with flag-stones or flooring-bricks. The depth of the gripe should not exceed four inches. These directions are important to avoid abortion, and their necessity will be apparent to those who have studied the incipient causes of this malady. The slope of the gripe should be sufficient for allowing the urine running off to the outside; either to be collected in a tank or to be thrown upon the dung heap. The roof most commonly used is tile; a better covering is reeds, straw, or slate. There should be more than two openings in the roof, for the purpose of ventilation. The wall should be plastered in the inside. This is wholly overlooked in the erection of byres, and adds considerably to the difficulty of keeping the walls clean. The loss of a single cow annually, valued at £10, will more than meet the expense involved in the erection of a proper cow-house. Tenants will, in general, only obtain these, however, by an arrangement in their contract.

The whole cow-house, out and in, should be kept

scrupulously clean; the manure removed at least twice a-day. In Holland the cow-houses, and indeed the whole farm offices, are generally white-washed twice or thrice a-year. The floor of the passages in their cow-houses are kept as clean as a kitchen, washed and strewed with sand every morning. The attention paid to cleanliness in all departments of the dairy in Holland, is seldom equalled in this country, and does, in part, account for the superiority of the Dutch butter.

Where it is intended to have more than one byre, the partition walls should be carried up to the roof to prevent the air of one byre getting into another. This is the more necessary from the prevalence of *murrain* and *pleura*; these diseases have affected dairy stock much more than any other kind of cattle. There is difference of opinion as to these diseases being infectious, but we have seen the pigs, poultry, and cattle all affected with murrain at the same time that a flock of sheep were brought to the steading when laboring under this disease. Within eight days all were affected. We are not so certain of pleura; but we hold that wherever there is much fever accompanying a disease, that disease is more or less infectious. We know that most of practical men have no doubt as to the infectious nature of pleura. Professor Dick, however, holds, we believe, the opposite opinion.

Cow-houses should have a court conveniently attached for the purpose of airing the cows during winter, with a trough of water exposed to the sun. If this court cannot be erected conveniently, the cows should have access to a field or road for exercise, with a pond of water running if possible. Those cows in full milk should not be turned out during the depth of winter, the cold air, and particularly the cold water, diminishing the secretion of milk. There are town dairies where the cows are never allowed exercise; but in these cases they are usually only kept for a season. The legs of the cows soon become affected from the want of exercise, the knee joints generally becoming first diseased.

The quantity of air required to maintain the purity of the atmosphere of a byre, is greatly dependent on the nature of the food of the stock, the attention paid to cleanliness, the number of cows kept together, and the time they are allowed access to the open air. According to the experiments of Boussingault, a cow will vitiate 66 cubic feet of air in 24 hours, in the process of respiration. But the air is rendered not alone unfit for respiration by the carbonic acid exhaled, viz, 13 cubic feet; the gases from the ejecta are always considerable, particularly when the cow is kept on a watery and somewhat rich diet. The insensible perspiration also contaminates the air, moisture being always in excess where cows are kept. The litter does in a certain measure absorb gases from the ejecta, but the air of a byre cannot be kept pure without the proper apparatus for ventilation, and, at the same time, strict attention to cleanliness. The offensive smell of a byre in a morning should warn the owner of coming danger, if disease has not already made its appearance. It cannot be too often repeated that it is impossible to maintain the health of any animal living in an impure atmosphere. The ravages of pleura within the last eight years have been the means of ruining many small farmers and dairymen. Still, ventilation is not understood, or is it at least little regarded, either by practical men, or even by veterinary surgeons. The loss from disease will eventually lead to enquiry, and more atten-

tion will in time be paid to ventilation. In dairy districts the cows during summer are usually in the open fields, and only return to the byre at milking time. When the fields are sheltered by trees and high fences, cows do very well in the fields during night. During the heat of the day, they should be kept in the house and fed with cut food.

We have given quite enough to indicate, that a byre should have considerable conveniences, so that the comfort of the stock may be easily attended to.—Much does depend upon the management, but without a proper cow-house it is sheer folly to attempt to keep a dairy for the purpose of profit.

The quality of the produce either as butter or cheese, is greatly dependent on the health of the cows yielding the milk. Besides, the milk so readily absorbs every noxious gas, that cleanliness in the cow-house is equally indispensable for producing good milk, as cleanliness in the after management is for producing good butter or cheese.—*The North British Agriculturist.*

### REARING OF CALVES.

In regard to bringing up calves by suckling, there is no question it is the best way, provided the calf has free access to the cow which is supporting it; but I am doubtful of the superiority of suckling over feeding by hand, when the calf is only allowed to go to the cow at stated times. It saves the trouble of milking the cows and giving the milk to the calves; but a saving of trouble is of no importance compared to rearing young stock well. An objection to suckling exists, when one cow brings up two calves at a time, that the quantity of milk received by each calf is unknown, and the fastest sucker will have the larger share. True, they are both brought up; but they are brought up as well as when the quantity of milk consumed by them is known to be sufficient for their support? The milk becomes scarcer, too, as the calves get older, instead of becoming more plentiful. The objection to partial suckling is, that a cow suckling a calf does not allow milking afterwards with the hand in a kindly manner, as every cow prefers being sucked to being milked by the hand. — Unless, therefore, cows are kept for the purpose of suckling entirely, they become troublesome to milk with the hand after the calves are weaned.

At a month old, the male calves that are not intended to be kept for bulls are *castrated*. Though the operation is simple and safe, it should not be performed at a time when any inflammation affects the naval string, or symptoms of costiveness or dysentery are present. Supposing the calf to be in good health, the castration is performed in this manner.—An assistant places the calf upon its rump on the litter, and, sitting down himself, takes it between its outstretched limbs on the ground with its back at the shoulder against his breast. Then seizing a hind hock of the calf in each hand, he draws up a hind leg to each side of its body, and holds both in that position as firmly as he can. The operator causes the testicles keep the scrotum smooth and full with his left hand, and cuts with a sharp knife through all the integuments till the testicle is laid bare, which he seizes with the right hand, and pulls out as much of the spermatic cord as he can, and divides it with the knife. The same operation he performs on the other testicle, and the entire castration is accomplished in a minute or two. The calf is laid down on the litter, and he will feel stiff in the hind quarters

for a few days, and the scrotum may even swell.—Should the swelling become serious, fomentations of warm water should be frequently applied; and should suppuration ensue, the incisions in the scrotum should be opened out to give the matter vent; but the probability is, that the cuts will heal by the first intention, and give no further uneasiness to the calf than a stiffness in the hind quarters for a few days.

The practice some time ago was to *spay* the heifer calves—that is, to make an opening in the flank, through which the ovaries of the womb were extracted, in order to extinguish all desire for the bull; but the operation is falling into desuetude, most probably from the circumstances of every breed of cattle being now so much improved, that the heifers are generally considered fit for breeding, and are therefore kept *open*, as the phrase is, and disposed of at a better price than when fattened for the butcher.

When the air becomes mild as the season advances, and as the older calves attain the age of two months, they should be put into the court during the day; and, after some days' endurance to the air, should be sheltered under the shed at night, instead of being again put into the cribs. Sweet hay should be offered them in the racks; as well as a few slices of swedish turnips in the mangers in the shed. The change of food may cause costiveness in some calves, and looseness in others; but no harm will arise from either, if remedial measures are employed in time.—Large lumps of chalk to lick at will be serviceable in looseness. Should the weather prove wet, snowy, stormy or cold, they should be brought back to their cribs till the storm pass away.

At three or four months old, according to the supply of milk and the ready state of the grass to receive them, the calves should be *weaned* in the order of seniority, due regard being had to their individual strength. If a calf has been always strong and healthy, it may be the sooner weaned from milk when the grass is in a state to support it; but should it have ailed, or be naturally puny, it should still have good sweet milk as the best means to recruit its debility. When determined on weaning, calves should not be deprived of milk all at once; the quantity should be lessened daily, and given at longer intervals, so that it may be withdrawn insensibly. Calves on being stinted of milk preparatory to weaning, are supplied with a sufficient quantity of other food than milk, and it is given so as to entice them to take it. Fresh bundles of the most clovery portions of the hay, turnips fresh sliced, fresh carrots, pure water at will, a little pounded oil-cake, presented in turns when they used to get their milk, will be eaten for the sake of novelty; but if these, or any of them, are given anyhow to save trouble, and are left to be picked up in a court, or bare lea, the calves cannot but suffer from hunger, nor is it surprising they should make their hunger be loudly known. Thus treated, they will inevitably fall off in condition; and if they do this at the critical period of weaning, the greatest part of the ensuing summer will elapse ere they regain the condition, strength, and sleekness of coat, they had when on the milk. A small sheltered paddock, in good heart, near the steading, is an excellent place for weaning calves, before turning them out to a pasture field; but unless it afford a full bite of grass, to support them as the milk is taken from them, they will be as much injured in it as in a poor grass field.

When *bull* calves are brought up, they should be early calved, and receive as much new milk as they

can drink, and should not be weaned till the grass is fully ready to support them. The object of this high keeping is not to fatten them, though it may do that too, but to give strength to their *bones*, and vigour to their *constitution*, these being much enhanced by the quality and quantity of food at the earliest period of existence. The impulse thus given in calfhood, is evinced by bulls in the vigour of succeeding life, and it is sure to lay the foundation of a long and useful service. Even with ordinary calves, if they are pushed forward thinfly or rs monti of their existence, the probability is they will evade every disease incident to that age.

I should mention that, when they receive milk in the court, some will be apt to plague those which are getting theirs, by poking their heads into the same pail, by boxing, or suckling the ears, &c. To prevent these annoyances, the dairy-maid should be provided with a supple cane or switch, and tap the ears of every one disposed to be troublesome. Discipline, while it does no harm to those subjected to it, impresses on others the necessity of obedience. We err if we consider animals, because they are dumb and young, incapable of instruction of any kind. On the contrary, they are very susceptible of it, and its influence is evinced by habitual forbearance from wrong.

Strathaven in Scotland has long been famed for rearing good *veal* for the Glasgow and Edinburgh market. The dairy farmers there retain the quey calves for maintaining the number of cows, while they feed the male calves for veal. Their plan is simple, and may be followed anywhere. Milk only is given to the calves, and very seldom with any admixture, and they are not to suck the cows. Some give milk, but sparingly at first, to whet the appetite, and prevent surfeit. The youngest calves get the first drawn milk, or *forebroads*, as it is termed, and the older the *afterings*, even of two or three cows, being the richest portion of the milk. After being three or four weeks old, they get abundance of milk twice a-day. They get plenty of dry litter, fresh air, moderate warmth, and are kept nearly in the dark to check sportiveness. They are not bled during the time they are fed, and a lump of chalk is placed within their reach. They are fed from four to six weeks, when they fetch from £3 to £4 a-piece; and it is found more profitable to fatten the larger number of calves for that time, to succeed each other, of from twenty-five pound to thirty pound per quarter, than to force a fewer number beyond the state of marketable veal.

The plan followed of fattening calves, for thirty miles round London, is very different. There, the cows are made to suckle the calves three times a-day for the first three or four days, and afterwards twice a-day. If the cow is full of milk, two calves are put to her; and, at any rate, one calf is put on after another is fattened off. In this way the veal farmers keep from 6 to 12 cows each, and convert their whole milk into veal. The calves are placed in boarded boxes, 4 feet high, and just large enough inside for a calf to turn. The floor is also boarded; the boards having holes, are raised from the ground, and littered with clean white straw. A lump of chalk is placed within reach of each calf. The calf is fed for 10 weeks, when it will attain about 35 lb. per quarter or more, and is then warranted *prime* veal. A calf, however, of 9 or 10 stone, will fetch a shilling or two a-stone more than one of 17 or 18 stones. Notwithstanding this, the English veal-farmers believe, contrary to those of Strathaven, that a calf grows

and fattens faster after it is ten weeks old, than before, and requires less milk to carry it on; and the profit is greater, inasmuch as one large calf incurs only one prime cost, one risk of life, and one commission; whereas two small calves incur twice the cost and risk of life. The butchers bleed the calves repeatedly, before slaughtering them; and they judge of the color of the flesh by looking at the inside of the mouth and the white of the eyes. "The profit of fattening calves," observes Mr. Main, may be judged of by an example in figures, which I have oft experienced. A calf is suckled for 10 weeks, and weighs from 10 to 11 stones imperial, *sinking the offal*, as it is called in London. The calf fetches £5 at market, from which deducting 30s. which it might have been sold for when a week old, and 5s. salesman's commission, leaves a profit of £3 5s. or 6s. 6d. per week for the cow's milk. Now, deducting 2s. 6d. per week for the keep of the cow, the bare profit left is only 4s. per week. But it must be remembered, that a good cow will fatten off two calves while she is in milk—some I have had, two and a half; but this can be but rarely accounted on. Still, taking one cow with another, kept for the purpose of suckling, her annual returns will be nearly what it is commonly estimated at, namely £12. To insure this, or any other sum, as clear profit, depends entirely on the attention bestowed on the cows and calves. Some cows are odd-tempered, letting down their milk only to their own calves, and withholding it from those they are made to foster. This, if not corrected, will injure both cow and calf; the one will be starved, and the other will soon become dry.—*Stephens' Book of the Farm.*

#### THE CULTIVATION OF DUPLICATE CROPS ON THE SAME LAND.

Of the new propositions which are made to the agricultural public, that of growing more crops on the same area of land is amongst the foremost. We do not mean growing a larger produce of the same kind of plants, but the production of either several kinds of plants in one year, in succession, or at least the combining of them, so as to interfere as little as possible with each other, and by this means yield a much larger proportion of food from the same soil.

Now, theoretically, this is decidedly correct. There are many plants which have a large leaf development, and derive a large proportion of their sustenance from the air and from the water. There are others which have a small leaf development, and hence derive a large amount of nutriment from the soil. The same may be said of roots. There are some which send down wedge-like tap roots, and derive a large portion of their food from the lowest stratum of soil—almost from the subsoil. There are others which are continually spreading their small filaments sideways, in all directions. Now, these may be combined; for they do not much interfere with each other mechanically. So, chemically, there are some plants which feed largely on a certain class of mineral constituents, and but slightly on others, and *vice versa*; while some feed on the organic and some on the inorganic, the one in larger proportions than the other. Now, if these could be so combined together, on the same soil, it is perfectly feasible to suppose that a much larger amount of food per acre, might be obtained of two kinds of produce than one. Hence, some parties have mixed seeds. They have sown rye and wheat together,

called maslin; and they have obtained a larger produce per acre, in bushels, than they could possibly do by either the one or the other. They sow two or three kinds of turnip seed at once, and as they go on in the process of turnip hoeing, they throw out the least promising looking plants, and they find that nature has, for the soil and season those individual plants, or that kind of turnip plant which is best adapted for the one and the other, and hence have a larger crop.

But there is another mode in which crops may be combined; they mature at different periods. Hence, artificial grasses, which are useful in their second year, are sown with barley which ripens in the first, and is, consequently, out of the way before the second crop is required, and instead of wasting two years over producing it the land is going on. But there is manifestly a limit to this mode of farming. We well remember a theorist, who, seeing the fertility of good grass land, determined to try his hand at growing beans on grass land without ploughing up. He commenced by driving a deep cut in the grass, a little wedge-shaped, and in this he put a set of rows of beans. His plan was, to have wide rows of beans growing with grass, the latter to be hand-mown, and so eaten while the former were ripening. He calculated that as the beans did not occupy above one fortieth part of the absolute surface—at least in the early stages of their growth—the loss of grass would be scarcely perceptible; while, if he got some twenty or thirty bushels of beans per acre, as he fancied he easily could do on fresh grass land, he imagined he had found out the way to get rich. And he did sow; he mowed the grass; he watched the beans; but they grew up to a certain period, some five or six inches high, and withered away; and all his plan of combination faded away.

We have seen, in gardens, beans, and even cabbages, grown with potatoes, on the same land; nor could it be said that, in ground so highly manured as garden ground generally is, there can be any want of crop—any over-cropping of the soil; and if on a farm, a greater weight of nutritious green food could be grown, by adopting any of the schemes which are propounded, there is no doubt but it must considerably benefit the farmer. But how far can it be done? Great success is, sometimes, reported to have attended the cropping of a dry, blowing sand, curing its fallow time, with mustard and rape succeeding it. Instead of the open fallows, in the south, all the year a bastard fallow is sometimes made, and winter tares sown, to cart off, and eat on the land green with sheep, so manuring and consolidating a soil, which is afterwards broken up, and mellowed by the plough, the drag and the harrow. A crop of rye is sometimes taken off between the wheat and the turnips. We recently met with a gentleman, who is a theoretical chemist, and who makes agricultural chemistry his peculiar study, who very strongly urged upon the agriculturists, so far north as Yorkshire, to insert a green crop of some description between the wheat and the turnips as a rule. He argued that, the wheat being off, say, in September, there was ample time for stubble-turnips, rye, Italian rye-grass, winter-tares, or some such green food for stock; and that, all this food being absolute gain to the farmer, on which no more rent, rates, tithes, and very little labor, were chargeable, it must be an advantage to the farmer. But this is not so. The climate is too cold and backward for stubble-turnips. The lighter soils, on which this would be applicable, if carried out, would be so opened by the mechanical influence of



the roots of the plants, that the succeeding crop of turnips would never be obtained, at least in a draughty season, while, if the roots were attempted to be cleared off, the working of the soil then would be destructive. If any could be introduced, it might be the rye-grass. There is great command over this, by the application of liquid manure. Sown on a clover stubble in the spring, when the young wheat plant is growing, it would be a pasture early next spring. A plough, or share, or skim before it would easily get rid of this, and form a bed of decaying matter below the soil, beneficial rather than injurious to the turnips. But, as this could only apply to deep loams, and where there were no weeds, it could not be of very extensive application.

There are circumstances easily conceivable when it may be desirable to grow as many crops as possible on the same surface of land. Thus, the demands of a town increase the value of products, which will not bear a very long transit, and hence, great rents are paid for convenience. It is called accommodation land, and we know parties who find it economical to pay ten pounds per acre, for land close to their dwelling. Now, on this land, it is clear every effort should be made to produce the greatest amount of crops possible. On land situated differently it is a simple question of economy. The gross producing of say ten pounds worth of produce per acre—over seven pounds per acre is not all profit—and it is possible it may be more profitable on some farm land to allow it to lie a winter, and even an occasional summer fallow, in preference to growing an intermediate crop. Nay, more, on a very great many soils in the country we are convinced that, if instead of a four-course shift—a really exhausting course when attempted to be self-supporting on inferior soils—a five-course were adopted, and after the mid-summer of the second year of seeds, when the clovers usually begin to yield but little food, we are certain that great advantage would accrue to the farmer by a bastard fallow. We had rather run the chance of a little lightness of the soil arising from it, and all its probable damage to the wheat or the crop which might be sown, than contend with the ruinous effect of the weeds upon it, which, in low qualities of soil, ever insinuate themselves in the wheat crop at the close.

Mr. John Sillet, of Kelsale, near Saxmundham, in Suffolk, has recently called attention, in a pamphlet on fork and spade husbandry, to which we shall more particularly hereafter allude, to a mode of growing two, three, and even four crops on the same piece of land in twelve months; and, while there are many valuable hints, and suggestions, while we are quite certain, that much of his process might be adopted by small suburban farmers, we are not prepared to advocate its full adoption on any inland farm, unless there were special circumstances of soil or situation, especially demand for the crops, or peculiar favorable position for obtaining cheap manure.

We will first give an idea of the area and produce of the land. Two acres were purchased at £118 per acre, a proof of two circumstances—viz., convenience and good quality of the land. He breaks up this pasture, and consequently avails himself of the manure of his predecessors, accumulated in centuries, and which he paid for in the £236; in other words he commenced cropping out of capital. In proof of its being in a convenient position and thriving neighbourhood, where there was a population and a market, he had £168 per acre, bid for it, and could since sell it for three times that sum. So

much for his land. Now for his produce in 1847. He made as follows:—

Produce of two cows, after family's consumption, fattening one calf and weaning one .. .. .	£	s.	d.
One calf fatted weighed nine stone, at 8s. 2d. per stone of 14 lbs. ..	£3	12	9
Skin, head, feet, &c. .. .. .	0	16	0
One-year old heifer .. .. .	4	8	6
One fat pig of eight stones at 8 per stone	3	4	0
Twenty sacks of potatoes at 8s. ..	8	0	0
Twelve bushels early do, at 5s. ..	3	0	0
Seven thousand cabbages, at 1s. 4d. ..	14	11	8
Twelve pecks of onions at 1s. ..	0	12	0
Various seeds, vegetables, &c. ..	5	15	0
	74	3	10

Deduct rent for land, at 5 per cent. on purchase money (including expenses) £250 .. .. .	12	10	0
Rent for house .. .. .	8	0	0
Rates, taxes, &c. .. .. .	2	12	0
	23	2	0

What he calls "nett profit for the year" 51 1 10  
Now, what we have to call attention to, is the gross rather than the "nett profit," for it is clear it is no such thing as nett profit. There are no deductions for seed, labor, or interest of capital; and the produce of the cows is not given clearly, for it is very small produce in itself; only the family are supplied, and the extent of this supply we have no means of knowing. We know two cows are, in favorable situations, capable of making £60 per annum gross, if they are successful, and of a right kind; but the question of the greatest consequence in this matter is, how is he able to keep two cows and a yearling out of ten acres of newly taken out grass land.

This brings us to his plan of growing four crops of the same piece of land in the same year, consisting of cabbages, wheat, potatoes, and Swede turnips. Early cabbage seed is sown on the 22nd July in beds previously manured and dug. These are planted out in rows the first week in October, two feet apart. The interstices are sown with wheat the last week in October; Spaldings prolific being the kind selected. In the middle of February early potatoes are dibbled between the cabbages which we ought to have said are transplanted fifteen inches apart. In May, he cuts off the blades of the wheat close to the stem, and gives them to the cows. This gives food in considerable quantities to the animals, air and space to the potatoes, and prevents the lodging of the wheat.

The cabbages are fit for use, and cleared off in May, and in June, the potatoes in Suffolk are ripe and fit to take up for sale, being ash-leaved kidneys. He then digs the rows between the wheat, out of which the cabbages and potatoes have been taken, and plants out, in the last week in June, rows of Swedish turnips, which make the fourth crop. Early, in August, the wheat is fit for cutting, and then the Swedes have the full benefit of the sun and air. He does not mention digging, nor forking the spaces from which the wheat has come out, but we doubt not this is done; and thus in twelve months, by combination of crops, ripe at different stages, and by transplantation of those capable of it, four crops, and these in a fine climate, and a rich, and fresh soil, may doubtless be obtained. The labor here is, however, it must be confessed, very considerable, and he has not taken

proper credit for it in his balance sheet, but we have no doubt there are situations and circumstances where it will pay.

He has also similar combinations of other crops, as potatoes, beans, and turnips; mangold and beans; cattle-cabbages, and beans; so far as he shows skill in combination, in producing great bulks of produce from a small area, and above all selecting the best possible soil for the success of his experiment, we cannot but give him credit.—*Gardeners' and Farmers' Journal*.

### LECTURE ON AGRICULTURAL EDUCATION.

In offering some additional remarks on the subject of this lecture, the present depressed state of the agricultural community furnishes me with another argument in favor of the fostering care which should be accorded, and the support which should be freely given, to the extension and stability of agricultural education.

All of us are aware of the fact that, with the utmost efforts which the farmer is at present able to make, he finds it most difficult—indeed, in many cases impossible—to meet his numerous and pressing demands; and at the same time maintain that position in society which it should be the pride, as it certainly would be the interest, of the other classes in the community to place him. Viewing the matter then in this light, and altogether apart from party politics, I certainly do think that it becomes a matter of grave importance to the public generally, how the condition of the farmer may be permanently improved. I say *permanently*: for though exterior causes may exist for a time in a kingdom or state, which may render abortive, so far as profit is concerned, the most judicious management, yet these, in a free country like ours, can only be temporary; but the instilling of correct principles of agricultural practice into the minds of the rising generation of farmers will be lasting and will descend from father to son; each generation adding its additional *quantum* of acquired knowledge to the succeeding one; and thus the happy result contemplated be in the end acquired.

Successful as the working of the agricultural school system in Ireland has been throughout the last few years, yet it is not alone upon the prosperous issue of its agency here that I would ground my argument in reference to its general usefulness, as ample testimony on this point is afforded by the good effects of its operation over almost the entire of continental Europe.

The celebrated school of Hofwyl, near Berne, in Switzerland, founded by the benevolent De Fellenberg, and embracing in its regulations the same element of industrial training as ours do, has contributed most essentially to the well-being not only of Switzerland, but of other countries. So far back as 1832, it appears, that "not less than one hundred village teachers were in training at this institution. These, as De Fellenberg appropriately termed them, were the hope of their country; and well might he say so, as they would communicate the industrial education which they were there imbibing to thousands of pupils throughout the different cantons."

At Hohenheim, near Stuttgart, in Wurtemberg, there is a similar institution, which was founded by Schwartz, and afterwards endowed by the king with a royal seat and extensive buildings. The land attached to it embraces an area of 960 acres, on which an exemplification of different branches of husbandry is af-

forded to its pupils. This establishment is said to have exercised a highly advantageous influence upon the agricultural condition of the most of Wurtemberg.

Prussia has an agricultural college at Moeglin, near Frankfort-on-the-Oder, with 1,200 acres of land attached, and has for its president a son of the distinguished Von Thaer. Here, also, both the principles and practice of different branches of husbandry are afforded to the pupils.

Russia has an agricultural college under the immediate patronage of the Emperor; and agricultural schools, for combining the science with the practice of agriculture, are in active operation throughout the different parts of the country.

France has an agricultural college at Greignon, with an extent of land connected with it comprising 1,100 acres. Here, also, the pupils are taught both the science and practice of husbandry.

It seems unnecessary to refer particularly to any other agricultural schools. Suffice it to say, that in 1850 the number of these establishments, scattered over continental Europe, amounted to about 280. Of this number there were 75 in France, 66 in Russia, 35 in Bavaria, 32 in Austria, 32 in Prussia, 9 in Belgium, 7 in Wurtemberg, 5 in Saxony, 5 in Schleswig-Holstein, 2 in Brunswick, and the remainder, for the most, in the duchies and principalities.

Thus we find that agricultural education is now afforded to the tillers of the soil in some of the most powerful, as well as in some of the most enlightened countries in the world. Why should we, therefore, whose interests are so much bound up with the progress or retrogression of a knowledge of husbandry, hesitate to pursue that course which appears to be the most efficient in dispelling the clouds of ignorance and diffusing the light of knowledge, in reference to this all-important art? The testimony of the agricultural inspector, as recorded in his reports, of the very successful working of all those schools which have been properly organized, and which have had sufficient time to develop their capabilities, prove, to a demonstration, the usefulness of the system. It is not to be expected that in agriculture, as in some of the other divisions of labor, an instantaneously successful result can be obtained. Years of toilsome labor must sometimes be expended on exhausted or unimproved farms ere they can be brought to a remunerative state of productiveness. This fact, however, which is as clear as noon-day to every one acquainted with the cultivation of land, has been sometimes overlooked by the opponents of the system: and what was, in fact, meritorious, under the circumstances, actually condemned. I well remember that at the time when the system was first introduced, those who took an active part in its development were met by the sneers and jibes of even the very persons whom it was intended more especially to benefit. But in due time, the success attendant upon the course of cropping and general management pursued by the agricultural teachers, had the effect of gradually stemming the current of reproach which was levelled at the system; and we have now the satisfaction of looking forward, with no small degree of confidence, to the no distant day, when the example of those teachers will be generally copied, and the blessings resulting from their labors very widely, if not universally, felt.

Few, who have given the subject of education that serious consideration which its importance demands will, I should think, object to a mode of imparting it amongst the rising generation of farmers, which has

for its principal objects the inculcation of correct principles of husbandry, the infusion of early habits of industry, the proper development of the physical energies, and strict moral rectitude of conduct. It should be remembered that the youth of our present day will, in some ten or fifteen years hence, become the bones and sinews of the country; and that just in proportion to the kind and amount of education now afforded to them, will the advancement of the community, in social improvement and national prosperity, depend.

I have now, gentlemen, stated my views in reference to the subject proposed to be considered, and I should hope that you will give them that careful consideration which the importance of the matter demands. I am the more anxious that you should, inasmuch as, through your instrumentality—even in the capacity of literary teachers—agricultural progress may be very greatly promoted. Few understand better than I do the position in which the intelligent and well-conducted teacher stands in the estimation of the parents of the children committed to his care, as I was a teacher myself. Therefore, I would say, that the teacher can exercise a very important influence over the inhabitants of the neighbourhood in which he is placed, both by affording them good advice and by setting them a proper example. And should he be able, by his labors in this way, to improve their social condition and with it their domestic comforts, he will enjoy, at least, the true gratification, not only of having discharged his duties faithfully to the commissioners, who have provided him with a suitable agricultural education, but also of having been the means of alleviating the misery and wretchedness of his fellow-countrymen. It may be the case that some of you may yet be employed in the capacity of ordinary agricultural teachers; others of you may aspire to a higher grade, and receive a more practical training; others of you, again, though still literary teachers, may find it advantageous to rent a few acres of land for the benefit of your respective families; and still further, the time may not be far distant when the landed proprietors will find it their interest to attach a few acres of land to the schools scattered over their estates, as example farms; in any of which cases the course of instruction in agricultural matters, which you are about to receive, will prove highly serviceable, and the reward for your labors will be of a more substantial character than that before referred to; it will consist, at least, in part, of the produce of your little farms, which will render you less dependant upon others for the means of subsistence, and, consequently, make you more happy and contented.

I would now conclude by merely saying, that by carrying out, in Ireland, with efficiency and zeal, a proper system of agricultural education—such as that which is at present being organized—I am thoroughly convinced that her best interests will be permanently promoted.

#### CULTIVATION OF TURNIPS.

We have, in our papers on potatoes, mangolds, and fallows, said so much upon the preparation of the soil as to render any observations on that head superfluous now: we therefore take the land as being properly fallowed and made quite ready to receive the seed, and for *Swedish Turnips* we take it to be neatly ridged at twenty-five inches apart, and manured with about fourteen two-horse loads of good fold-

yard manure, all rolled down ready for drilling. We therefore (in this paper) commence with drilling Swedes. We invariably drill in with the seed some artificial manure or compost; the cheapest, and that most commonly used by us, is about two bushels of decomposed night-soil mixed with twelve bushels of loamy soil, and about forty bushels of ashes burnt from twitch, roots, sods, turf, or other available vegetable matters that we can convert into ashes; these we drill in with the seed, and the rapidity with which this compost forces the young turnip plant "out of harm's way" is both surprising and satisfactory. The night-soil is best mixed with loam a year or more previous to its being required for use: we aid the mixture by adding strong manure from the piggeries, the dove-cot, and cess-pools, &c., &c. We next prefer a mixture made from dissolved bones: the rate of four bushels per acre, and fifty bushels of ashes. Our next application as to preference is the application of about two-and-a-half cwt. of guano with the above quantity of ashes; this application we drill in with double spouts or coulters. Guano must not come into contact with the seed in the act of germinating; if it does, it is sure to die! We have also used bone-dust, rape-cake, British guano (well made), nitrate of soda, urate, &c., &c., and with good effect. Almost any fertilizing matter thus applied will produce most satisfactory results. We do not know of any plan for preventing the ravages of the turnip-fly so good, or so certain in its success, as to drill in with the seed some fertilizing substance, taking great care that it be not too strong, rancid, or acrid, in its nature; germinating seeds cannot withstand such contact, but if the application is judiciously made, the growth of the plant is not only greatly promoted, but the vegetation of the seed itself is quickened, and possibly the plant also may, by these kinds of applications, be rendered distasteful to these little voracious insects, and in this way prevent injury. The quantities we drill in is from four to five pounds of turnip seed, and from forty-five to seventy bushels of compost and ashes per acre.

**COMMON TURNIPS.**—The common turnip we prefer putting in at the latter end of June, and "upon the flat," not upon ridges; common turnips sown on ridges grow much too fast, and become very large and "fuzzy," or dry and pithy. In late sowings we should not object sowing them upon ridges provided they can be consumed before the winter's frosts attack them: they are, however, much the best upon level, well prepared soil; they can bury themselves deeply in the soil, and being less exposed keep their quality much better, and are much more easily preserved for winter use. We drill about four pounds of seed to the acre at twelve-inch intervals, and about sixty bushels of compost and ashes; the land is rolled down prior to drilling, and in this case, as also in drilling swedes, we leave the drills open provided the weather is wet and genial, but if it is dry and unpromising we again roll all down closely.

**SUBSEQUENT MANAGEMENT.**—This will consist in repeated horse-hoings and harrowings done to the swedes, and recommended for mangolds, and in hand-hoings, weeding, and singling, done to both swedes and common turnips. We prefer setting out the turnips with an eleven-inch hoe. In ridge work we would refer our readers to our description of these hoeings, &c., given in our paper on mangolds. In setting out our common turnips we use a twelve-inch hoe on account of our rows being drilled at nar-

row intervals. We first broad-hoe them as soon as they are fairly up, that is, to hoe the land without meddling with the plants. We do this not only with a view to cleanliness, but to promote the more rapid growth of the plants. In a few days we proceed to set them out. The hoers take one row each, and bending down and taking short hold of the hoe, striko or chop as regularly as possible along the row, leaving if possible, but one good plant between each stroke. Each hoer is followed by a lad if the plants are large enough for singling, to weed and single them out; or it may be desirable to wait a few days to allow time for large growth, and the disturbed plant to obtain a more secure hold, or many will be drawn up inadvertently by the lads.—Turnips should be repeatedly hoed; nothing tends more to enhance their growth. Those on the ridges may be horse-hoed or ridge-harrowed, so long as a horse can get down the rows without doing serious injury to the plants; and those on the level or bat will amply repay for hoeing, so long as it is possible to draw a hoe amongst them. We are careful not to go amongst them in wet or unfavorable weather; to avoid this it will be requisite to have plenty of help at hand, and at every suitable time to make use of it with all the hands that can be spared. Should any thin places occur in the crop, it is far preferable to fill them up with rape or cabbage than to transplant turnips.

On ridges where much manure is used, a partial vacuum will occasionally be found by the decay of the manure. The roll in this case should again be passed over them, and no heed or fear need arise respecting the plants if the time of rolling is properly chosen, which should be just immediately before setting out, or when they are about four inches in height.—The subsoil and surface-soil being thus brought more closely into contact, moisture is drawn from the soil, and the plants improve faster than before. This we have often proved in dry weather, and it is good practice on all lands heavily manured. On all rich loams it is best to wait till the middle of June before sowing swedes, as they are very liable to catch mildew, but on all meadow soils the sowing may take place from the middle of May to the third week in June. For common turnips from fourteen to twenty-one days later will be about the proper time of sowing for such soils respectively. We frequently roll our common turnips if the land is highly manured and the weather is dry; consolidation of the loose soil arising from fallowing is necessary, and no injury is done to the turnip plant, which will certainly grow the faster for it in such weather. We have no hesitation in recommending the rolling of the turnip crop in dry seasons, and the best stage in their growth for this rolling is when the plants are in full broad leaf, and before setting out. The steeping of seed is recommended, and in particularly obnoxious mixtures, with the view of making the plant unpalatable to the fly. We cannot think this plan of much service, but combined with rancid manures, it possibly may be of some avail. The great, and as we think the only, safe remedy is in obtaining a perfect tilth, giving it a plentiful supply of stimulating manure to force the young plants, and then to follow this up by frequent and early hoeings. We also strongly advocate early preparation of the land, and then to wait awhile for a favorable time for sowing, when, as we stated in our paper on Mangolds, all the appliances of the farm should be brought to bear upon it, and the whole got in at

once. We need not say we also strongly advocate a thick seeding, certainly not less than four pounds per acre. Adopting these precautions we generally succeed in getting a good crop, and can scarcely remember a failure either in mangold or turnips. We confidently recommend a similar course, and the adoption of similar precautions and appliances to our readers.

*Groombridge's Farm and Garden Essays. No. 7. The Garden Frame.* London: Groombridge and Sons.

We do not remember to have met with a little work which offers promise of greater usefulness than the one before us. Messrs. Groombridge have the credit of bringing forward many successful and cheap publications on rural economy; but few of them deserve, and we think will meet with more decided encouragement than the series we now notice. "The Garden Frame" is a very favorable specimen of its class. To the amateur or villa gardener now—thanks to railway transit, a personage of rapidly increasing ubiquity—the number before us will be found very interesting, as showing him how, without the aid of a conservatory, he may successfully winter his more tender flowers—may germinate many useful bedding plants, and may still raise his favorite cucumber or melon. The uses of the Frame are intelligently set forth, and the modes of use are clearly explained, so that even the denizen of the busy haunts of commerce may, without the aid of a professed gardener, encourage his taste for delicate fruits and flowers, and amuse his leisure hours with a certainty of success, which, without the aid of this *vade mecum*, he could not attempt.

That our readers may judge of the value of this essay, we mark for extract the following:—

RAISING VEGETABLE AND FLOWER SEEDS.

As it will be a considerable time before the cucumber plant will occupy a great space in the frame, advantage may be taken to raise a number of vegetable seeds, the plants of which will be found useful for planting out in the open ground. Besides these, there may be pans sown with mustard and cress, which, in the course of a few days, will furnish an early salad, and of which a succession may be kept up during the spring. Of the plants which we would raise in the hotbed, we would particularise capsicum, tomatoe or love-apple, and the vegetable marrow.

**THE CAPSICUM.**—The pods of the capsicum are highly valued by some as an ingredient in hot pickie; they are used green, and are generally fit for this purpose about the end of August or beginning of September. The seed should be sown about the end of March, the quantity of seed be regulated by the extent of the cultivation which is intended to be carried out; it should be sown in pots, and covered about a quarter of an inch deep with soil. When the plants have grown, and acquired about six leaves, they should be pricked off into pans, where they should remain until they have acquired some strength, and then they may again be transplanted in rows on the outside of the bed. About the end of May or beginning of June, they may be planted out in a warm border, and protected for some time by hand-glasses. When they are transplanted to the situations they are intended to occupy, they should be two feet asunder, and well shaded from the sun until they have taken the ground, after which they may be left to themselves

**TOMATOE OR LOVE APPLE.**—This is a plant, the fruit of which is not duly appreciated by the middle classes of the population of this country; otherwise it would be more generally cultivated than it is; whether for soups, sauce, or pickles, there is, perhaps, no vegetable to surpass or even to equal it. We could here furnish a recipe or two instructing how best to use them, but as that is out of our province, we must refer the reader to Mrs. Rundall or some other lady, whose skill in these matters is more becoming than us. What we profess to do, is to teach the way to produce them. The seed should be sown in pots any time in March, and kept in the hotbed; they should be covered from a quarter to half an inch deep with soil. When the plants are up, and have attained two or three inches high, they may be pricked out either in rows on the outside border of the bed, or into small pots, putting only one plant in a pot. As they gain strength and increase in size, let them be shifted into larger pots; and by the latter end of May they will be ready to be transplanted to their final destination, and which should be in a sheltered situation, with good exposure to the sun. Some should also be planted against a wall, or trained to a trellis, and when they have made a free growth, they should be carefully trained to whatever object they may be in contact. When they have shown a requisite quantity of fruit, the shoots should be pinched off so as to throw all the vigour into the fruit, which will now swell and increase to a desirable size. It must be borne in mind in cultivating this plant in this climate, that the first-formed fruit only will be brought to maturity, and to allow the plant to go on setting an additional quantity, which will never ripen, is only to exhaust its strength, and thereby injure that which it has already produced. The fruit will ripen in succession during September till the early part of October.

**VEGETABLE MARROW.**—This, also, is a very excellent vegetable, which is not so extensively cultivated as it might be; and as there is nothing peculiar or difficult in the management, there is no garden, however small, which need be without it. The seeds should be sown in a pot about the first or second week in April, and treated much in the same way as we have directed for cucumbers. When they have shed the seed envelope, put them into small pots, putting one plant into each pot, and keep them in the frame until they have made a free growth; they must then be "stopped," and about the last week in May, plant them out in a favorable situation, with a considerable mass of well-rotted dung at the roots. When it is practicable, the best situation is on an old hotbed. If well fed, they will grow luxuriantly, and as the vine becomes strong, it should be pegged down at intervals, when it will take root, and contribute much towards the strength of the plant. This is a most useful culinary plant. The fruit is ready for use when not larger than a goose's egg, and they ought never to be allowed to grow too large.

There are several other varieties of vegetables which, though not, properly speaking, belonging to the hotbed department, are nevertheless, when wanted early, raised in this way; these are brocoli, cauliflower, and celery. When, as is sometimes the case, these are wanted early, they are sown in pans, and pricked out, when large enough, either on a hotbed hooped over, and covered with a mat, or in some very warm and sheltered situation, and protected with the lights of a frame which is not in use. After remaining for some time in this situation, and having

gained strength, they are planted out where they are to remain, when the weather is favorable for such a purpose.

Besides the vegetables which we have mentioned as desirable to raise in a hotbed frame, there are also some of the tender annuals, which should not be lost sight of, and which will, during the summer and autumn months, contribute very much towards the ornament and pleasure, not only of the garden, but also of the sitting-room and balcony. Of these, we may mention balsams, browallias, cockscomb, nasturtium, marvel of Peru, sensitive plant, and *Thumbergia*. The ice plant and sensitive plant are more curious than ornamental; but, like birds of the fens, song, which have but unattractive plumage, these very interesting plants, though they have no floral beauty to display, will be found to contribute in a small amount of pleasure and gratification.—*Farmers Herald*.

#### NEW SWEEPING MACHINES.

On Tuesday last, some of the streets of Hull were swept by a machine, which astonished many who witnessed this invasion upon the ancient mode of hand-sweeping. Mr. Croskill of Beverley, who has lately introduced the American reaping-machine into Yorkshire, and by that substitute for the hand-sickle and scythe produced such a sensation among the farming classes, has now introduced an invention, patented by Mr. Blundell, of London, for effectually sweeping our streets with a rapidity hitherto unknown, and at so cheap a cost (we are informed at about twopence per 1000 superficial yards) that a road or a number of streets—say three miles in length, and at an average width of 36 feet—may be swept in one day of eight working hours by this machine, with one man and a horse, the horse going at the slow walking pace of two miles per hour. It will doubtless interest our readers, who have not seen the sweeping machine, to know something of its construction. The patent sweeper consists of revolving brushes, capable of being raised or lowered at will, and working diagonally, beneath a boxed-up kind of cart, inside of which the gear-work is arranged, and is set in motion by the road-wheels of the machine. The machine sweeps most effectually six feet in width at a time, and collects the dirt or mud for loading into the scavengers' carts, with a rapidity never before attempted, and by a mode perfectly inoffensive to the passer-by. This invention is most seasonable, and would very greatly assist every board of health, as well as the surveyor of our turnpike roads, to clean and keep clean, and thereby reduce the expenses of repairing, our streets and roads. We understand that the Mayor of Hull, the ex-mayor (Mr. Palmer), Mr. Tall, Mr. Huffam, and other members of the Dock Company, also several members of the Hull Board of Health, Mr. Oldham, civil engineer (surveyor of turnpike roads,) and many other gentlemen who witnessed the trial, expressed their approval of the machine to Mr. Blundell, the inventor. Many working men stopped

eagerly to gaze at this intruder, and one drily said to the machine-man, "Then you mean to hunger us up, and with that thing to set aside fifty of us." It may indeed set aside the street sweeper and his broom, by changing his drudgery to the more useful and economical application of his labor by collecting and removing the sweepings, and more constantly keeping our streets and roads not only free from muddy accumulations, but really clean and dry, without either decreasing the number of men, or at all increasing the expense; the public will then derive the benefit of the invention.—*Eastern Counties Herald.*

#### SUPERIORITY OF JERSEY COWS.

STR.—In my correspondence, under the head "Butter Making," I think I proved, to the satisfaction of your readers, that, as dairy cows, those of these islands were the best in the world, inasmuch as the pound of butter was produced from 16½ pints of new milk the year round, on our average dairies; whereas it requires 25 or 26 pints of the milk of your cows to produce the same quantity. We as well as you have individual instances of greater produce. But this is not all the superiority of our cows; for whilst they give almost the same quantity of milk, they do not consume so much food. The difference is as three to two—that is, three of our cows consume the same quantity as two of yours; and, hence, two of our breed are, for a dairyman, equal to four of yours.—Yours, &c., THOMAS HAYLEY, Jersey, April 8, 1852.

RICH AND POOR.—It is very easy for you, O respectable citizen, seated in your easy chair, with your feet on the fender, to hold forth on the misconduct of the people—very easy for you to censure their extravagant and vicious habits—very easy for you to be a patron of frugality, of rectitude, of sobriety. What else should you be? Here are you, surrounded by comforts, possessing multiplied sources of lawful happiness, with a reputation to maintain, an ambition to fulfil, and the prospect of a competency for your old age. A shame indeed would it be, if with these advantages you were not well regulated in your behaviour; you have a cheerful home, are warmly and cleanly clad, and fare, if not sumptuously every day, at any rate abundantly. For your hours of relaxation there are amusements; a newspaper arrives regularly to satisfy your curiosity. If your tastes are literary, books may be had in plenty; and there is a piano if you like music. You can afford to entertain your friends, and are entertained in return. There are lectures, and concerts, and exhibitions accessible if you incline to them. You may have a holiday when you choose to take one, and can spare money for an annual trip to the sea side. And, enjoying all these privileges, you take credit to yourself for being a well-conducted man: small praise to you for it!—if you do not contract dissipated habits, where is the merit? you have few incentives to do so. It is no honor to you that you do not spend your savings in sensual gratification; you have pleasures enough without. But what would you do if placed in

the position of the laborer?—how would these virtues of yours stand the wear and tear of poverty?—where would your prudence and self-denial be if you were deprived of all the hopes that now stimulate you?—if you had no better prospect than that of the Dorsetshire farm servant with his seven shillings a week, or that of the perpetually-strained stocking weaver, or that of the mill-hand with his periodical suspensions of work? Let us see you tied to an irksome employment from dawn till dusk; fed on meagre food, and scarcely enough of that; married to a factory girl ignorant of domestic management; deprived of the enjoyments which education opens up; with no place of recreation but the pot-house—and then let us see whether you would be as steady as you are. Suppose your savings had to be made, not, as now, out of surplus income, but out of wages already insufficient for necessities, and then consider whether to be provident would be as easy as you at present find it. Conceive yourself one of a despised class, contemptuously termed "the great unwashed," stigmatized as brutish, stolid, vicious—suspected of harbouring wicked designs, excluded from the dignity of citizenship, and then say whether the desire to be respectable would be as practically operative on you as now. Lastly, imagine that, seeing your capacities were but ordinary, your education next to nothing, and your competitors innumerable, you despaired of ever attaining to a higher station, and then think whether the incentives to perseverance and forethought would be as strong as your existing ones. Realize these circumstances, O comfortable citizen! and then answer whether the reckless, disorderly habits of the people are so inexcusable.—*Spencer's Social Statics.*

AGRICULTURAL LECTURE.—Mr. W. W. Fyfe continued his Normal lecture in the hall of the Normal Society, Moray House, on the 14th ult., by treating of the vital functions of plants. He defended the attempt in which he is engaged of seeking to diffuse through the common schools a general knowledge of the scientific truths and principles of agriculture amongst the great body of the population. Having described the structure of the seed, and the diseases to which it is incident, with their remedies, the lecturer proceeded to illustrate, by entering at large on the characteristics and varieties of seed wheat, and minutely describing thirty individual grains of white and twelve of red qualities in common cultivation, what might be done in the way of imparting this important but neglected kind of knowledge to agricultural pupils. For this and similar purposes he suggested the formation of small school collections or museums, and the familiarising the pupil with the best forms of seed, &c., by that means. He then successively discussed the different conditions required in germination, viz., moisture, temperature, the action of oxygen, and the exclusion of light, and the relative agricultural operations to which they respectively give rise; illustrating by rapidly drawn figures the forms and contents of seeds, and the development of their radicles and plumules—dwelling throughout the entire lecture on the subject of germination, because in getting the productions of the farm over this first critical

stage of life, the work of the agriculturist would be found more than half done; and believing that consequently one of the main points of scientific instruction must be to show the mode of attending to the natural processes the plant has, at this stage, to undergo.

**PRESERVATION OF BUTTER.**—If butter consisted only of the fatty parts of milk, it would undergo, from exposure to air, very slow changes. But it retains a certain quantity of casein, [cheesy matter] which is found in the cream. The casein ferments and generates butyric acid, which is the cause of the disagreeable rancid taste. Repeated washing imperfectly removes this acid, for water does not cool butter, and does not dissolve the casein, which has become insoluble under the influence of the acids which form in the cream. We might obtain a more complete purification if we should saturate [neutralize] these acids. The casein would then become soluble, consequently by repeated washings it would be almost entirely removed. This is the mode by which we purpose to attain this end: when the cream has been put into the churn, mix with it, a little at a time, enough of the milk of lime [quick-lime diffused in water of the consistency of milk] to destroy entirely the acidity. The cream is then to be churned until the butter is separated, but we must not continue the process until it collects in masses. The buttermilk is then to be poured off, and water added in place of it. The churning is then to be continued until the butter is fully made. It is then taken from the churn and made into rolls. By this method we have obtained better butter, and it has preserved its qualities for a longer time than that made in the common manner. The buttermilk loses its sharp taste, and is more agreeable to man and animals, and is no longer laxative. We have, moreover, restored rancid butter by repeated washings with lime-water.

Any alkaline solution answers equally as well as lime-water.—*M. Chalmel, Comptes Rendés of the French Academy of Sciences.*

**AGRICULTURE IN FRANCE.**—The following details on the present state of agriculture in France are taken (says the *Siccle*) from the most recent statistical tables. We possess 53 millions of hectares of land, and the gross produce of the soil amounts to about 6 milliards, being scarcely 113*l.* per hectare ( $2\frac{1}{2}$  acres). But it is known that a good tillage gives, in gross produce, about 10 per cent. on the value of the land of which 6, 7, or 8 per cent. is for the cost of tillage and manure and for the farmer's profit, and 2, 3, or 4 per cent. for the landowner's revenue. In France good land is worth, on an average, about 3,000*l.* the hectare, and gives 300*l.* of gross produce. There are many pieces of land which give 500*l.* or 600*l.* with speaking of land cultivated as gardens or nurseries, which must not be included in the consideration of the average returns. Every piece of land which does not give 10 per cent. of gross produce must be con-

sidered a bad soil or badly cultivated, or purchased above its value. In fine, every piece of land which gives less than 250*l.* in gross produce calls indispensably for some amendment in the terms of its being held, such as to enable it to furnish at least such a return. If, then, the average return of land in France is only 113*l.* per hectare, that is, a little more than one-third of what it ought to be, the reason is, that nearly two-thirds of France are composed of land exceedingly poor, and often even totally unproductive. The districts which show the most sterility, throughout a great part of their extent, are—Berry, Bourbonnais, Auvergne, Forez, Velay, Gervaudan, Rouergue, the Landes, La Vendée, Brittany, Limousin, Sologne, and Champagne. After those come, in degree of sterility, Anjou, Artois, Alsace, La Bresse, Lorraine, Maine, Poitou, and Provence. The districts which are the best cultivated and most productive must be considered the Nord, Normandy, and Beauce.

**THE EARL OF CARLISLE ON RELIGION.**—It appears to me that there are two principles upon which we must mainly rely for success in any attempts to raise and regenerate mankind. The one is to have a very high opinion of what we can do, the height to which we can soar, the advance in knowledge and virtue which we may make—that is, ambition as concerns our capacities. The other is to have a mean opinion of what we at any time know, or at any time have already done—that is, humility as concerns our attainments. The ambition should be ever stirring us up to the even and steady development of righteous principles, and, where the opportunity presents itself, to the performance of noble, meritorious, and unselfish actions. The humility should ever keep in view that there is no sphere of life, however humble, no round of duties, however unexciting, which any of you may not enrich and elevate with qualities beside which the successes of statesmen and the triumphs of conquerors are but poor and vulgar. I believe there is no eminence to which man may not reach, but he must reach it by subordinating all unlawful impulses, and by subduing all mean ambitions. There is a general craving in the human mind for greatness and distinction. That greatness and distinction, I am thankful to think, is within the reach of any one to obtain; but the greatness and distinction must not be without you, but within you. I should be sorry to appear to take this opportunity of preaching what might be called a sermon, but I feel so fervid an interest in the welfare and progress of the great body of my countrymen, that I cannot refrain from enjoining them, even while I would invite them to a full enjoyment of all the rich resources and all the innocent pleasures of this our variegated world, never to lose hold of religion. I do not mean that you should necessarily confine it within those stiff and narrow grooves in which some would imprison its ethereal spirit; but I feel assured that it is the source among mankind

of all that is large and all that is lovely, and that without it all would be dark and joyless. Under her sacred wing you may securely resign yourselves to all that is improving in knowledge, or instructing in science, or captivating in art, or beautiful in nature. The Architect of the universe, the Author of being, such as Christianity represents him, cannot but approve of every creature that He has made developing to the utmost extent the faculties He has given him, and examining, in all its depth and mystery, every work of His hand. Shut up the page of knowledge and the sources of enjoyment from the multitude, because some have occasionally abused the blessed privilege! Why, the very same argument would consign every man and woman to a cloister, because the world and active life are full of traps and pitfalls. No. Pre-eminent and supreme as I am convinced religion is, yet to make her so in the convictions and hearts of men, I feel she must discard all timidity, must front every truth in the full blaze of light, and sympathise with every pursuit and every impulse of our race.—*Address delivered at Lincoln.*

**MACHINES AND MEN.**—This question has a very wide bearing as regards those of the laboring classes whom the invention of new and improved machinery may dislodge from their former occupations. How the working classes are to obtain the full benefits and advantages of the "labor saving" processes, is a problem which we have not yet seen satisfactorily solved, but it is one that will press for solution from day to day. One would naturally infer that the improvement of machinery, by which the drudgery and hard work of the world is performed, should give greater leisure, greater comforts, and improved facilities for culture of the higher power of man's nature. The machine which liberates so much of mere human drudgery *ought* to be a great blessing; it ought to give to the working classes more time that they can call their own; more leisure for self-culture, for domestic intercourse, for social and political action. We fear this matter has not yet been seen to; and if we listen to the discussion, going on around us on every side, we find that it is the source of much of the disquiet and unrest which pervade modern society. This it is which gives power to the party "Socialist," now so extensively pervading the civilized world. How are the working people—the inventors and improvers—the makers and the watchers of machines—to reap the advantages arising from their discovery and adoption? This is the question now awaiting solution, and it is a most serious and knotty one. . . . We might carry these observations much farther; but we leave them at this point. What we mean to convey is this, that while we have been improving machinery, we have been neglecting man—while we have greatly economized and multiplied labor by superior machines, we

have not given the laborer the benefit of these grand inventions—while we have enormously multiplied wealth by mechanical contrivances of all kinds, we have left the bulk of our people in an unimproved and uncultivated state, and that while it is right to carry the improvement of machinery to the highest point in order to set free human toil, the time so liberated ought to be devoted to advancement of man's spiritual and intellectual culture, which unhappily is not as yet the case, and it is but too little thought of.—*Eliza Cook's Journal.*

**PRIDE.**—A proud man is a fool in fermentation, swelling and boiling like a porridge pot. He sets his feathers like an owl, to swell and seem bigger than he is. He is troubled with an inflammation of self-conceit, that renders him the man of pasteboard, and a true buckram knight. He hath given himself sympathetic love-powder, that works upon him to dotage, and transforms himself into his own mistress, making most passionate court to his own perfections, and worshipping his own image. All his upper stories are crammed with masses of spongy substances, occupying much space; as feathers and cotton will stuff cushions better than things of more compact and solid proportion.—*Belting-broke.*

**ON THE PRODUCE OF WHEAT.**—Felix Chas. Victor Leon d'Urele, of Paris, farmer, has obtained a patent for improvements for increasing the produce of autumn wheat. Patent dated June 21, 1851. These improvements are based on a supposed discovery of the patentee that autumn wheat is, contrary to the generally received opinion, a biennial plant: and it is to develop its natural capabilities, and rescue the plant from the state of degeneracy to which a long course of improper management has reduced it, that are the objects proposed to be attained by him. The ground in which the wheat is to be sown must be tilled and well manured, and the sowing is directed to take place between the 20th of April and the 10th of May; it may be a few days earlier or later, but somewhere between those dates is, the patentee says, the proper moment. The field having been divided into squares of about a quarter of an acre each, diagonal rows of holes are dug at a distance of from 15 to 20 inches apart, in each of which are deposited four grains of wheat arranged in a circle, or otherwise at a little distance from each other. This done, the holes filled in, and when the plants have grown to a height of about 4 inches, three out of the four plants (which are supposed to have sprung up from the seed) are to be pulled up, leaving one plant only, and that the strongest and most healthy; the produce of wheat from which, when it arrives at maturity, will be very considerably increased over the usual yield. By following out this course of treatment, the quality of the grain will be increased each succeeding year until it arrives at a state of perfection, of which, under the ordinary system, it is supposed to be quite incapable. Claims developing the biennial properties of autumn wheat by the process described, by which its produce will be very much increased.—*Mechanics' Magazine.*



# Agricultural Journal,

AND

TRANSACTIONS

OF THE

LOWER CANADA AGRICULTURAL SOCIETY.

MONTREAL, JULY, 1852.

## AGRICULTURAL REPORT FOR JUNE.

The past spring was not a favorable one for farmers. Scarcely any work was done previous to the 1st of May, and though land ploughed in the fall worked very well during the dry weather of May, vegetation made very little progress, and the land not ploughed last fall became so excessively hard, it was impossible to plough it until after the rain of the 9th and 10th of June. In order to be prepared for such a spring as the present, it would be of great importance to have the manure ploughed into the soil in the fall previous—particularly for root crops. This would enable farmers to have their sowing and planting much sooner finished in the spring, and the soil would not become very hard or difficult to work in the driest season. Carting out manure in spring is often a work of some difficulty, and if the weather should be wet, the land becomes injured by carting upon it. Ploughed soil is frequently very hard in a dry spring, and in lumps that are difficult to break, unless with a heavy clod-crusher. We believe that if soil was properly drained, and ploughed when in good condition for that operation, it might be sown in spring before it would be in hard lumps that would require the use of the clod-crusher to break them. When necessary to defer the sowing of wheat until the latter end of May, strong clay land might become hard and difficult to bring into a proper tilth such a season as this, though we are inclined to suppose, that, if in a suitable state when ploughed in the fall, and then well drained, it would be in good working order in almost any spring. All these matters require the greatest attention, in order to secure success in farming, or even a chance of success. It has

been an extraordinary feature of this spring, that rain, when it occurred, was invariably succeeded by high winds and a very low temperature. On the night of the 10th of June, there was frost in many places, and we have seen potato plants completely frozen the morning of the 5th June. There is another difficulty we apprehend, that grain sown during the dry season has not sprouted together and is not likely to ripen together. It is the same case with small seeds sown under similar circumstances, that they have not come up evenly, and some we fear will never come up. Steeping small seeds previous to sowing is a good plan, but there is danger this year, that steeped seed sown during the dry weather will not sprout again, but will fail altogether. There are great complaints of the clover sown last year, that much of it has been destroyed by the severe winter, and in many places there is not a plant left. This is a great disappointment to farmers. The timothy has also suffered in exposed situations, where there was not much covering of snow. We have tried Lucern, and we are convinced that it cannot be cultivated to advantage, it is so liable to be destroyed by severe frost. If it happened to be covered during winter with snow it might be safe, but the risk is too great, and it is almost impossible, to prevent some parts of a field being destroyed. It would be a most excellent plant to cultivate, and has a most luxuriant growth and beautiful appearance when in flower, but with all these advantages, it is an unsafe crop in Lower Canada, so far as our experience of it extends. Clover, on the contrary, is generally a sure crop, and will not be injured by the frost of ordinary winters.

Notwithstanding the cold and ungenial spring, we gathered ears of fall rye on the 12th of June, the same day that we sowed a small quantity of Fife and Flint wheat by way of experiment, to see how they may succeed. We have had spring-sown wheat (sown the first week in April) coming into ear the 12th of June, exactly in nine weeks from the day sown, but that was a most favorable spring. This year, though we have a late spring in Lower Canada, we are not much more backward than

in Upper Canada or the New England States, and we see reports, that from the severity of last winter, fruit trees have been killed in the latter country. Much depends upon the skill and industry of the farmer to overcome to some extent the difficulties and disadvantages of adverse seasons. We do not say that it would be possible to overcome them altogether, but skill, attention and industry will go a great way in securing favorable results, that without their exercise might prove very unfavorable. At this season of the year it is the custom of some Canadian farmers to clear their farm yards of all the manure, and place it in cart-loads upon the unploughed land until the fall, when it is spread and ploughed in. In the first place, there is generally three times the quantity of manure applied to the acre in this way that would be necessary if properly applied, and it is left exposed to the great heat of the summer until this large quantity of manure is reduced in actual value to less than one-third or one-fourth of what it was worth when put out. If this same quantity of manure was mixed in a compost heap and kept until the fall, and then ploughed in, five or six acres might be manured, and perhaps more, with the same quantity of manure that is now put out upon one acre. It is no doubt put on now with a view of improving the land, and preventing its becoming too hard for ploughing, but the small portion of the field that is thus protected and manured, is very trifling when compared with the whole, and hence the manure that might improve amply, ten acres of land by proper management, is wasted perhaps on one or two acres, and its best qualities evaporated before it is ploughed in. Top-dressing meadow lands in spring is sometimes unavoidable, but at that time the weather is not so hot and dry, and the grass soon grows up and shades it. Top-dressing meadows should, however, be done in the fall, or if in the spring, very early, immediately on the disappearance of the snow. Compost answers best for top-dressing, whatever time put on, and on grass land a compost, which may have only a small portion of farm

yard manure in it, will answer a good purpose. Clay or any kind of soil, mixed with bog earth, salt, lime, ashes, and liquid manure thrown upon it constantly, and all mixed up and turned over once or twice, makes excellent top-dressing. This application of liquid manure, we conceive to be the least expensive and judicious employment of it. It would be a good plan to have a hollow place made in a convenient central situation in the farm, to answer as a general reservoir for all the weeds, wastes, soil, manure, &c., that could be collected during the summer months. When there would be such a place it would induce farmers to collect all manuring materials, when if there was not such a reservoir, they might never think of it. The wastes of the house are often lost instead of being collected, to be employed as manure. In cities and towns, the waste of excellent manure is a great general loss to the country. Manure is employed in making streets and filling up waste places, that would be of great value in the country. If this manure was collected together, farmers would be found who would purchase it at a fair value; but it would not pay them to collect it on the streets and cart it several miles, before the water would have drained out of it, and a degree of fermentation would have taken place in it. This waste of manure, that is so much wanted in the country, is a general injury to agriculture that supplies the materials which make this manure. The consumption in towns is chiefly supplied by the country, and all the wastes of the towns should be returned to the country to keep production in a healthy state. These matters do not receive the consideration and attention they deserve, and the inhabitants of towns act as if they thought they could live and thrive independent altogether of the country. For every cart-load of manure that is wasted or injudiciously employed in towns, the country is robbed of so much that actually belonged to it, no matter who is to blame for it, the fact is so, because production cannot go on unless the waste of production is replaced. In the city of Montreal alone, there is as much manure

wasted annually as would produce food for a large portion of her inhabitants, and the land that supplies Montreal must be impoverished unless a proportionate return is made to it in the shape of manure from some quarter. Farmers have to buy stable manure they cart in winter at the rate of about ten pence the sleigh load. The town manure, if carted to one place during the summer and fall, would be worth purchasing at a fair price, which we have no doubt would pay the expense of collecting it, and it would be a general benefit. We recommend this subject to the consideration of those who have it in their power to take some action in the business. Caterpillars have been very troublesome in orchards this year; indeed the expense of destroying them will considerably diminish the value of the fruit where there will be any fruit. The apple trees are in many places deprived of their leaves, and where this is the case there is no chance of much fruit. We have seen it recommended to spread a mixture of lime, salt, soot and ashes round the roots, at about two or three feet distance from the root of the apple trees, and this will prevent the vermin going from one place to another, and is said to be an effectual check to the ravages of this pest. Where orchards are near forests or forest trees of any kind, it is almost impossible to destroy all the caterpillars, but they will not pass over this mixture if spread in a circle round the root of the tree. The leaves of the trees of every description have been withered to a considerable extent by a blast or by frost, and this greatly diminishes their beauty at this early period of the season. The clover, and tops of the young grain plants, were also withered, but not to injure them. We report the appearance of the country, as it is about the middle of the month, and we certainly cannot give any flattering representation of it. Before we close our report, however, the crops may be much improved, and we shall state what we conceive to be the prospect at the end of June. Heat and a sufficiency of rain for the next fortnight would do wonders for the crops,

but without both, there is not a chance of there being an average this year. As we before observed, it is a remarkable feature of this year that we have scarcely had any dew up to the middle of June, an unprecedented circumstance, and we have never known it to happen so before. Great anxiety was manifested by farmers this year to procure new varieties of wheat for seed. What is called the Fife wheat, that has been cultivated for some time in Upper Canada successfully, coming to maturity in three months from the time of sowing, and does not rust, has been much sought after. The grain is plump, though not very large. We hope its introduction into Lower Canada may prove a great advantage. It is a spring wheat. We would require a new importation of black sea wheat, purchased on the spot where it was grown, and not from speculators and jobbers, who cannot be depended upon for giving the seed required.

We had prepared the Report so far previous to the 15th June, and we are now glad to have it in our power to state, that the late rains have greatly improved the appearance of the growing crops, with the exception of meadows, which we fear will be much under an average crop. The clover has been fully in flower for several days past, and is very short, and meadows generally do not promise anything like a heavy crop this year. The grain crops, though backward, have a very healthy appearance, and if the season turns out favorable, we may have a satisfactory harvest. Potatoes look well in many places, though we believe some seed has failed from being dried up after planting. The application of recent farm yard manure in the drills, under and in contact with the seed, such a year as this, is not a good plan; indeed, the prudence of applying fresh manure from the farm yard in this manner to potatoes at any time, is more than doubtful, particularly since potatoes become liable to disease, both in the seed and crop generally. Indian corn is a very poor crop this year. The small seeds, such as those of mangold-wurtzel, beets, carrots, and

parsnips, have come up very irregularly, and in many instances have failed; and this is a considerable disappointment, as these crops would be very useful in case of a short crop of hay. We have seen dry seasons generally good for the farmer, but whether it will be the case this year, it is impossible to say at the present moment. Fall wheat, though considerably injured last year, should not be given up. We are persuaded, that by careful cultivation in ordinary seasons it would succeed. In Upper Canada, this year, some fields have failed, but they will not discontinue sowing it on that account, and neither should we give it up. The wheat-fly has appeared in fall wheat and barley. The pastures have greatly recovered, though in many places they are still very short and poor. Upon the whole, there is no reason to anticipate bad crops, and it is the duty of agriculturists, when they have done their part well, to rely with perfect confidence upon the Giver of All Good, that their labor shall not be in vain.

June 30, 1852.

#### SUMMER FALLOW,

Executed in a proper manner, from the commencement to the end of the process, is an excellent means of improving the soil, particularly in heavy clay land. There are not any better means of cleaning the land of all weeds, of mixing and pulverising the soil, of ploughing to the depth required, and of straightening the ridges, if previously crooked, and making them of suitable and uniform width. These improvements cannot be well made without summer fallow. The benefit of the process is not confined to these improvements, but the soil is actually enriched and rendered much more capable of producing good crops, though no manure should be directly applied to the land. The frequent ploughing and harrowing, and exposure of the soil to the influence of the sun and atmosphere, has a very ameliorating effect upon it, however it is produced. The ploughed soil must imbibe the gases that are constantly floating in the air, and thus acquire fertility.

It is only when the land is broken up, and kept constantly stirred and turned, that it is capable of attracting the useful gases that float in the atmosphere; and unless the process of fallowing is properly executed, and the soil constantly broken up by the plough, the harrow and grubber, the great improvement by fallowing is not attained.

The land intended for summer fallow should be ploughed or drilled up the previous fall. The drilling answers a good purpose, takes less time, and the land is dry, and early in spring is fit for work. The drills can then be well harrowed, and the land ploughed across. This is the commencement of the process. After the spring work is finished, the fallow should again be worked with the harrow, the grubber or the plough, or all three if required. The small seeds of weeds will probably have sprouted, and then will be the proper time to destroy them by the plough and harrow, and all root of weeds by hand picking and burning, if their vitality is not destroyed by the sun drying them up while exposed.

Summer fallow affords the farmer full opportunity of cleaning, levelling, draining, liming and manuring the land. If he has manure to apply, it should be with the last ploughing, and then the land to remain over for spring sowing. The land that is summer fallowed in a proper manner, with or without manure, will give a better crop of grain the following year than by any other mode of cultivation. For fall wheat, it is the best preparation possible, and we should not hesitate to sow fall wheat, if sown in time, and in a proper manner, in drills, or ploughed in lightly, on summer fallowed land.

We have received the "Proceedings of the General Committee of the North Shore Railroad" from Quebec to Montreal, which has been printed in pamphlet form, and contains a map of the proposed line. The countries through which the railroad is proposed to be constructed contains nearly 300,000 inhabitants, including the cities of Montreal and Quebec. The Engineer's estimate of the cost of the railroad to put it into complete working order,

is £500,000, or £3,185 per mile. The route is reported to be very favorable, and from the generally level surface of the country, we have no doubt it is so. The railroad would be an immense advantage to the inhabitants on the north shore of the St. Lawrence. Parties may suppose that with such a river as the St. Lawrence, so near the line of the proposed railroad, the latter would not be necessary; but we should recollect that the St. Lawrence is closed by ice for nearly half the year, and that in summer the regular steamers only stop at one place on the north shore in the middle of the night—at Three Rivers. Between Albany and New York, they have constructed a railroad along the shore of the Hudson, though that river has a numerous fleet of steamers going day and night between these two places, and stopping at every town and village on the way. We advocate railroads, because we believe they would exercise a very beneficial influence on agriculture.

A. Kierzkowski, Esq., a Director of the Lower Canada Agricultural Society, has politely handed us a pamphlet, of which he is the author, entitled, "La Question de la Tenure Seigneuriale du Bas-Canada, ramenée a une Question de Crédit Foncier." It is addressed to the President and Directors of the Lower Canada Agricultural Society, and printed by Mr. Lovell, of Montreal, on excellent paper, in his best style, and contains 41 pages. The pamphlet being in French, we are unable to review it, in consequence of our imperfect knowledge of that language, and as Mr. Kierzkowski proposes to have it translated and published in English, we shall defer our remarks until we have it in that language. We are satisfied, however, that Mr. Kierzkowski will have done justice to the subject he has taken in hands, and it is one of the greatest importance to the rural population of Lower Canada. For many years the Seigneurial Tenure has been a subject of discussion, and a question of deep interest with the whole community. Mr. Kierzkowski is interested as a Seigneur, and if the plan he proposes will

have the effect of leading to a final and satisfactory settlement of the question, he will deserve the thanks of the Canadian community. The subject of Agricultural Credit is also one of great interest, and we hope some measures will be adopted for introducing "Associations of Agricultural Credit" in Lower Canada. We shall be better able to discuss these matters when we can read the pamphlet in English, and we expect that shall be before the next number of the Journal is published.

There appears to be a considerable amount of arrears of subscriptions remaining due for the Agricultural Journals, up to the 1st of January, 1851. In December, 1850, accounts were made out of these arrears, and given for collection, but we are unable to say how much of them have been collected. The Directors of the Lower Canada Agricultural Society have employed Mr. G. H. Cherrier to visit the subscribers to the Journals, to endeavour to ascertain what arrears remain due, and to collect them, together with the subscriptions for this year. Two or three years ago, gentlemen were recommended and appointed agents for the Journals, but though many of these gentlemen collected the subscriptions and forwarded the amount to the Secretary and Treasurer of the Society, others neglected to make any return; and in some cases where money was remitted, the names of the parties who had paid were not sent, and, consequently, where this was the case, the Secretary of the Society could only enter the amount received from the agent, without naming the subscribers who might have paid. It is now respectfully requested, that any gentleman who has consented to have acted as agent, will give every information in their power to Mr. Cherrier when he calls upon them, or to the Secretary and Treasurer of the Society, Wm. Evans, Esq. The object of the Directors of the Lower Canada Agricultural Society, in publishing the Journal, is not to make a profit of it, but solely to promote the interests of the agricul-

turists ; they might, therefore, reasonably expect that the Journals would be self-supporting. It is not as a matter of favor that support would be expected, but upon the grounds that the Journals are good value for five shilling annually, to any party who receives it, if engaged or interested in agriculture. The last number of the Journal (June) contained two articles copied from English publications, that were worth ten times the amount of subscription for a year, provided an agriculturist would have no other opportunity of seeing them. We refer to the articles on Agricultural Education, and on Seeds.

#### HALIFAX AND QUEBEC RAILROAD.

We exceedingly regret that there should be any difficulty likely to occur in commencing this great national work that would be of such immense advantage to British America, and to the British empire. We advocate railroads, because we conceive they are intimately connected with the improvement and prosperity of our country, and because we are certain we cannot without railroads enter into a successful competition with a country that possesses these advantages. The Halifax railroad is particularly necessary for British America, to give her free access to the sea during the long winter season, when Canadian ports are completely shut up by ice. We cannot understand upon what principle there should be opposition to the building of the road in question, and the security for any money required for its construction, would be as good as any country on earth could offer. There is much talk of the road not paying, and the difficulty of keeping it passable in winter, but this is only talk, and if the road did not pay immediately, it would at all events open up a vast extent of land for settlement that will remain waste for a century without the road. It is a work that is so essential to the settlement and well-being of the country, and the connection of Canada with Britain, that, though it may be delayed for a time, we have no doubt whatever that before many years expire it will be in full operation.

The inhabitants of Canada are generally dependent on the produce of the soil in one shape or other, and it is, therefore, of the greatest consequence to them that this produce should be as abundant and excellent as possible. If the rural population are not generally sufficiently skilful to cultivate and manage the land to the best advantage, it is evident that it would be for the general interest, that measures should be introduced for their instruction in this all-important branch of industry. Unskilful application of labour and capital is a public loss as well as a private one, and it would greatly promote the welfare of a country that labour and capital should be employed skilfully, judiciously, and to the best advantage, particularly when applied to the land. We every day see labour and capital unskilfully wasted on land, and producing very small returns, when the same amount of labour and capital (or very little more) skilfully employed, would yield large and profitable returns, that would promote general as well as individual prosperity. It is upon the principle of the general advantage it would be to the country, that we advocate the expediency of providing Agricultural Schools and Model Farms by Legislative means, for affording a practical agricultural education to the youth who might desire it. We deny that the funds that would be appropriated for this purpose would be an unreasonable or unjust application, provided that they were judiciously employed so as to accomplish the end proposed. An extravagant expenditure in the commencement, before experience had been gained by experiment, would certainly not be advisable, but for the particular advantage of so large a majority of the population of Canada, the appropriation of a few thousand pounds to District Agricultural Schools and Model Farms would not be too great a favour to expect, particularly as there would not be much risk in investing the money in this way, on land, implements, and live stock, that should be always improving. This subject is one of great importance to this country, and we commend its consideration to the Government,

to the Minister of Agriculture, and to the Legislature.

NATURAL HISTORY SOCIETY.

The Annual Meeting of the Society was held at its Rooms, in Little St. James Street, on the 18th ultimo, and also by adjournment, on the 31st ultimo, at which a very large number of Members were present.

The Report of the Council of the affairs and proceedings of the Society, for the past twelve months, was read and adopted. The Reports of the Treasurer, Cabinet-keeper, and Librarian, were included in the Report of the Council and also adopted.

The following gentlemen were then elected Officers for the ensuing year—1852-53:—

- S. C. Sewell, M. D., President.
- The Rev. A. DeSola, Vice President.
- B. Workman, Esq., second Vice President.
- A. H. David, M. D., third Vice President.
- Wm. Sutherland, M. D., Corresponding Secretary.
- Joseph J. Dutton, Esq., Recording Secretary.
- G. D. Gibb, M. D., Cabinet-keeper and Librarian.
- L. A. H. Latour, Esq.,
- John Ostell, Esq.,
- Frederick Neif, Esq.,
- A. F. Holmes, M. D.
- W. Fraser, M. D.

} The Council.

From the Report of the Cabinet-keeper and Librarian, we learn that, agreeable to the determination of the Society, the whole of the Building is preparing for appropriation to its service; and that their valuable collection of specimens in Zoology, Entomology, Conchology and Antiquities, together with the valuable donations lately added to the Collection and the Library are being so arranged as to exhibit them to the Members, under the most favorable circumstances for studying their peculiarities, viewing their beauties, and appreciating their value.

We were glad to learn also, that it is in contemplation, when the arrangements are completed to open the Museum to the Public, on certain days, and under conditions which will be published. We consider this a very wise intention, and one eminently calculated, in connexion with Lectures on scientific subjects, to advance the interests of the Society, and raise it from that unjustly depressed condition into which it has fallen of late years;

much to the discredit of Montreal. The public exhibition of so valuable a collection of specimens in Natural History, is calculated to produce a favorable impression on the minds of strangers visiting our City, and disposing them to forward contributions which shall in the sequel raise it to a magnitude and importance that may do honor to the Province, and evince that, amidst all our hurried engagements in business and pursuit after wealth, the gratifications and demand of science are not forgotten; but that we fully recognize its power, at the present day, to discover and bring to the aid of the merchant and manufacturer substances, which, while they tend to ameliorate the condition and minister to the wants of mankind, happily promote that spirit of universal brotherhood which prevent national disputes, softens national asperities, removes national prejudices, and even mitigates the horrors of war.

We ardently hope that the anticipations of its conductors will be realized, their efforts crowned with success, and that it may long prosper under their management.

NATURAL HISTORY SOCIETY.

The usual monthly Meeting was held at its Rooms, on Monday evening, the 31st.

The President, Dr. Sewell, in the Chair.

The Report of the proceedings of the Council was read and approved, and in it were announced the following valuable donations to the Museum and Library:—

From Dr. G. D. Gibb.—His collection of specimens illustrating comparative Anatomy and Natural History, viz:—

Mammalia. . . . .	60	specimens.
Birds. . . . .	33	"
Reptiles . . . . .	71	"
Fishes. . . . .	41	"
Courtaceans. . . . .	28	"
Star Fishes, Sea Eggs, &c.	51	"
Insects. . . . .	94	"
Other classes, as Corals, Sponges, Zoophytes, &c., &c.	49	"
Total . . . . .	427	"

This collection comprises a large number preserved in spirits, many stuffed specimens, various skeletons and portions of the vertebrated series, 2 cases of insects, 1 beautiful

and very perfect case of shell-fish, a case of star-fishes and sea-urchins, and a case of rare fishes, mostly from the China seas.

From *C. M. Dickinson, Esq.*—A molar tooth of that large animal, now extinct, the Mastodon; it weighs 11½ lbs.

From *Dr. Jones.*—Eight stuffed Deers' heads, of various ages, showing the different periods of the growth of the Antlers.

From *J. J. Gibb, Esq.*—The tusk of a Walrus, or sea Horse, from the North Western Territory; 20 inches in length.

From *Mr. H. B. Picken.*—A brass Medal of the Emperor Nero and two other Copper Coins.

From *Dr. Fraser.*—A large Beetle from British Guiano. The *Prionus Cervicornis*. The nest of the Mason Bee, from ditto.

From *Dr. Sewell.*—The *Quebec Mercury*, complete, from 1809 to 1818, 10 volumes, half bound.

From *Miss J. Picken.*—A Pink Quartz Crystal, Ben Cruachan.

From *L. A. H. Latour, N. P.*—An Indian Almanac for 1852-53, with maps and a variety of Pamphlets and papers, on the subject of Education, Agriculture, Topography, Natural History, Commerce and Meteorology.

The cordial thanks of the Society were cheerfully awarded to *Dr. Gibb*, for his very valuable and extensive donations of specimens of Natural History and Comparative Anatomy, generously presented by him to the Society.

Thanks were also given to *Miss J. Picken*, *Mr. H. B. Picken*, *L. A. H. Latour, Esq.*, *J. J. Gibb, Esq.*, and *M. Dickinson, Esq.*, and *Drs. Jones, Fraser, and Sewell*, for the valuable donations presented at the same time.

It was announced to the Meeting, by *Dr. Gibb*, that they have found the 5 volumes of the minutes of the Society, which had been missing for so many years.

To the Editor of the Agricultural Journal

SIR,—I take the liberty of enquiring from you, as a practical Agriculturist, what is the best sort of ma-

terials for draining the following different varieties of wet soils:—

1st. Springs, or what is commonly termed in Roxburghshire, spouty land.

2nd. Boggy or Swampy land.

3rd. Retentive or Clay soils.

And what season of the year is most suitable for draining.

Yours truly,

A YOUNG FARMER.

County of Quebec, 17th May, 1852.

In reply to a "Young Farmer," who enquires what are the best materials to be made use of for under-draining different varieties of soil, we beg to state, that we would prefer stones for every soil, if they could be had conveniently. Tiles; with some small stones placed over them, are also good on any soil. Small poles answer very well, particularly for bog or moss land, where stones cannot be readily had. We have in a former number described how these small poles should be placed in the drains. As many as 8 or 10 should be placed together, not flat, but in a sloping position, not having more than two or three of the ends of the poles coming together, and thus having the joinings broken. The great point in under-drawing is, to have the levels properly carried out, and the materials, whatever they may be, carefully placed in the drains. We have, in former numbers, described modes of draining, and beg to refer our worthy Correspondent to his files of the Journal, as we know he has received them from the commencement. It must not be forgotten, that covered drains require double the fall that would be necessary for open drains, to work well. In the fall is the best time for executing th work.

In reply to a notice of the Agricultural Journal, which appeared in the *Brockville Statesman*, we beg to say that the number of subscribers to the Agricultural Journal is so small, that they do not cover the expenses of publishing; and, consequently, the Directors of the Lower Canada Agricultural Society do not wish to reduce the subscription, until an increased number of subscribers would warrant a reduction. We hope, that we shall have it in our power, at no distant period, to furnish Agricultural Societies, who would take a large



number, at 2s. 6d. each copy for a year. We can furnish all the back numbers from the commencement, and shall be happy to receive the commands of the Brockville Agricultural Society, which we shall attend to without delay.

We copy the following extract from a late Report of the Royal English Agricultural Society, and the remarks and suggestions are as applicable in Canada as in England. Farmers in every country cannot be too cautious in adopting new experiments, unless they appear to be reasonable and are not very expensive. No wonder they should be slow to believe some reports of experiments and results that frequently appear in print. Some of these reports are so ridiculously exaggerated, that they have a great tendency to destroy all confidence in agricultural books or periodicals. Of course these absurd statements cannot impose upon experienced practical agriculturists, but they do great harm with agriculturists who have not these advantages, and lead them into serious errors:—

The Council are aware of the great caution required in the application of science in the practice of agriculture; and of the guarded manner in which any new or striking facts of cultivation ought to be enunciated, in order that the particular circumstances of their occurrence may be most clearly defined. These circumstances they conceive must be accurately understood by the farmer before he can safely transfer to his own locality a mode of management that may have been adopted with success elsewhere. Science so called, can only mislead, when its quality is unsound, or its appellation erroneous; sound science, indeed, consisting of principles derived immediately from facts; which principles, when duly applied to practice, constitute an art of any kind; and this art, whether that of agriculture or any other branch of industry, is only to be perfected by the application of improved principles, whether these be accidentally discovered or ascertained by direct investigation. The Council feel how much the modification or establishment of such principles of improvement depend on the extended practical observation and actual test of their members; and while they are most desirous on one hand to aid in their legitimate development, they are most anxious on the other to prevent their hasty adoption. The really best practice in agriculture always includes as its prime mover the best science; but it is only by obtaining the distinct knowledge of such included science that the conditions can be ascertained under which the practice itself may be transferred successfully to other circumstances: and the Council, in endeavouring to carry out that union of "practice with science," which has become the well-known

motto of the Society, invite from its members such communications of successful instances of management or cultivation, as will either at once become models for adoption, or serve by comparison with other results, to modify the character and extent of deductions to be drawn from them. With such practical aid, the Council feel assured that the Society will continue to proceed in its steady course of public usefulness, gradually developing those national objects for which it was established.

The Directors of the Lower Canada Agricultural Society meet at their Rooms on the second Wednesday of July, 14th instant.

**EXTRAORDINARY PRIZE CAULIFLOWER.**—Yesterday, evening Mr. John Draper, of the Globe Tavern, Hatton-garden, who has just returned from a tour in the west of England, produced a really monster cauliflower, just brought from the estate of Mr. Mainwaring, of Leominster. This extraordinary product of the vegetable garden weighs within an ounce of 14 lbs.; in girth it is three feet five inches, and height, from the stem, twenty-four inches. It is supposed to be the largest of the class ever grown.

**PATENT TILE AND PIPE MAKING MACHINE.**—We were invited yesterday to witness the working of one of Mr. Hart's Tile Machines, at the Atlas Works, Borough road, Southwark. This machine is one of a series intended for Italy, and its construction and principles have attracted a good deal of attention. It makes pipes, tiles, hollow and solid bricks, cornice work, and is capable of being readily adjusted to some 1200 patterns. It is worked by a screw, and is simple to singularity throughout, and is, indeed, the very Quakerism of machines. A man and a boy are capable of giving it a pressure of ten tons; and by a curious reversing or self-acting movement, no time is lost in the working of both ends, the man being continually at work while the boy is carrying away. Thus, and with only moderate exertion, we saw tiles produced at the rate of eight miles per ten hours, and hollow and solid bricks, &c., with like rapidity.—*Morning Paper.*

**ENORMOUS LOBSTER.**—A lobster of an enormous size—a perfect giant of his tribe—big enough to have served an eight feet Patagonian for breakfast, dinner, supper, and all—was caught last week off Helmsdale. It measured in length two feet seven inches, length of jaw ten inches, breadth of do. four and a half inches weight eight pounds two ounces, girth thirteen inches, length of feelers fifteen and a half inches, breadth from toe to toe nineteen inches. A whole party of aldermen might have supped upon this lordly lobster.

**PERUVIAN POTATOES.**—Prof. Way, agreeably to promise, laid before the Council the result of his trial of the Peruvian Potato alluded to on that day fortnight. The potato placed in his hands had not undergone, as he was supposed to have said, any chemical examination. He had merely cut it into four quarters, which he planted in his garden. The result was fifty potatoes, of which he had then the pleasure of laying a supply before the Council, in the hope that those who

continued the trial of the cultivation would in the same manner furnish supplies to the Council, in order that the stock of good might thus become gradually distributed and established. A statement was made of a similar potato from Peru having become the origin of an extended stock over one of the mountain limestone districts in the central part of England, which failed to grow, and only became rotten when transferred to the rich garden mould of the neighbourhood of the metropolis: it was, therefore, though desirable, that, in reports of this potato cultivation the members should particularly state the nature of the soil in which the trials are made.

PURITY.

I would have you attend to the full significance and extent of the word holy. It is not abstinence from outward deens of profligacy alone—it is not a mere recoil from impurity in action. It is not a recoil from impurity in thought; it is that quick and sensitive delicacy to which even the very conception of evil is offensive; it is a virtue which has its residence with and takes guardianship of the heart as of a citadel or inviolated sanctuary, in which no wrong or worthless imagination is permitted to dwell. It is not a purity of action that is all we contend for, it is exalted purity of heart—the ethereal purity of the third heavens; and it is at once settled in the heart, it brings the peace, and the triumph, and the untroubled serenity of heaven along with it.—In maintenance of this, there is a constant elevation; there is the complacency, I had almost said the pride of the great moral victory over the infirmities of an earthly and accursed nature: there is a health, a harmony in the soul, a beauty of holiness which, though it effloresces in the countenance and the outward parts, is itself so thoroughly internal as to make purity of heart the most distinctive guidance of character that is ripening and expanding for the glories of eternity.—*Thomas Chalmers, D. D.*

METEOROLOGICAL RESULT FOR MAY 1852,  
MADE AT ST. MARTIN, ISLE JESUS, C. E., BY  
CHARLES SMALLWOOD, M. D.

Barometer.

	inches.
Mean Reading of the Barrometer, corrected and reduced to 32 F. . . . .	29.539
Highest do do the 4th day. . . . .	30.010
Lowest do do the 29th day. . . . .	29.263
Monthly Range. . . . .	0.747

Thermometer.

Mean Reading of the Standard Thermometer.	52°-27
Highest do of Maximum do 29th day. . . . .	90°-00
Lowest do of Maximum do 26th day. . . . .	26°-00
Monthly range. . . . .	64°-00
Rain fell on five days amounting to inches . . . . .	1.244
Amount of Evaporation, inches. . . . .	3.720
Most prevalent wind. . . . .	W.S.W.
Least do do . . . . .	S.W.
Most windy day, the 17th day, mean miles per hour. . . . .	12.97
Least windy day, the 16th do do . . . . .	0.68
Greatest Intensity of the Sun's ray . . . . .	92.50

*A Cyclopedia of Agriculture: Practical and Scientific.* Part 16. By JOHN C. MORTON. Blackie and Son, Glasgow, Edinburgh, and London.

In the number before us we find an essay "On the Laborer," which is highly interesting and full of valuable matter; and as it is a subject affecting the outlay of the farmer, the suggestions of the writer will materially assist in conducting the general operations of cultivation on the most skilful and economical principles:—

OCCASIONAL OPERATIONS.

*Drainage.*—A man earning two shillings a day can dig and put into a barrow from fourteen to eighteen cubic yards of earth daily. Such is the experience of railway contractors. His wages thus amount to from 1½d. to nearly 2d. per yard. Knowing this, it is easy to calculate the expense of digging ditches. Thus, a ditch three feet deep, seven feet wide at top, and one foot wide at bottom, contains in a perch length (sixteen and one-half feet) seven and a half cubic yards, and may be dug for from 1s. to 1s. 6d. per perch, according to the nature of the land. These are dimensions proper for an open ditch; but if it be desired to save this width of land, then a ditch three feet deep and four feet wide throughout its depth may be dug for the same money, and it will be large enough for the mason work of a conduit, with a foot channel, which, flagged both at bottom and top, would cost 4d. to 6d. per lineal yard for the mason work, besides the expense of the stones.

Ordinary drains being narrow and deep, a man cannot turn so many cubic yards out of them in a day, as when he has a more easy posture for work, and the prices per yard here, therefore, must be raised. The drainage of the farm, from which we write, twelve years ago cost 4d. per perch, the drains being thirty inches deep, fourteen inches wide at top, and four at bottom, contained about one and a fourth cubic yards per perch, and the cost of earth work here amounted therefore to almost about 3d. per cubic yard; but this was unnecessarily dear. Drains may be dug three feet deep for about 3d. per perch, when intended for small pipe tiles. The last "spit" is in this case taken out by a tool of the proper width, and the workman does not stand lower in the drain than the top of this spit, the channel being cleared out by a drag tool of the requisite form; of course, when the pick-axe is required the work is greatly more costly, and must, in general, be done at day's wages. The expense of setting tiles and filling in the earth may be about ½d. per perch for small drains, and ¾d. for the mains. Only one further remark remains, and that is, that to all these expenses there must be added the cost of superintendence, by an experienced man; an outlay than which nothing can be more truly economical.

*Grubbing of hedgerows* will, of course, cost according to the nature of the work. It is gene-

rally let in running measure, at so much per perch of its length, from 6d. to 2s. (the faggots and wood being the property of the workmen), according to the roughness and age of the fence. When a ditch is alongside, this price includes the cleaning out and deepening of the channel, the laying a pipe tile in it, and the levelling of the whole earth, best quality upwards. No work requires closer superintendence than this. It is better policy to give a good price, and see the work well done, than to let it at a price which shall tempt the men to "slight" it. The stumps of trees may, in general, be grubbed up for 1s. a tree.

**Paring and Burning.**—The cost of this necessarily varies much with the toughness of the sward and the depth at which it is to be cut. It is work quite within the power of a horse-drawn machine; but is still, for the most part, performed by manual labor, by means of the breast plough. It will cost from 7s. to 12s. to pare the land, according as it is stubble or sward, from 6s. to 14s. to burn it, and from 1s. 6d. to 3s. to spread the ashes. It is well to burn slowly in large heaps—the first, because black ashes are thereby obtained, and the second, as wet weather is thus less likely to retard the process.

**Quarry work** is paid for by the cubic yard. 5d. to 6d. for common building stone, 4d. for the refuse smaller ones for roads, and 1s. for flag stones, are common prices; but, of course, the cost depends upon the nature and character of the quarry. The mountain limestone, Wenlock (Silurian) limestone, and trap rock, with which we are best acquainted, cost 5d. 7d. and 10d. respectively, to break for roads or drains; the size being such that there shall not be a fragment in the heap that the boy employed shall not be able to put in his mouth.

**Roadmaking** will vary in cost, according to circumstances. A road four yards wide, and laid nine inches thick, will cost, to move the earth, and fashion out the bed of it, say:—

Per lineal perch.....	£0	1	6
8 cubic yards of stone to be quarried—	0	4	0
and to be broken.....	0	5	0
and carried, say a mile.....	0	8	0
and to be levelled and spread, say..	0	1	6
. Thus costing in all per perch.....	£1	0	0

#### ANNUAL FARM OPERATIONS.

We now come to the second class of farm operations,—those which are annual, and concerning which it behoves the farmer to know both their actual cost and how to set about them. In estimating the expense connected with these operations, we shall assume the day's wages for a man to be 2s., that of a woman 10d., and that of a boy from 4d. to 1s. 4d. The price of horse labor, one pair and a man, we assume to be 8s. a day. We do not enter here into the detailed calculation by which this result is arrived at. Those who wish to see an excellent speci-

men of such calculations, will find it in the Appendix to Professor Low's work on the management of landed property,

**Tillage operations** are, in general, best performed at day's wages by the regular farm servants. The industry of these men must be preserved by the farmer's superintendence; in fact, we know only of one instance where this sort of work is paid for by measure; and this is referred to in Mr. Beacon's *Report of Norfolk*, as follows:—Mr. Cyrus Gillet, of Markshall, an agriculturist in East Norfolk, both as an owner and occupier, ploughs all his land, on a farm of 400 acres, throughout the year, with eight oxen and two ploughs. The turnip land is ploughed for barley twice, the 'olland' (clover-stubble) for wheat once, and corn-stubble for turnip five times. The farm is in 100 acre shifts. The oxen are changed four times in the course of the day; and each set is brought up by a boy who has the care of the beasts. The men do not leave during the day; and the ploughing is the work paid for at the rate of 11d. per acre for all kinds, except olland, for which 1s. 3d. is allowed. This account may perhaps appear incredible, but its truth has been tested by many farmers. His land is scarcely ever behind his neighbours in any of the business of the farm; and he very often precedes them in sowing his crops. This statement can be true only of very light land. As regards ploughmen, they should work ten hours a day, and take care of the horses besides—receiving, of course, extra wages. A good horse, fed well, will work each day from six o'clock to eleven A.M.; and, with an interval of two hours in the stable, from one P.M. till six, and keep its condition.

**Subsoil ploughing**, requiring four horses, accompanied by their two men, and accomplishing less than an acre a day, will, with the common ploughing which precedes it, cost nearly 30s. an acre.

**Ploughing** costs, at 8s. a day, for a man and pair of horses, from 5s. to 6s., up to as much in some cases as 16s. per acre, according to the nature and previous cultivation of the land, the depth of the ploughing, and the period of the year.

**Harrowing**, for each time, will cost from 4d. to 8d. per acre, according as a light implement or heavy one is employed.

**Scarifying, Cultivating or Grubbing.**—Three acres of land may be grubbed four or five inches deep within the day, by a pair of good horses, and it should thus cost 2s. 8d. per acre; and may be fairly put at from 2s. 6d. to 3s. 6d. per acre, according to the state of the land.

**Rolling** will cost according to the last number of horses employed. A six feet roller, drawn by a pair of horses, should get over about eight acres a day, and will then cost 1s. per acre.

**Management of Manure.**—Manure is either allowed to accumulate in the yard till spring, and then turned over there, and thence taken to the land and spread, or ploughed in, or

which is the better plan, it is removed, during the winter at convenient intervals, from the yards, to heaps round the liquid manure tanks, where it can be conveniently worked; or to heaps in the field on which it is ultimately to be applied, where the beds of mould have been prepared for its reception. In these latter cases it is turned at least once towards the end of spring, when the earth on which it lies is mingled with it, and the whole heap is thrown up and well broken to pieces; and again, in April, about three weeks before it is carted on the land. Some of these processes are effected at day's wages, but the others are properly piece work; and it is even well to let it all to one party of men.

The first filling in the yard will cost 3d. per yard, measured in the heap as soon as made.—The carts are made to go over the heap, if it be early in the season, and thus compress it.—Three men can work at one cart; if strong men, they can fill 120 cubic yards a day. A man and pair of horses, for at least two carts are employed, work with them, and this adds another 3d. to the cost. The second operation or first turning in the heap, costs 1d. per cubic yard, measured before being turned. Two men work together at one heap; a right and left handed man should work together; a hay knife, or similar implement, must be used to cut the heaps down in slices two feet wide; and these are successively thrown up and mixed with six inches of the earth on which they lay. The third operation, or second turning, may cost 3d. per cubic yard, also measured before turning. The fourth operation—loading and carting—will cost 3d. per yard to fill; four horses and carts are needed in travelling the distance of 500 yards. One man and horse are in a field emptying, another horse is at the heap with the cart that is being filled, a third is going full, and a fourth returning empty. Three men will fill enough (120 yards a day), to keep the whole going. Two boys will be needed to lead the carts. The expense of horse labor, besides the 3d. per yard for filling, putting two boys as equal in expense to one man will be 16s. per day, or rather more than 1 1/2d. per cubic yard. The fifth operation—spreading, will be done by two men, if the dressing be not very heavy, as fast as the dung is ready for them, and three ploughs will suffice to plough it in. The expense of spreading will thus amount to about 3d. per cubic yard. We assume about thirty yards per acre to be the amount of dung applied, and that it is applied broadcast. If it be laid in drills, then there will be needed, not two men, but one man, and three lads or women. Each row of heaps is on the middle of the drills; the man goes first and divides every heap in three; and the women follow, distributing each in its own drill.

The expense of manure making, up to its being spread on the land, need not exceed 7 1/2d. per yard, measured just before being spread; but 2 1/2d. of this, or if we exclude the spreading

also, 3 1/2d. of this, is done at day's wages; and all the rest, which is properly piece work, may be bargained for at 4d. per cubic yard. We may just add one word here on the policy of arranging men in a chain of operations; the force at each link, so to speak, being proportioned to the work or strain which is brought to bear upon it. Thus the filling, carting, dividing in the field, spreading and ploughing in of manure, are such a chain; and if the force at each link be sufficient, with industry, to do the work which will come to its share, then, though the first party only be on measure work, yet their industry, thus excited, is a surety for that of all the others.—Self interest pulls the first link along at the requisite pace, and all the other links in the chain are constrained to follow at an equal rate.

*Seed Operations.—Broadcast Sowing.*—A man will sow twelve to eighteen acres a day; and his wages, with that of the person employed in supplying him with grain or seed, may cost from 2 1/2d. to 3 1/2d. per acre.

*Drilling.*—A drill machine of ordinary breadth drawn by two horses, and attended by two men and a boy will sow ten acres a day. The day's work will cost 13s., which amounts to about 1s. 3d. per acre. Dibbling machines are not yet made to get over the land so fast as this. Newbury's horse dibble will sow four or five acres in a day, and the cost of the operation will therefore be from 2s. to 2s. 6d. or more per acre. Mangold wurzel seed is generally dibbled. We have done it hitherto by hand—the drills being first marked either longitudinally by a drill, or transversely, at intervals of the necessary length, by a ribbed roller. Two women, whose wages amount to 1s. 8d. per acre, will dibble one acre a day. Turnip seed is sown by a two-furrowed drill, drawn by one horse. The daily cost is 5s.; and they will get over five acres a day.

*Hoeing-in Wheat* will cost from 7s. to 8s. an acre. The men carry a bag of seed tied round their waist, and, using a very broad light hoe, they make a shallow drill across the ridge, sowing the seed in it as they return to the side from which they started, and covering it over with the earth moved in forming the next drill. The whole is thus sown, covered and trodden in.

*Potatoe planting*, if done wholly by spade, on land already worked, may cost 10s. to 12s. an acre, the distance between the rows being thirty inches. Potatoes may be cut into "sets" for 2d. to 3d. per sack, according to the size of the potatoe, and the consequent number of pieces into which it has to be divided.

*Setting Potatoes* is done at days wages by women or children, who walk backwards in the drills, each with a basket full of sets, and place them, as they proceed, at intervals of a foot. They are kept from idling by two ploughs, which, continually circling the party, open fresh drills on one side and close them on the other, so that, the number of setters being proportioned to the work, the whole operation proceeds to-

gether without hindrance in any of its parts. Three women or children will set an acre a day, and may cost 2s. to 2s. 6d.

*The Veterinarian, for May.* London: Longman and Co., Paternoster Row.

In the present number, a professional gentleman contributes an essay "*On the Diseases of Farm Horses, arising from Mismanagement,*" which will, when completed, contain many very valuable suggestions to the farmer and grazier. The writer remarks:—

This is an important subject for the farmer's consideration, for he frequently considers many of the losses he sustains in this respect as the consequence of natural causes over which there is no control, and which no knowledge can avert. I hope to be able, in the course of this essay, to convince persons entertaining such fated opinions, that thousands of horses annually perish from a neglect of the conditions required for their preservation in health and freedom from disease.

With respect to food, I shall prove that many dangerous diseases arise from improper regulations of diet; as to quantity and quality, and the times at which it should be given,—the rules for which are simple and easy enough, but are continually transgressed through carelessness or absurd prejudices.

Also, that excess of labor forms a prolific source of disease in both young and old horses, and the vigorous health of young ones in particular is often wasted and destroyed from premature work, which, if economically managed for a year or two at most, might have preserved them in health and activity nearly to the full term of the allotted periods of their lives, instead of being dissipated in the first six or seven years of their existence.

And, lastly, that insufficient shelter and exposure to wet and cold are very common causes of disease, the effects of which are certain to manifest themselves in some way or other on horses that have been exposed to their influences, though oftentimes obscurely, and at a remote period. Our patients, far more than those of the human practitioner, are exposed to the influence of physical agents. One-half of the diseases of the horse and of cattle are referrible to temperature—many more to the changes effected in the atmospheric air by respiration, perspiration, and the various excretions, and the greater part of the residue may be traced to some unknown, and not sufficiently appreciated, atmospheric agency.

These are the chief points to be considered in this essay; *food, labor and temperature*, agents that are continually acting on the condition and general health of farm horses, either for good or for ill; if properly directed, they produce in them strength and capability of enduring labor; but, misdirected, their beneficial in-

fluences are changed from ministers of good to insidious or manifest sources of disease.

#### INSUFFICIENT OR IMPROPER FOOD.

The purpose of food being the supply of materials which, when prepared by the process of digestion, shall repair the waste of the body, and maintain its growth and temperature, it must be evident, if this process is interfered with by the supply of articles of food such as will neither suit the powers of digestion or the wants of the system, that disturbances of some kind are likely to occur in any or all of the steps of the nutritive process, from the reception of the food into the stomach, to its appropriation and assimilation to the living textures. Accordingly we will direct our attention—first, to the diseases of the stomach, which are easily traced to errors in diet, and interference with the digestive economy.

*Diseases of the Stomach.*—The stomach of the horse is comparatively small, holding about three gallons, whilst the ox possesses four stomachs, the first of which is larger than that of the horse. This affords us a very important lesson at the commencement, that whilst the ox is so constructed as to consume large quantities of fodder at a meal, the horse, on the contrary, requires a more moderate quantity of a more nutritive nature, and to be fed oftener. To insure perfect digestion of the food, it requires to be first masticated with the teeth, and moistened with the salivary secretion in the mouth, which flows during this process in considerable quantities. According to Professor Spooner, the saliva flows during the time of feeding at the rate of two gallons per hour.\* In the stomach, the food is further acted on in healthy digestion by the gastric juice, when it is converted into a soft pulpy mass called chyme, which passes as fast as it is formed into the intestinal canal. This part of the digestive process is very active in the horse; but it is sometimes interfered with, in consequence of devouring his food in too rapid a manner, without being either properly masticated, or mixed with the salivary secretion. This circumstance occasionally happens when the animal has been fatigued with hard work, and restricted from food for an improper length of time. In these cases, indigestion takes place, which is a very serious affair, for the life of the animal is in considerable danger. Fermentation of the food and disengagement of the gases quickly ensue, and as the horse can neither belch up the air, nor vomit up the food, distention of the coats of the stomach takes place, occasioning violent agonizing pains, spasm, and all the symptoms recognised in aggravated cases of

\* "In injuries where the salivary or parotid ducts had been opened, he (Mr. Spooner) had observed no flow of saliva took place, except when the animal was feeding; and it then discharged itself in a stream, by weight, measure, and time, at the rate of two gallons per hour."—*Proceedings Veterinary Medical Association, 1837-8* p. 102.

colic, for which it is frequently mistaken. This alarming disease is recognised by veterinary surgeons as acute indigestion.

It should be understood that digestion, although always in part chemical, is controlled by a superior superintending influence—the vital power; and no sooner does this power fail, or the chemical agencies or decompositions become too strong for it, than we have fermentation of the food, and precisely the same changes in the stomach as would occur out of it, when kept in a moist state at similar temperature.—The fermentable nature of the food, and the peculiar construction of the horse's stomach, which prevents vomiting, and his occasional detention from food and water during the long hours of labor, are circumstances which account for the great liability of farm horses to this disease.

The stomach of the horse is liable to another dangerous disease, arising from a false and injurious system of dieting.

**THE STAGGERS.**—This disorder is slow in its progress, and seldom observed until firmly established. The symptoms are easily recognised by the drooping head, impaired vision, staggering gait, and sometimes violent and dangerous struggling of the afflicted animal. It is more frequently observed in farm stables during the busy tillage season than at any other time; in consequence of long continued labor, and little rest or food, except at night, when they are allowed to gorge their stomachs to repletion.

The late Professor Coleman used to relate a circumstance in his lectures, connected with this disease, which throws considerable light on its origin. The artillery horses stationed in London during the winter of 1817, suffered very considerably from stomach staggers, so much so, that it was considered endemic, and of an infectious character. Mr. Coleman, with his usual penetration, soon discovered the cause.—He found that, from some new regulations about that time, the stablemen were not allowed any candles, and during the winter the horses were bedded up at five o'clock in the evening, and not fed again until eight o'clock on the following morning, when they consumed their breakfasts voraciously, gorging their stomachs, not to the degree likely to produce acute indigestion, but sufficiently distending them as to oppress the blood vessels and the circulation through them. This practice continued, day after day, caused a specific inflammation of the stomach, an inflammation of a peculiar character, differing from gastritis, or inflammation of the part. Mr. Coleman regarded the symptoms produced as resulting from the sympathetic connection between the stomach and the brain, united to the effects that would arise from the daily distention throwing a vast quantity of blood on the brain. He simply obtained an order for candles for the use of the stablemen, which enabled the horses to be fed at a later hour in the evening, and an ear-

lier one in the morning, when the disease disappeared.

A common error still prevails in many districts, that staggers is a contagious disease; but should the horses on a farm be attacked occasionally with slight fits of this kind, the farmer may rest assured that there is mismanagement somewhere in the feeding department.

We will now direct our attention to another common and dangerous class of ailments, arising from errors in feeding, and interference with the digestive economy.

**DISEASES WITH THE INTESTINAL CANAL.**—The changes which take place in the gastric process of digestion have been noticed; but, others are carried on in the intestines, where the chymous mass, becoming mixed with the hepatic and pancreatic secretions, is converted into chyle, which is passed on by the muscular creeping action of the small intestines into the larger ones; and during this passage it is acted on by the agency of a set of vessels termed lacteals, whose orifices are abundantly spread over their villous surfaces, for the purpose of absorbing the nutritious parts. The same absorption takes place in the large intestines, only the chylous mass is retained in the colon for a longer period, by which its nutritious parts are finally separated and absorbed, and the excrementitious portions are afterwards expelled per rectum.

Now, in this process, we observe that the united pancreatic and biliary fluids poured on the chyme, penetrate it, render it fluid, animalize it, separate the nutritious from the excrementitious, which is finally carried into the circulation.

It sometimes happens, however, that serious disturbances occur during this process. Horses are frequently fed with imperfect or indigestible articles of food, which, accumulating either in the small or large intestines, prove sources of irritation and disease. It is a very common case to find the colon, or big gut, as it is frequently called, packed with indigestible fibrous matters, which, on being evacuated by the use of medicines and injections, prove to be unmasticated and unchymified chaff of straw and husks of oats: the refuse of the barn, consisting of the husks of various grain, half-rotted frosted clover, weather beaten dusty hay, or hay mouldy and rusty and covered with parasitical growths, musty pea haulm, and sapless fibrous turnips; these are articles that frequently occasion visceral complaints.

But amongst all these, the use of chaffed straw, sometimes of wheat, but more frequently of barley, proves the most common cause, and consequently should never be given alone, but mixed with hay in the proportion of one-third of the former to two of the latter. Some horses are in the habit of bolting their corn, which passes into the intestines intact. This is also a cause of indigestion, and its consequences; and hence the bruising of oats is not only an economical

practice, but lessens a tendency to visceral disease.

In colic cases of this kind we do not find the rolling, agonising pain of spasmodic colic; but the animal lies and rises at short intervals, frequently points his muzzle round to the flank, the seat of pain, and when standing, either paws the litter with one of its fore feet, or strikes at its belly with its hinder ones. The pain, in cases of this kind, arises from the indigested food impacked in the colon; and the symptoms are seldom entirely removed, until the greater part become evacuated. This disease is never to be reckoned void of danger, as it may unexpectedly terminate in inflammation and gangrene.

Colic is very commonly attributed to horses from drinking cold spring water when in a heated state. This is the spasmodic colic of veterinary authors and others. That spasmodic constriction of the small intestines is occasionally caused in this way, producing very intense and acute pain, I do not question; but in a general way, the colic pain is caused by the washing of imperfectly digested food from the stomach into the intestinal canal, before it has undergone chymification, rather than to any direct influence of the cold water on the muscular coat of the intestines. I believe that food of the best description, when washed into the intestines in this manner, is certain to cause pain and spasm from the fermentation and disengagement of gases, which invariably takes place on vegetable matter being exposed to heat and moisture, which, if it had been properly acted on by the antiseptic properties of the gastric juice, would have been incapable of being fermented.

It should be understood, that a horse will drink at one time a much greater quantity than his stomach can contain, supposing it to be entirely empty; but even when he drinks a less quantity, it remains not in the stomach, but passes on to the large intestines, and is retained in the cæcum, commonly called the water gut. Hence the danger to be apprehended at all times from allowing horses to drink a quantity of water soon after feeding, or before the food is sufficiently digested in the stomach, from the chance of portions of it being washed into the intestinal canal, when the consequences are, as I before stated, fermentation and disengagement of gases, causing pain and spasms, which, when it occurs in the small intestines, produces spasmodic colic, or it may occur in the large intestines, causing flatulent colic. In the former disease we cannot detect the swelling; but it is evident enough when the colon is the seat of the disease, by the enlargement of the belly on the off flank.

Veterinary surgeons are seldom called on to attend cases of this kind in farm stables at the onset. The nostrums used by the farmers are stimulants of various kinds, such as turpentine, peppermint, gin, pepper, and ginger. Simple cases of colic can generally be successfully treated by the stimulating principle; and many cases admit of this being carried to an extreme

extent with comparative safety; but in other cases, we have constipation to deal with, which bids defiance for a time to our remedies; and then, if strong stimulants have been previously given, inflammation is quickly set up, and the disease terminates in gangrene, which, if otherwise treated at the commencement, might have had a successful result.

These visceral diseases are frequently confounded with that of enteritis, or inflammation of the bowels, and by farmers always treated alike. This error invariably proves fatal to the patient, for the stimulating drenches, which might prove beneficial in one, is certain to cause death in the other.

It is desirable that the farmer should be able to make a distinction between simple colic and enteritis, which may generally be done by attending to the symptoms of each. In cases of colic, there is very little acceleration of pulse, except during the paroxysms of pain. The extremities are also warm, and there are intervals of cessation from pain, which is much abated by a discharge of wind and fæces. But in inflammation of the bowels, the pains remain equable and fixed; the pulse is rapid, hard, and thread-like, sometimes almost indistinct; the breathing is considerably accelerated; the extremities are icy cold; and obstinate costiveness prevails from the commencement. Enteritis is, fortunately, not a very common disease in farm stables; but when it does occur, it may generally be traced to errors in diet.

With respect to visceral diseases generally, it would appear, from their being more prevalent during the latter part of autumn and commencement of winter, that the state of the atmosphere has some predisposing influence. At this period of the year the atmosphere is frequently moist and relaxing; and under its influence the muscles, and with them the heart and arteries, lose power and tone; the textures also become relaxed, and the perspiration which accumulates in the long close hair of farm horses during work perpetuating the relaxation. In this state, the stomach and intestines also participate in the loss of tone; and hence disease perhaps so often occurs at this season on very slight errors of diet.

There are a few simple rules, founded on the experience of some of our best practical farmers, on the management of horses that may be introduced here with advantage.

1. The earlier the horses are watered and fed in the morning, and the longer the intervals between that time and yoking, the greater chance is there of the food undergoing perfect digestion. Ordinary farm-work is not likely to interfere with the digestive process; but active exercise or severe cart-work are likely to do so, and should always be avoided soon after a meal.

2. The mid-day meal and full one hour's rest should never be interfered with. The practice of accomplishing a day's work in one yoking, by keeping the horses at work for eight or nine

hours on a stretch, is highly injurious, being certain to cause remote, if not immediate disease.

3. On the return of the team to the stable in the evening, it is wise at all times to divide the night's allowance of food, giving just as much at first as will remove the sensation of hunger, and in an hour or so afterwards the remainder may be given with impunity.

It had been shewn in cases where the digestive organs fail in appropriating nourishment from various improper articles of food, that they become distended, irritated, and otherwise disordered. Sometimes imperfect food is digested, and yet produces disease, from the imperfect blood sent thereby into the circulation.

L I F E .

I was dreaming, I was dreaming of a happy land  
and bright,  
Where the sun poured down unclouded a flood of golden light,  
And I seemed 'midst flowery valleys with a gay and happy throng,  
And a choir of youthful voices ever thrilled the joyous song;  
But the sun burst through my lattice with his brightest dawning gleam,  
And recall'd my wandering spirit from its fond delusive dream—  
From the gay but fleeting vision that my fancy deem'd so fair,  
To a life not bught, but real—to a world of toil and care.

Ah! thus life's morning opens, and the world around seems fair,  
And the heart bounds light and joyous, unchained with thought or care;  
And the fancy revels freely over scenes of gay delight;  
But alas! the dream is broken with the dawn of reason's light.  
And as the mists of morning like phantoms flit away,  
As higher up his azure path the sun ascends his way,  
So boyhood's airy visions of coming joys take wing,  
Or live but in the memory to tell of manhood's spring.

Then the mid-day sun rejoiceth in the splendour of his rays,  
But soon, ah! soon, there riseth a cloud to dim his blaze;  
And, changing as he hastens ever downward in his flight,  
Now veiled with gloomy shadows, now clad in golden light.  
And thus man journeys onward through a span of fleeting years,  
His life now bright with sunny joy, now dark with doubts and fears,  
His pathway ever changing, now sorrow and now shine,  
From the morning of his childhood to the eve of his decline.

Then comes the quiet evening when the sun sets in the west,

And the moon with solemn grandeur unveils her silver crest,  
When the lamps of heaven glisten with a bright and sparkling light,  
And the gathering shadows deepen with the gloom of coming night,  
And thus may sorrows gather round the evening of the just,  
When the sun of life is setting, and earth claims her kindred dust;  
And thus the weary spirit, when its earthly bonds are riven,  
Ascends, all calm and beautiful, to tread the halls of heaven.

May 10th, 1852.

THE GILFORD MAN.

ONE STORY'S GOOD TILL ANOTHER IS TOLD.

There's a maxim that all should be willing to mind—  
'Tis an old one—a kind one—and true as 'tis kind;  
'Tis worthy of notice wherever you roam,  
And no worse for the heart if remember'd at home!  
If scandal or censure be raised 'gainst a friend,  
Be the last to believe it—the first to defend!  
Say to-morrow will come—and then Time will unfold  
That "one story's good till another is told!"

A friend's like a ship, when with music and song  
The tide of good-fortune still speeds him along;  
But see him when tempest hath left him a wreck,  
And any mean billow can batter his deck.  
But give me the heart that true sympathy shows;  
And clings to a messmate whatever wind blows;  
And says—when aspersion, unanswer'd, grows bold—  
Wait! "one story's good till another is told!"

C.W.

DAY'S PLOUGHING.—The fine old park at Goldielea requiring to be broken up, Messrs. Laurie, Terreglestown, and Henderson, Garroch, have taken it for four years, during which they will raise three white and a green crop. They have also become tenants for a similar period of two parks on the adjoining property of Dalskaith, and in order to have such a quantity of old lea turned over at once, their numerous friends resolved to give them a day's ploughing, which came off in great style on Saturday last. The teams and their drivers mustered by break of day, and were soon marshalled and set to work; no fewer than 109 ploughs and teams being present, 83 of which found ample labor on Goldielea. The day was soft, but the hardy ploughmen heeded little the rain which fell, and patiently pursued their labors. At mid-day a breathing space was allowed, when both men and horses were refreshed. A goodly quantity of bread and cheese, strong beer, and mountain dew, must have been consumed by the ploughmen and onlookers, the latter, as usual, mustering in great numbers. Work was soon re-commenced, and continued until the green sward had been fairly converted into red land. The value of the teams and appurtenances was estimated by competent judges at not less than £7,000.—*Dumfries Herald.*



## PROVINCIAL MUTUAL AND GENERAL INSURANCE COMPANY.

OFFICE,—CHURCH STREET, TORONTO.

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

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

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

## AGRICULTURAL WAREHOUSE.

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

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

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

GEORGE HAGAR,

103, St. Paul Street

Montreal, 1st April, 1851.

## IMPORTANT TO FARMERS.

**T**HE Subscriber offers for sale the following seeds:—

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

The above varieties of Turnips warranted from Rape.

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

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

—ALSO,—

His usual supply of English and French Garden Seeds.

GEORGE SHEPHERD.

Nursery and Seedsman to the Agricultural Society for Lower Canada.

1st Mach, 1852.

## LOWER CANADA AGRICULTURAL SOCIETY,

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

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

**T**HE Secretary and Treasurer of the Society is in attendance daily, from ten to one o'clock.

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

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

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

WM. EVANS,

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

1st January, 1852.

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

## MATTHEW MOODY,

MANUFACTURER OF

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

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

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